Accessing Global Value Chains

The Politics of Promoting Export-Driven Industrialisation and Upgrading in the Mozambican Cashew Processing Industry

Dissertation

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Zusammenfassung

Hintergrund, Forschungsfrage und Verortung der Dissertation

Erfolgreiche Exportsektoren in der verarbeitenden Industrie und der Agrarindustrie sind wichtige Triebkräfte für die wirtschaftliche Transformation in subsahara-afrikanischen Ländern. Vielen verarbeitenden Firmen fehlen jedoch die notwendigen technologischen Fähigkeiten, um Zugang zu globalen Wertschöpfungsketten zu erlangen und wettbewerbsfähig zu bleiben, indem sie ihre technologischen Fähigkeiten weiter ausbauen (*Upgrading*). Dennoch sind einige erfolgreiche Exportsektoren in subsahara-afrikanischen Ländern entstanden. Diese wurden von aktiven Eingriffen des Staates begleitet, z.B. durch protektionistische industriepolitische Maßnahmen und die Schaffung von Institutionen für deren Umsetzung. Die vorliegende Dissertation beschäftigt sich mit der Forschungsfrage: Wie prägen politische Prozesse die Förderung von Exportsektoren und *Upgrading* in Subsahara-Afrika? Diese Frage wird anhand einer qualitativen Einzelfallstudie der Cashew verarbeitenden Industrie in Mosambik im Zeitraum von 1991 bis 2019 untersucht und beantwortet. In den 1960er und 1970er Jahren galt Mosambik als weltweit wichtigster Produzent und Verarbeiter von Cashew Nüssen. Ende des 20. Jahrhunderts brach die Cashew verarbeitende Industrie in Mosambik zusammen. Heute ist sie eine der wenigen erfolgreichen Exportindustrien im Agrarbereich.

Diese Dissertation ist in der Politikwissenschaft, genauer im Fachgebiet der politischen Ökonomie, verortet. Letztere fußt auf der Annahme, dass politische und wirtschaftliche Systeme in Ländern des Globalen Südens aufgrund von wechselseitigen Abhängigkeiten und Einflussnahmen nicht getrennt voneinander betrachtet werden können. In dieser Arbeit werden die Entstehung und Entwicklung von exportorientierten Wirtschaftssektoren aus einer politischen Perspektive betrachtet. Die Dissertation bezieht jedoch neben theoretischen Ansätzen aus dem Bereich der Politikwissenschaft, insbesondere dem „*Political Settlements*“ Ansatz[1], auch Ansätze aus der Wirtschaftswissenschaft mit ein, insbesondere die Forschung zu globalen Wertschöpfungsketten und zu technologischen Fähigkeiten von Firmen.

[1] Der *Political Settlements* Ansatz geht davon aus, dass gesellschaftliche Machtstrukturen bestimmen, ob und wie bestimmte Wirtschaftssektoren gefördert werden und ob industriepolitische Maßnahmen effizient durchgesetzt werden. Gesellschaftliche Machtstrukturen beziehen sich auf die Machtbeziehungen innerhalb der regierenden Partei(en), zwischen der Regierung und der politischen Opposition und zwischen der Regierung und wirtschaftlichen Akteuren.

Forschungsdaten

Die Forschungsergebnisse der Dissertation basieren auf umfassenden Primärdaten, inklusive 58 qualitativen Experteninterviews mit Vertreter*innen von staatlichen Institutionen, lokalen Wirtschaftsverbänden und Gewerkschaften, Unternehmer*innen, internationalen Organisationen im Bereich der Entwicklungszusammenarbeit, unabhängigen Berater*innen und lokalen und internationalen Forscher*innen. Darüber hinaus wurde eine standardisierte Umfrage unter 10 Cashew Verarbeitern in Mosambik durchgeführt. Die Primärdaten wurden während einer Pilotstudie im September 2017 sowie eines knapp dreimonatigen Forschungsaufenthalts von Februar bis April 2018 in Mosambik erhoben und mithilfe des Computerprogramms MAXQDA qualitativ ausgewertet. Darüber hinaus stützt sich die Arbeit auf eine umfassende Auswertung der wissenschaftlichen Sekundärliteratur sowie von Branchen- und Beratungsberichten, offiziellen Dokumenten und Daten, Zeitungsartikeln und Internetquellen.

Theoretischer, empirischer und methodischer Beitrag der Dissertation

Die Dissertation leistet einen wichtigen theoretischen Beitrag, indem sie den *Political Settlements* Ansatz mit der Forschung zu globalen Wertschöpfungsketten verknüpft. Ziel ist es, zu untersuchen, wie sich politische Prozesse auf die Entstehung der Cashew-Industrie, die *Governance*-Strukturen der lokalen Cashew-Wertschöpfungskette sowie auf die *Upgrading*-Prozesse von lokalen Cashew Verarbeitern auswirken. Die Arbeit leistet einen empirischen Beitrag, indem sie die Entstehung und Entwicklung eines in Mosambik (und Subsahara-Afrika) bisher wenig untersuchten Exportsektors aus politischer und ökonomischer Perspektive erforscht. Darüber hinaus existieren kaum Studien, die einerseits untersuchen, wie exportorientierte Firmen in Ländern des Globalen Südens technologische Fähigkeiten erlangen, um Zugang zu globalen Wertschöpfungsketten zu erhalten und um global wettbewerbsfähig zu bleiben. Andererseits ist bisher noch wenig erforscht, wie diese Lernprozesse auf Firmenebene durch industriepolitische Maßnahmen und Eingriffe von staatlichen Institutionen in lokale Wertschöpfungsketten geprägt werden. Schließlich leistet die Dissertation durch eine Operationalisierung des Begriffs „*Upgrading*“ einen methodischen Beitrag zur globalen Wertschöpfungskettenanalyse.

Aufbau der Arbeit

Die Einleitung der Dissertation (Kapitel 1) beginnt zunächst mit einem Problemaufriss und einer Erläuterung der zu beantwortenden Forschungsfrage und deren Unterfragen. Hieran schließt sich eine knappe Zusammenfassung der wichtigsten Forschungsergebnisse, des theoretischen, empirischen und methodischen Beitrags sowie der Relevanz der Arbeit an. Der folgende Literaturüberblick (Kapitel 2) legt den aktuellen Forschungsstand dar und zeigt bestehende Forschungslücken auf, zu deren Schließung diese Arbeit beiträgt. Es folgt der theoretische Rahmen der Arbeit (Kapitel 3), der zunächst die zentralen Theorien und Konzepte des *Political Settlements* Ansatzes und der globalen Wertschöpfungskettenanalyse vorstellt. Es werden Modelle zur Operationalisierung von *Upgrading* in globalen Wertschöpfungsketten sowie zur Analyse von *Political Settlements* entwickelt. Schließlich zeigt der theoretische Rahmen drei Wege auf, durch die sich politische Prozesse auf die Förderung von Exportsektoren und das *Upgrading* von Firmen auswirken. Der Methodenteil (Kapitel 4) schildert den Aufbau der Fallstudie, die Kriterien zur Fallauswahl sowie das methodische Vorgehen der Arbeit. Die Datenquellen, Datenerhebung und Auswertung der Primärdaten werden ausführlich dargelegt und methodische Einschränkungen diskutiert.

Das 5. Kapitel schildert knapp die Entwicklung des Cashew Sektors in Mosambik von 1950 bis heute. Der historische Abriss mündet in einen Überblick über die aktuellen industriepolitischen Maßnahmen und Institutionen im Cashew Sektor sowie in ein Profil des Sektors. An dieses Hintergrundkapitel schließt sich eine detaillierte Analyse der Cashew Wertschöpfungskette auf globaler und mosambikanischer Ebene an (Kapitel 6). Diese umfasst zum einen eine Diskussion der *Governance*-Strukturen innerhalb der Cashew Wertschöpfungskette. Zum anderen wird eine Matrix erstellt, die veranschaulicht, welche technologischen Fähigkeiten Cashew Bauern und Verarbeiter benötigen, um Zugang zur globalen Cashew Wertschöpfungskette zu erlangen und um wettbewerbsfähig zu bleiben.

Im nächsten Schritt wird erforscht, weshalb die mosambikanische Regierung die Cashew verarbeitende Industrie Ende der 1990er Jahre, kurz vor deren Zusammenbruch, durch ein protektionistisches Cashew Gesetz unterstützte und welche Akteure von diesem Gesetz kurz- und mittelfristig profitierten (Kapitel 7). Hierbei liegt der Fokus auf einer Analyse des *Political Settlement*s, das den politischen Kurs der mosambikanischen Regierung in Bezug auf die Förderung des Cashew Sektors maßgeblich prägte. Die Analyse umfasst zum einen die

Machtbeziehungen zwischen der mosambikanischen Regierung und der Oppositionspartei RENAMO sowie die Beziehungen zwischen der Regierung und den wirtschaftlichen Akteuren des Cashew Sektors. Zum anderen wirkten sich ideologische Machtkämpfe innerhalb der Regierungspartei, die sich unter anderem an der Reform des Cashew Sektors entbrannten, und der Einfluss der internationalen Finanzinstitutionen (Weltbank und Internationaler Währungsfonds) auf das *Political Settlement* aus.

Das folgende Kapitel (Kapitel 8) legt dar, wie sich die technologischen Fähigkeiten der Cashew verarbeitenden Firmen in Mosambik seit dem Wiederaufbau der Cashew Industrie Anfang der 2000er Jahre bis zum Jahr 2019 entwickelten. Es zeichnet nach, welche Fähigkeiten ausgebaut wurden und wie sich dadurch die Effizienz von Produktionsprozessen, die Qualität des Endprodukts, die Beziehungen zu Zulieferern, die Erschließung neuer Märkte sowie die Arbeitsbedingungen in den Fabriken erhöhten. Das Kapitel analysiert darüber hinaus, welche Faktoren diesen Wandel in der Cashew verarbeitenden Industrie in Mosambik vorantrieben und welche ökonomischen und sozialen Auswirkungen dies für die Firmen, aber auch für den Sektor bzw. das Land hatte.

Daran anknüpfend wird mithilfe der Methode „*Process Tracing*“ untersucht, welche Lernkanäle (*Learning Channels*) Cashew verarbeitende Firmen in Mosambik nutzten, um ihre technologischen Fähigkeiten auszubauen (Kapitel 9). Im Fokus steht auch die Frage, weshalb sich industriepolitischen Maßnahmen sowie die Eingriffe des staatlichen Cashew Instituts in die lokale Wertschöpfungskette negativ auf das *Upgrading* von Cashew Verarbeitern auswirkten.

Aufbauend auf den Forschungsergebnissen aus den Kapiteln 6 bis 9 wird im Schlusskapitel der Arbeit (Kapitel 10) dargelegt, wie sich die Politik der mosambikanischen Regierung auf den Wiederaufbau der Cashew verarbeitenden Industrie, die *Governance*-Strukturen der lokalen Cashew Wertschöpfungskette sowie auf *Upgrading*-Prozesse von Cashew verarbeitenden Firmen auswirkte. Das Kapitel diskutiert darüber hinaus, inwiefern die mosambikanische Cashew Industrie als ein erfolgreicher Exportsektor betrachtet werden kann. Aus den Forschungsergebnissen der Arbeit werden anschließend theoretische und praktische Implikationen sowie Politikempfehlungen abgeleitet. Die Dissertation endet mit einem Ausblick auf zwei weitere relevante Forschungsgebiete, die an diese Arbeit anknüpfen.

Zentrale Forschungsergebnisse

Die Dissertation stellt die These auf, dass die mosambikanische Regierung die Cashew verarbeitende Industrie unterstützte, um ihr politisches Überleben Ende der 1990er zu sichern. Die Unterstützung des Cashew Sektors war eine Wahlkampfstrategie der Regierungspartei FRELIMO und eine Möglichkeit, rivalisierende Fraktionen innerhalb der Partei zu vereinen. Infolge der von der Weltbank geforderten Liberalisierung des Cashew Sektors entbrannten zum einen ideologische Kämpfe zwischen dem sozialistisch geprägten Flügel der Regierungspartei FRELIMO und Anhängern einer freien Marktwirtschaft sowie zwischen der hochverschuldeten mosambikanischen Regierung und den internationalen Finanzinstitutionen. Zum anderen waren die Liberalisierung und der Zusammenbruch des Cashew Sektors ein umstrittenes Wahlkampfthema zwischen FRELIMO und der Oppositionspartei RENAMO. FRELIMO war auf die Stimmen der Arbeiter*innen in den Cashew Fabriken im Norden des Landes und deren Familien angewiesen, um die Präsidentschaftswahl im Dezember 1999 zu gewinnen. Im September 1999 verabschiedete die Regierung daher ein protektionistisches Cashew Gesetz, das starke Anreize für die Verarbeitung von Cashew Nüssen in Mosambik schaffte. Anders als von der Regierung propagiert, profitierten davon zunächst weder Cashew Bauern noch die verarbeitende Industrie, die kurz darauf zusammenbrach. Mittelfristig begünstigte das Cashew Gesetz jedoch den Wiederaufbau der Cashew verarbeitenden Industrie sowie mosambikanische und ausländische Firmen, die nach 2002 in Cashew Fabriken investierten.

Die Dissertation veranschaulicht, dass sich das Cashew Gesetz nicht nur auf die Entstehung der Cashew Industrie nach ihrem Zusammenbruch auswirkte, sondern auch auf die *Governance*-Strukturen innerhalb der lokalen Cashew Wertschöpfungskette. Das Cashew Gesetz erhöhte mittelfristig die Macht der Cashew verarbeitenden Industrie gegenüber Firmen, die rohe Nüsse exportierten. Eine durch das Gesetz eingeführte Steuer auf den Export von rohen Cashew-Nüssen von 18% wirkte sich negativ auf die Preise für Cashew Bauern aus. Hiervon profitiert die Cashew verarbeitende Industrie auf Kosten der Bauern. Die Machtposition der Cashew Bauern wird zudem durch die mangelnden Kapazitäten des staatlichen Cashew Instituts für die Umsetzung von Maßnahmen zur Förderung von Cashew Bauern geschwächt.

Die Eingriffe des staatlichen Cashew Instituts wirkten sich darüber hinaus negativ auf die Entstehung von landwirtschaftlichen Zulieferfirmen (sogenannte Rückwärtsverknüpfungen bzw. *Backward Linkages*) in Mosambik aus. Durch die kostenlose oder subventionierte

Bereitstellung von Düngungsmitteln und Setzlingen für Cashew Bauern wurde das Institut als Zulieferer von landwirtschaftlichen Inputs selbst ein Teil der lokalen Wertschöpfungskette. Dies verhinderte zum einen die Entstehung von lokalen Firmen, die landwirtschaftliche Inputs an Cashew Produzenten liefern. Zum anderen zerstörte es deren Bereitschaft hierfür zu bezahlen.

Das Cashew Gesetz hatte außerdem Auswirkungen auf das *Upgrading* von Cashew Verarbeitern. Die Ergebnisse der Arbeit zeigen, dass das Gesetz den Druck auf die Cashew verarbeitende Industrie, in ihre technologischen Fähigkeiten zu investieren, um global wettbewerbsfähig zu bleiben, reduzierte. Staatliche Subventionen für die Cashew Industrie waren nicht an spezifische Ziele, z.B. die Modernisierung von Fabriken, die Einhaltung von internationalen Lebensmittelstandards oder die Verbesserung von Arbeitsbedingungen, geknüpft. Zudem fehlten dem staatlichen Cashew Institut die Ressourcen und das sektorspezifische und technische Knowhow, um *Upgrading* in der Cashew verarbeitenden Industrie voranzutreiben. Schließlich verschaffte das Gesetz Mitglieder*innen der FRELIMO-Partei Zugang zu Renten, die eine weitreichende Reform des Gesetzes trotz bestehender Mängel verhinderten.

Die Ergebnisse der Dissertation zeigen darüber hinaus, dass die Lernkanäle, die verarbeitende Firmen in Ländern des Globalen Südens nutzen können, um ihre technologischen Fähigkeiten auszubauen, begrenzt sind. Wissenstransfers durch internationale Käufer begünstigen den Ausbau von technologischen Fähigkeiten und das *Upgrading* von Firmen nicht, wenn diese in Wertschöpfungsketten mit marktbasierten oder modularen *Governance*-Strukturen agieren. In Ländern, in denen industriepolitische Maßnahmen nicht effizient durchgesetzt werden, sind Wissenstransfers durch staatliche Institutionen unwahrscheinlich. Firmen machen daher vor allem von kostspieligen Lernkanälen auf Firmenebene gebrauch, z.B. „*learning by doing*“ oder die Einstellung von (ausländischen) Fachkräften. Oder aber sie hängen von der Unterstützung von internationalen Gebern ab, um die notwendigen technologischen Fähigkeiten aufzubauen, um Zugang zu globalen Wertschöpfungsketten zu erlangen und wettbewerbsfähig zu bleiben.

Die Ergebnisse der Dissertation verdeutlichen, dass Programme von Geberorganisationen, die auf die Einbindung von verarbeitenden Firmen in globale Wertschöpfungsketten abzielen, nicht nur auf einer umfassenden Analyse von globalen Wertschöpfungsketten und deren *Governance*-Strukturen basieren müssen. Erfolgreiche Interventionen in globale

Wertschöpfungsketten müssen darüber hinaus miteinbeziehen, wie sich lokale politische Prozesse auf Dynamiken in lokalen Wertschöpfungsketten auswirken.

Relevanz der Arbeit

Die Erkenntnisse der Dissertation sind von Relevanz für Forscher*innen aus unterschiedlichen Disziplinen, insbesondere der Politikwissenschaft und den Entwicklungsstudien, aber auch den Wirtschaftswissenschaften. Die praktischen Implikationen und Politikempfehlungen sowie die Analysewerkzeuge der Arbeit, z.B. die Matrix zur Darstellung von technologischen Fähigkeiten in der Cashew Industrie, sind von Interesse für Vertreter*innen von staatlichen Institutionen in subsahara-afrikanischen Ländern und (internationalen) Organisationen, die im Bereich der Entwicklungszusammenarbeit, insbesondere der Privatsektorförderung, tätig sind, sowie für lokale Unternehmer*innen und Vertreter*innen von Wirtschaftsverbänden.

Abstract

Successful export sectors in manufacturing and agribusiness are important drivers of structural transformation in Sub-Sahara African countries. Backed by industrial policies and active state involvement, a small number of successful productive export sectors has emerged in Sub-Saharan Africa. This thesis asks the question: *How do politics shape the promotion of export-driven industrialisation and firm-level upgrading in Sub-Saharan Africa?* It exemplifies this question with an in-depth, qualitative study of the cashew processing industry in Mozambique in the period from 1991 until 2019. Mozambique used to be one of the world's largest producers and processors of cashew nuts in the 1960s and 1970s. At the end of the 20th century, the cashew processing industry broke down completely but has re-emerged as one of the country's few successful agro-processing exports.

The thesis draws on theoretical approaches from the fields of political science, notably the political settlements framework, global value chain analysis and the research on technological capabilities to explore why the Mozambican Government supported the cashew processing industry and how Mozambican cashew processors acquired the technological capabilities needed to access the global cashew value chain and to upgrade. It makes an important theoretical contribution by linking the political settlements framework and the literature on upgrading in global value chains to study how politics shaped productive sector promotion and upgrading in the Mozambican cashew processing industry. The findings of the thesis are based on extensive primary data, including 58 expert interviews and 10 firm surveys, that was collected in Mozambique in 2018 as well as a broad base of secondary literature.

The thesis argues that the Mozambican Government supported the cashew processing industry because it became important for the Government's political survival. Promoting the cashew sector formed part of an electoral strategy for the ruling FRELIMO coalition and a means to keep FRELIMO factions united by offering economic opportunities to key constituencies. In 1999, it adopted a protectionist cashew law that created strong incentives for cashew processing in Mozambique. This not only facilitated the re-emergence of the cashew processing industry after its breakdown. The law and the active involvement of the National Cashew Institute (INCAJU) also affected the governance of the local cashew value chain, the creation of backward linkages, and the upgrading paths of cashew processors. The findings of the thesis suggest that the cashew law reduced the pressure on the cashew processing industry to

upgrade. The law further created opportunities for formal and informal rent creation for members of the political elite and lower level FRELIMO officials that prevented a far-reaching reform of the law. The thesis shows that international buyers do not promote upgrading among Sub-Sahara African firms in global value chains with market-based or modular governance. Moreover, firms that operate in countries where industrial policies are not enforced effectively cannot draw on the support of government institutions to enhance their capabilities and to upgrade. Firms therefore mainly depended on costly learning channels at firm level, e.g. learning by doing or hiring skilled labour, and/or on technical assistance from donors to build the technological capabilities needed to access global value chains and to remain competitive.

The findings of the thesis suggest that researchers, governments, development practitioners and consultants need to rethink their understanding of upgrading in GVCs in four ways. First, they need to move away from understanding upgrading in terms of moving towards more complex, higher value-added activities in GVCs (functional upgrading). Instead, it is important to consider the potential of other, more realistic types of upgrading for firms in low-income countries, such reducing risks by diversifying suppliers and buyers or increasing rewards by making production processes more efficient. Second, they need to replace an overly positive view on upgrading that neglects possible side-effects at sector and/or country level. Third, GVC participation on its own does not promote upgrading among local supplier firms in Sub-Saharan Africa. The interests of lead firms and Sub-Sahara African supplier firms may not be aligned or even conflicting. Targeted industrial policies and the creation of institutions that effectively promote capability building among firms therefore become even more important. Finally, upgrading needs to be understood as a process that is not only shaped by interactions between firms, but also by local domestic politics.

The findings of the thesis are highly relevant for scholars from the fields of political science, development studies, and economics. Its practical implications and tools, e.g. a technological capabilities matrix for the cashew industry, are of interest for development practitioners, members of public institutions in Sub-Sahara African countries, local entrepreneurs, and representatives of local business associations that are involved in promoting export sectors and upgrading among local firms.

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List of Acronyms

ACIANA:	Commercial, Industrial and Agricultural Association of Nampula
AFRICAP:	African-owned firms building capabilities in global value chains
AICAJU:	Association of the Cashew Industry
BRC:	British Retail Consortium
CNSL:	Cashew nut shell liquid
CSR:	Corporate social responsibility
CTA:	Confederation of Business Associations of Mozambique
EU:	European Union
FDI:	Foreign direct investment
FOB:	Free on Board
FRELIMO:	Mozambique Liberation Front
GAPI:	Bureau for the Promotion of Small Industry
GCC:	Global Commodity Chain
GIZ:	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPN:	Global production networks
GVC:	Global value chain
HACCP:	Hazard Analysis and Critical Control Points
HIPC:	Heavily Indebted Poor Countries
IESE:	Institute of Social and Economic Studies
IFIs:	International Financial Institutions
IMF:	International Monetary Fund
INCAJU:	National Cashew Institute
ISO:	International Organization for Standardization
KOR:	Kernel outturn ratio

MASA:	Ministry of Agriculture
MIC:	Ministry of Industry and Trade
MNCs:	Multinational corporations
NGO:	Non-governmental organisation
PoE:	Pocket of Efficiency
PRE:	Economic Rehabilitation Programme
PS:	Political settlement
RCN:	Raw cashew nuts
R&D:	Research and development
RENAMO:	Mozambican National Resistance
SINTIC:	National Cashew Workers Union
SNV:	Netherlands Development Organisation
TCs:	Technological capabilities
TEEN:	Nacala Special Export Terminal
UNECA:	United Nations Commission for Africa
UNIDO:	United Nations Industrial Development Organization
U.S.:	United States
USAID:	United States Agency for International Development
VC:	Value chain
WTO:	World Trade Organisation

1 Introduction: Accessing Global Value Chains

'Mozambique ready for come-back as a leading player in global cashew nuts market'.[1]

Heartened by recent increases in cashew production and processing, the Mozambican Government has heralded the comeback of the golden cashew era in Mozambique. The country used to be one of the world's largest producers and processors of cashew nuts in the 1960s and 1970s. At the end of the 20th century, the cashew processing industry broke down completely, leaving thousands of factory workers jobless. Starting in 2002, the industry was gradually revived. However, state-of-the-art cashew processing in the 1950s, when the cashew industry was set up under the rule of the Portuguese colonisers, differed substantially from processing at the beginning of the 21st century when the industry was revived. To re-access the global cashew value chain and to remain globally competitive, Mozambican cashew processors had to acquire substantial industry-specific knowledge and technological capabilities (TCs).[2]

Today, processed cashews are one of Mozambique's few successful agro-processing exports. The cashew industry is backed by protectionist industrial policies and active state involvement. In fact, the revival of the cashew processing industry would not have been possible without continued political support. This thesis traces the evolution of the Mozambican cashew processing industry from the 1950s until 2019 with the aim to explore how politics shaped the promotion of the industry and upgrading among cashew processors.

1.1 Background of the Thesis

Building successful export sectors in manufacturing and agribusiness is a critical driver of structural transformation in Sub-Saharan Africa (UNECA 2016, 31).[3] These sectors can increase the share of value added within a country and the resilience against external shocks by reducing the dependency on raw commodity exports. They can be a source of foreign exchange and may

[1] Title of an article on the Mozambican Government's ambitious plans to make Mozambique one of the world's largest producers of cashew nuts again published by the online news site Club of Mozambique (2018a).

[2] Technological capabilities refer to *'the skills—technical, managerial or organizational—that firms need in order to utilize efficiently the hardware (equipment) and software (information) of technology, and to accomplish any process of technological change'* (Morrison, Pietrobelli, and Rabellotti 2008, 41).

[3] Structural transformation involves decreasing the dependence on primary commodity exports and moving towards more complex, higher value-added economic activities in the areas of agribusiness, manufacturing and knowledge-based services by increasing technological capabilities at firm level (Whitfield et al. 2015, 5).

create backward and forward linkages throughout the economy (Monjane 2019, 5–6). Flourishing export sectors may increase the managerial and production-related experience, create a trained labour force, and improve a country's industry and trade infrastructure. By creating wage employment for the local population they can also contribute to reducing poverty (Balchin et al. 2016, 1; Newman et al. 2016, 28; Staritz and Whitfield 2017, 5).

But what does it take for successful export sectors in manufacturing and agribusiness to emerge in Sub-Sahara African countries? The literature suggests that on the one hand, it requires locally-owned firms[4] – next to foreign firms – that have the TCs needed to access global value chains (GVCs)[5], e.g. related to making investments, managing the production process, or ensuring product quality. In addition, firms need to be able to remain globally competitive over time, i.e. to upgrade (Newman et al. 2016, 109). Upgrading refers to the ability of firms *'to make better products, make them more efficiently, or move into more skilled activities'* (Humphrey and Schmitz 2002, 1017). It requires firms to continuously invest in their TCs, e.g. to increase product quality, comply with international food safety standards, improve working conditions in factories, increase efficiency, or to take over new functions in a GVC. Upgrading relates to how firms change their operations to maintain or improve their position in GVCs.

Growth in number, size and capabilities of locally-owned firms is a core facet of structural transformation in low-income countries. Attracting foreign firms may be a source of capital, employment and knowledge and can push governments to reduce entry barriers, e.g. related to infrastructure. However, knowledge spillovers from foreign to local firms only emerge if local firms exist that can absorb industry-specific knowledge. Foreign firms may leave a country if external conditions, e.g. preferential trade agreements, or country-specific incentives, e.g. low costs of labour, change. Local firms cannot simply pack up and leave but are forced to build their technological capabilities to remain competitive or to move into new productive sectors (Staritz and Whitfield 2017, 3; 2019, 396).

[4] Local firms include firms whose owner is an official citizen of a country and firms whose owners have operated in that country for a considerable amount of time and consider it their home – even if they do not hold a passport of the country (Staritz and Whitfield 2017, 3).

[5] Global value chains refer to *'the full range of activities that firms, farmers and workers carry out to bring a product or service from its conception to its end use, recycling or reuse. These activities include design, production, processing, assembly, distribution, maintenance and repair, disposal/recycling, marketing, finance and consumer services. In a 'global' value chain, these functions are distributed among many firms scattered around the world.'* (Ponte, Gereffi, and Raj-Reichert 2019, 1).

On the other hand, the emergence of productive export sectors in Sub-Saharan Africa requires state support. Development scholars, policy makers and representatives of international institutions such as the World Bank or the United Nations Economic Commission for Africa (UNECA) acknowledge the role of the state in driving structural transformation through industrial policies – although there is no consensus on the scope and type of policies that governments should pursue (e.g. Altenburg and Lütkenhorst 2015; Chang 2015; Lin 2012; Stiglitz et al. 2013; UNECA 2016). Industrial policies may incentivise investments in economic activities that are new to a country or new to firms, e.g. processing agricultural produce such as cashew nuts. They may also diminish the risks, costs and financial losses that occur while firms build the capabilities that are required to become globally competitive (Lall 1993, 721; Whitfield et al. 2015, 5). However, recent research (Alford and Phillips 2018; Behuria 2018; Horner 2017) suggests that the role of states in promoting specific export sectors goes beyond adopting and implementing industrial policies. States may actively intervene in sectors through government institutions or may become involved in local value chains as producers through state-owned enterprises or as buyers through public procurement.

Although manufacturing production in Sub-Saharan Africa, including agro-processing, has more than doubled from US$73 billion in 2005 to US$157 billion in 2014, not many successful productive export sectors have emerged (Balchin et al. 2016, iv). Economic growth has mainly been driven by high commodity prices, increased domestic demand and – to some extent – improvements in economic management and governance. The contribution to economic growth from industrialisation is relatively small (UNECA 2014, xii). Overall, the technological capabilities, productivity levels and export participation rate of local firms are low while dependence on raw commodity exports remains high (Newman et al. 2016, 6).

A range of factors makes 'late-late industrialisation' for Sub-Sahara African countries extremely challenging. GVCs may spur economic development and learning among firms with limited initial resources. However, the dispersion of production processes across the globe has also increased competition and decreased prices for manufactured goods. The rapid pace of technological innovation makes it difficult for firms to catch up fast enough. The continent faces the double challenge of simultaneously consolidating basic education and building advanced, specialist skills required to access GVCs and to upgrade (Whittaker et al. 2010, 456).

Meeting the minimum requirements of GVCs, e.g. related to food safety, labour, or environmental standards, can be a big hurdle for firms in countries with little manufacturing experience. Firms need to build TCs from scratch and often rely on expensive technology imports and foreign skills and knowledge from consultants or experienced foreign workers. In addition, firms in Sub-Saharan Africa are facing higher production costs due to infrastructure constraints, e.g. related to high transportation costs and/or unreliable electricity supply, a lack of inputs and skilled labour, low levels of labour productivity, limited access to and high costs of finance, and weak institutions. These constraints may hamper firms to gain access to even low-cost segments of GVCs and may outweigh the advantage of low wages in labour-intensive industries (Humphrey 2005, 1; Staritz and Whitfield 2017, 3; 2019, 396).

Despite these challenges, some successful productive export sectors have emerged in Sub-Sahara African countries. Prominent examples are the apparel sectors in Ethiopia and Madagascar, the horticulture sector in Kenya, or the flower industry in Ethiopia (Gebreeyesus and Sonobe 2012; Melese 2019; Tyce 2020; Whitfield and Staritz 2017). All these sectors were backed by industrial policies and active state involvement. This raises the question: How do politics shape the promotion of export-driven industrialisation and firm-level upgrading in Sub-Saharan Africa? This thesis aims to find answers to this question by exploring an exceptional case[6] that has received little scientific attention: the Mozambican cashew processing industry.

Mozambique and the Cashew Sector

Despite high growth and foreign direct investment (FDI) rates (The World Bank 2020a) Mozambique is not a success story from a structural transformation perspective (Bertelsmann Stiftung 2020, 18).[7] The size and level of TCs of local manufacturing firms are limited, making it hard for them to access GVCs. As a result, the export participation rate of Mozambican firms is low (Cruz et al. 2017, 93–94). What is more, the influx of FDI is mainly directed to megaprojects in the extractive sectors and the metal industry, i.e. the aluminium smelter MOZAL. Foreign direct investments meet a country that is characterised by a large informal sector that contributes 65% to the GNP, small-scale agriculture, and a missing middle of small and medium-

[6] It is sufficient to mention here that the criteria for case selection are discussed in more detail in Chapter 4.

[7] Between 2003 and 2015 annual growth rates in Mozambique ranked between 6% and 10%. Since 2016, growth rates hoover between 2% and 4% (The World Bank 2020b).

sized enterprises (Bertelsmann Stiftung 2020, 20; Buur 2014, 18). These mega-investments are enclaves with limited forward and backward linkages to the local economy or formal employment creation (Langa and Mandlate 2015, 63–65; Monjane 2019, 202–3).

Excluding exports related to the natural resource sector and the metal industry, Mozambique's major exports stem from the agricultural sector (Sutton 2014, 2; United Nations 2019, 241). The sector employs approximately 75% of the total Mozambican workforce (CIA 2020). Agricultural production in Mozambique is to a large extent based on subsistence farming. Large shares of agricultural exports are raw commodity exports, i.e. low-value exports. Backed by sector-targeted industrial policies, the cashew sector is among the country's few successful agro-processing sectors for export.

Under Portuguese rule, Mozambique was one of the world's major cashew producers and processors with a production of circa 200.000 tons of raw cashew nuts (RCN) in 1973. It was the first Sub-Sahara African country to set up a large-scale cashew processing industry. The processing of RCN peaked in 1973 with 149.800 tons of RCN processed. After the country's independence in 1975, the cashew processing sector was nationalised. Between 1991 and 1999 it underwent a period of privatisation and liberalisation. Over a 16 year long brutal civil war (1977-1992), cashew production and processing started to decline and dropped to only 8.000 tons of RCN processed in the harvesting season of 1999/2000. By that time, all processing facilities had stopped operating (Aksoy & Yagci, 2012, pp. 4–5; McMillan et al., 2002, p. 4). The breakdown of the cashew industry led to the loss of thousands of jobs and sparked a controversial and highly politicised debate about the World Bank's structural adjustment programme and conditionality policy in Mozambique and beyond (Pitcher, 2002, pp. 225–233).

In 1999, the Mozambican Government adopted a cashew law that created incentives for in-country processing of RCN, among others an 18% tax on RCN exports. With the support of the U.S. organisation TechnoServe the sector was revived in the early 2000s. In 2018, 12 domestic and foreign cashew processing firms operated 19 factories that together employ up to 17.000 workers (Costa 2019, 40). Mozambique has the highest ratio of cashew processing in Sub-Saharan Africa (Rabany, Rullier, and Ricau 2015, 32–33). The cashew sector provides an income to more than a million households and collecting and selling cashew nuts is considered *'part of the nation's rural welfare system'* (Aksoy and Yagci 2012, 16). In 2018, raw and processed cashew exports together were the sixth most important agricultural export after tobacco,

sugar, bananas, prawns and wood (Instituto Nacional de Estatística 2018, 1). The global demand for cashew kernels has increased by 53% since 2010 (Ravi 2017) making cashew a promising sector to invest in and a relevant case to study.

This thesis conducts an in-depth qualitative study of the Mozambican cashew sector, notably the cashew processing industry. It traces the evolution of the sector from the 1950s until 2019 with a particular focus on the period from 1991 to 2019.[8] During this period, the cashew sector was privatised and liberalised, the processing industry broke down and was successfully revived. This thesis does not aim to make analytical generalisations. However, the findings from single case studies can form the basis of analytical generalisations by transferring case-specific results to a higher conceptual level and thereby contribute to theory building (Yin 2014, 40–44). The findings of the thesis are based on extensive secondary literature and primary data that was collected in Mozambique from February to April 2018. The primary data includes 58 expert interviews and 10 surveys with local and foreign cashew processing firms.

The thesis situates itself in the discipline of political science, more precisely in the field of political economy. Political economy is a field at the intersection of political science and economics that centres on how politics affects economic outcomes. It is based on the assumption that economic outcomes cannot be abstracted from political and institutional factors. In other words, there are reciprocal relationships between political and economic systems (Drazen 2002, 3–4).

This study explores the emergence and evolution of export sectors and upgrading at firm level from a political science perspective. It makes an important theoretical contribution by brining (domestic) politics into the study of GVCs and upgrading. To this end, it draws on theoretical approaches from the field of political science, particularly the political settlements (PS) approach, and on heterodox economic theories, particularly GVC analysis. The PS approach centres on an analysis of the distribution of power within society. It further explores how the distribution of power within society affects whether and how political elites promote

[8] The research period of the thesis ends in 2019. It therefore does not take current developments in Mozambique, such as the ongoing Islamist insurgency in Cabo Delgado province in the North of Mozambique and the Covid-19 pandemic, and their effects on the Mozambican cashew sector and the country's overall economic and political situation into account. The Islamist insurgency has displaced thousands of villagers. This has curbed cashew production in Cabo Delgado. Due to the Covid-19 pandemic and too low levels of cashew production in Mozambique, many cashew processing factories have stopped operating in 2020 and global cashew prices have decreased significantly.

productive sectors, e.g. through industrial policies, as well as the capacity of states to enforce the implementation of these policies (Whitfield et al. 2015, 30, 90-96). GVC analysis originally emerged from the industry case studies of Dependency Theory scholars conducted in the 1980s (Ponte, Gereffi, and Raj-Reichert 2019, 4). GVC analysis focuses on identifying the main activities and actors of GVCs, their geographic scope, governance and upgrading opportunities, and their institutional contexts (Gereffi and Fernandez-Stark 2016, 5–11).

The first section of the introduction situated the thesis in the broader debate on structural transformation and the politics of productive sector promotion and upgrading in Sub-Saharan Africa. The remainder of the introduction presents the overall research question of the thesis as well as its working questions, summarises its core arguments and contributions, and gives a tour d'horizon of the structure of the thesis and its main findings.

1.2 Central Research Questions

This thesis asks the overall research question: **How do politics shape the promotion of export-driven industrialisation and firm-level upgrading in Sub-Saharan Africa?** It exemplifies this question with an in-depth study of the cashew processing industry in Mozambique. The study is structured along five working questions that are answered in the core analytical chapters (Chapter 6 to Chapter 9) and the Conclusion of the thesis.

1. *Which TCs do cashew producers and processors require to access the cashew GVC and to remain competitive and which opportunities for upgrading does the cashew GVC offer?*

Before studying how domestic politics affect upgrading in the cashew GVC it is important to explore how upgrading plays out in the global cashew value chain. This involves teasing out which capabilities cashew producers and processors in Mozambique require to access the cashew GVC and to upgrade. It further requires analysing which opportunities for upgrading the cashew GVC offers. These questions are studied in Chapter 6 of the thesis.

2. *Why did the Mozambican Government support the cashew sector at the end of the 1990s and which actors in the local cashew value chain benefitted from state support?*

Many agricultural export sectors in Sub-Saharan Africa emerged during the colonial era and declined after independence. Some of these sectors, including the Mozambican cashew sector, were rehabilitated. At the same time, new sectors were set up from scratch. Prominent examples are the horticulture sectors in Kenya and Ethiopia and the apparel sector in Ethiopia. These sectors (re-)emerged because they were actively promoted by governments. Studying the promotion of export-driven industrialisation is closely linked to the questions why governments support specific export sectors, e.g. through industrial policies, and which actors benefit from state support. These questions are addressed in Chapter 7 of the thesis.

3. *How did the technological capabilities of Mozambican cashew processors evolve since the revival of the industry in 2002 and which economic and social effects did this have?*

Exploring the politics of upgrading in the Mozambican cashew industry requires tracing the industry's upgrading trajectory. This is closely linked to studying how the technological capabilities of cashew processors evolved since the revival of the industry in 2002. Tracing the upgrading trajectory of the Mozambican cashew industry is important to assess the industry's current level of capabilities as well as the economic and social effects of upgrading at firm, sector and country level. This working question is studied in Chapter 8 of the thesis.

4. *Which learning channels did Mozambican cashew processors use to acquire the technological capabilities needed to access the cashew GVC and to upgrade?*

In order to study how politics affected upgrading in the Mozambican cashew processing industry, it is crucial to explore how cashew processors upgrade, i.e. which learning channels they use(d) to acquire the TCs needed to access the cashew GVC and to upgrade. Studying this question also involves looking at why potential learning channels, e.g. industrial policies and knowledge transfers between international buyers and Mozambican processors, did not play a role. It further requires studying why the learning efforts among cashew processors vary. An answer to these questions is provided in Chapter 9 of the thesis.

5. *How did the Mozambican Government shape the governance of the local cashew value chain and the upgrading paths of Mozambican cashew processors?*

The answer to the final working question links the findings of the four previous working questions in order to explain how the politics pursued by the Mozambican Government affected a) the re-emergence of the Mozambican cashew processing industry; b) the governance structure of the domestic cashew value chain; and c) the upgrading path of the cashew processing industry. These questions are discussed in the Conclusion of the thesis.

1.3 The Argument

This thesis argues that the Mozambican Government adopted protectionist industrial policies to support the cashew sector at the end of the 1990s because it became important for the Government's political survival. Promoting the cashew sector formed part of an electoral strategy for the ruling coalition of the Mozambique Liberation Front (FRELIMO) in the run-up to the 1999 elections. In addition, it was a way to reduce contestation within FRELIMO by offering economic opportunities to key constituencies. The envisaged full liberalisation of the cashew sector – in exchange for financial support from international financial institutions – had led to an ideological clash between factions within FRELIMO that sought to maintain state protection of productive industries and factions that pushed for liberalisation.

The short-term outcomes of the reform suggest that the Mozambican Government catered to the interests of those actors in the local cashew value chain with the most holding power[9], i.e. exporters of RCN. The declining cashew industry did not receive enough political support to survive in business, leaving entrepreneurs in debts and thousands of factory workers without jobs. Due to the breakdown of the cashew processing industry, RCN exporters were able to export virtually all cashews produced in Mozambique to India until cashew processing took up again. However, the strong incentives for cashew processing in Mozambique that the new cashew law established, notably an 18% tax on RCN exports, created benefits for firms that

[9] Holding power refers to the ability of individuals or groups to engage and survive in conflicts over resources and opportunities, e.g. a contested policy reform, with the aim to maintain or secure a desired result Khan (2010, 6). The ability to survive in conflict is shaped by the capacity of actors to absorb costs and impose costs on others based on their economic strength and organisational capacity. The concept of holding power is explained in more detail in Chapter 3.

invested in cashew processing when the sector was revived at the beginning of the 2000s. Hence, the law increased the holding power of cashew processors in the mid-term.

The findings of this thesis confirm the argument made by political settlements scholars (e.g. Khan 2010; Whitfield et al. 2015) that the distribution of power within societies affects whether and how political elites promote productive sectors. However, it expands the political settlements approach by showing that the influence of governments on economic sectors goes beyond promoting the emergence of specific sectors, e.g. through industrial policies. The study of the Mozambican cashew sector illustrates that Governments affect the governance of local value chains as well as the upgrading paths of local value chain actors. Industrial policies may establish benefits for some actors in the value chain at the cost of others and can allocate active roles in local value chains to states, e.g. as producers, suppliers, or buyers. This may affect the distribution of power within local value chains, the creation of forward and backward linkages, and the learning efforts or pressure to build capabilities of local value chain actors. In addition, industrial policies and the institutions they create as well as the active involvement of states in local GVCs may promote capability building among local firms. Finally, the promotion of productive sectors may create opportunities for formal and informal rent creation for members of the ruling elite or their lower level allies that may impede reforms of productive sectors that would be required to promote technological capability building among local firms.

The involvement of the Mozambican Government in the local cashew value chain as a supplier of agricultural inputs (seedlings and chemicals) impeded the creation of backward linkages. The massive government footprint thwarted the emergence of private suppliers of chemicals and seedlings in Mozambique and reduced farmers' willingness to pay for agricultural inputs. The 18% tax on RCN exports negatively impacts producer prices in Mozambique because cashew exporters exert downward pressure on prices for RCN to compensate for the additional costs created by the export tax. The possibility to purchase RCN below international market prices compensates for existing inefficiencies in the Mozambican cashew sector, e.g. low quality of RCN, low labour productivity, infrastructure constraints and corruption. This reduces the pressure on cashew processors in Mozambique to build technological capabilities in order to be able to compete globally without state protection.

The example of the Mozambican cashew sector also shows how opportunities for formal and informal rent creation for members of the ruling elite indirectly affect upgrading at industry

level. Opportunities for rent creation in the Mozambican cashew sector emerged once the cashew law had been adopted and the sector re-emerged as a dynamic sector. To maintain access to these rents, the Mozambican Government blocked a far-reaching reform of the sector in 2018 that would have been necessary to enforce learning rents. Instead, the Mozambican Government opted for a 'mini' reform of the cashew law that did not jeopardise the ruling elite's ability to skim off formal and informal rents.

With regards to how firms acquire technological capabilities, the findings of this thesis suggest that the learning channels of agro-processors in Mozambique (and beyond) that participate in GVCs may be limited. International lead firms and industrial policies are not a source of learning for supplier firms in agricultural GVCs with market-based or modular governance[10], and that operate in countries where industrial policies are not enforced effectively. Direct and indirect knowledge spillovers from FDI only occur if foreign-owned firms exist – which may not be the case when sectors emerge or are revived – and if these firms are more technologically advanced than locally-owned firms. This was not the case in the Mozambican cashew sector.

In the absence of these learning channels, some firms may draw on the support of international organisations or donors. This type of technical assistance can be effective but is often limited to relatively short time periods. Hence, first and foremost, firms in agricultural GVCs with marked-based or modular governance depend on learning channels at firm-level. In the Mozambican cashew industry, firm-level learning channels included learning by doing, hiring skilled labour, and visiting other cashew processing countries.

Financing technological capability building is costly and access to finance at reasonable interest rates is often not available in Sub-Sahara African countries such as Mozambique. The findings of the thesis therefore suggest that a common way for Sub-Sahara African agro-processors to finance investments in learning are diversified companies with counter-cyclical businesses. Profits made in one business line can then be used to subsidise investments in technological capability building in another business line. However, this may bear the risk that diversified companies reap the benefits of policy-induced subsidies in various sectors without equally investing in capability building in all (or any) of the sectors they operate in.

[10] Different types of GVC governance are discussed in Chapter 3.

Overall, Mozambique has successfully revived its cashew processing industry. The cashew industrial policy framework established incentives for cashew processing that spur(red) local and foreign investments and donor support. The TCs of Mozambican cashew processors have increased in the past 15 years since the industry's revival. Firms enhanced their investment, production and linkage capabilities in order to remain competitive by adapting the technology used for processing, installing food safety management systems, diversifying their buyers, end markets and suppliers, and increasing linkages with other actors in the sector. As a by-product of these efforts, processors improved the working conditions and raised the share of female workers in the factories. This translated into end market, supply chain, product, process, and social upgrading. The cashew processing sector produces positive externalities that are conducive to driving structural transformation in Mozambique. Among others, it is a source of formal employment for approximately 10.000 low-skilled workers in rural areas, contributes to building an industrial workforce, and provides an income for cashew producers.

However, profits and upgrading opportunities in the local cashew value chain are not spread evenly among value chain actors. Many big challenges of the industry have not been tackled, among others low levels of RCN production and quality, low labour productivity, infrastructure constraints, as well as corruption and rent-seeking. The cashew law and the institutions it creates not only fail to support capability building among cashew processors in Mozambique. In fact, they reduce the pressure on cashew processors to invest in building technological capabilities. This thesis therefore concludes that, at this point in time, the industry is only able to compete globally because it is heavily protected.

1.4 Contribution and Relevance of the Thesis

This thesis seeks to make an empirical, a theoretical, and a methodological contribution to the political science literature, more particularly the political settlements framework (Behuria, Buur, and Gray 2017; Khan 2010; 2017; Whitfield et al. 2015; Whitfield and Therkildsen 2011), and to the literature on upgrading in agricultural GVCs in Sub-Saharan Africa (e.g. Fold and Larsen 2011; Gibbon 2001a; 2001b; 2004; Humphrey and Memedovic 2006; Lee, Gereffi, and Beauvais 2012).[11]

[11] These literatures also include several case studies that are discussed in more detail in the literature review.

Empirical Contribution

The question how firms in Sub-Saharan Africa acquire the TCs to access GVCs and to upgrade has not been fully answered by the literature on upgrading in GVCs. Furthermore, this strand of literature has neglected Mozambique and the cashew sector. Some agricultural export sectors in Mozambique have been studied from a political settlements perspective (Buur, Balói, and Tembe 2012; Buur, Mondlane, and Baloi 2011; Buur, Mondlane Tembe, and Baloi 2012; Buur and Whitfield 2011). However, research that explores how politics shape upgrading in these sectors is so far missing. Despite the high potential for cashew processing in Sub-Saharan Africa – and numerous donor programmes to support upgrading in the cashew sectors in East and West Africa – few scientific publications on the Sub-Sahara African cashew sector are available (Bassett, Koné, and Pavlovic 2018; Tessmann 2018; Tessmann and Fuchs 2016).

Research on the learning channels of Sub-Sahara African firms in agricultural GVCs is still in its infancy (Marchi, Giuliani, and Rabellotti 2018; Melese 2019; Staritz and Whitfield 2019). Patterns of learning at firm level remain unclear and a better understanding of which learning mechanisms[12] work in which contexts and why and how politics shape learning at firm level is needed. This thesis aims to contribute to closing this empirical gap by proposing approaches to studying a) learning mechanisms at firm level, and b) how politics shape firm-level learning. It applies these approaches to an exciting case and country that have so far received little scientific attention.

Theoretical Contribution

The questions, how productive export sectors emerge in Sub-Sahara African countries and how local firms acquire the technological capabilities needed to access GVCs and to upgrade have so far been studied separately. The literature on the political economy of productive sector promotion has focused on explaining why and how governments – or the ruling elites on top of governments – support specific sectors and specific actors within sectors.[13] However, it has so far not provided answers to how the politics pursued by governments shape the governance of local value chains and the upgrading paths of domestic value chain actors. The literature on

[12] The terms learning channels and learning mechanisms are used interchangeably in this thesis.

[13] A list of studies that use the political settlements framework to study the promotion of productive sectors in Sub-Saharan Africa is provided in section 1 of the literature review (Chapter 2).

upgrading in agricultural GVCs provides insights on how the governance of agricultural GVCs affects the upgrading opportunities of firms (Gereffi, Humphrey, and Sturgeon 2005; Lee, Gereffi, and Beauvais 2012; Pietrobelli and Rabellotti 2011). However, it sheds no light on how export sectors in Sub-Saharan Africa emerge in the first place. Furthermore, it does not sufficiently consider the local political economy contexts within which GVCs are embedded.

The thesis takes up the recent calls by Vicol et al. (2018) and Behuria (2018) to bring politics into the study of upgrading in GVCs. This involves broadening the analytical focus of GVC analysis to include domestic political settlements and state-business relations, next to the study of firms. The thesis establishes a link between the political settlements framework and the literature on upgrading in GVCs. Using the example of the Mozambican cashew sector, it explores how politics affects the promotion of productive sectors and how the involvement of governments in local value chains shape the governance of local value chains and the upgrading paths of local value chain actors.

The thesis further seeks to refine the general theoretical arguments of the political settlements framework by developing a framework for studying productive sector support and applying it to the example of the Mozambican cashew sector.

Methodological Contribution

This thesis seeks to make a methodological contribution to the literature on upgrading in GVCs by proposing an operationalisation of firm-level upgrading in GVCs that incorporates the process of technological capability building. So far, the operationalisation of technological capability building and firm-level upgrading in GVCs remains vague. Upgrading in the GVC literature refers to processes as well as to (positive and negative) outcomes at various levels, including the firm, sector and country levels. The GVC literature differentiates between various upgrading types (Humphrey and Schmitz 2002; Ponte and Ewert 2009) but does not link upgrading to the process of building technological capabilities.[14]

The operationalisation of upgrading proposed in this thesis is inspired by the research by Whitfield and Staritz (2017; 2019) that establishes a link between the literatures on upgrading

[14] The conceptualisation of technological capabilities and upgrading paths at firm level developed by Staritz and Whitfield (2019; 2017) makes an important contribution, however it does not further break down the concept of technological capability building.

in GVCs and technological capabilities. The thesis breaks down the concepts of capability building and upgrading into several traceable, interlinked components: 1) drivers of technological capability change; 2) technological capability change at firm level; 3) learning channels that firms use to build their TCs; 4) the sets of TCs that firms enhance by building capabilities; 5) the type(s) of upgrading this corresponds to; and 6) the economic and social effects of upgrading at firm, sector, and country level. The thesis applies this operationalisation to trace the upgrading paths of the Mozambican cashew processing industry.

Relevance of the Thesis

This thesis if of high relevance for scholars of two very recent strands of research that are attracting increasing attention by researchers in the areas of political science, development studies, and economics: First, the literature on the politics of upgrading in GVCs (Alford and Phillips 2018; Behuria 2018; Horner 2017; Mayer and Phillips 2017; Swinnen 2015) that is currently promoted by researchers at the University of Manchester. Second, research on learning channels that Sub-Sahara African firms use to access GVCs and to upgrade (Gebreeyesus and Sonobe 2012; Marchi, Giuliani, and Rabellotti 2018; Melese 2019; Staritz and Whitfield 2017; Whitfield 2012), spearheaded by the AFRICAP project at Roskilde University.[15]

Furthermore, the thesis is of interest for development practitioners, members of state institutions in low-income countries, local entrepreneurs, and representatives of business associations that are involved in promoting export sectors and upgrading among local firms. The study sheds light on the interplay between political and economic preconditions for the emergence of export sectors and for upgrading in agricultural GVCs in Mozambique and beyond. A precise understanding of a) why governments in Sub-Saharan Africa support specific (actors in) productive sectors; b) how local politics affect the governance of local value chains and the upgrading paths of local firms; c) how local firms acquire the capabilities to access agricultural GVCs and to upgrade; and d) which economic and social effects upgrading has is crucial for the formulation of effective industrial policies and donor programmes.

[15] AFRICAP refers to African-owned firms building capabilities in global value chains. The research project was implemented from 2016 to 2019. The approach and contributions of the project are discussed in more detail in the literature review (Chapter 2).

This study provides a basis for designing policy instruments and donor programmes that promote capability building among producers and processors in the Mozambican cashew value chain and beyond that are embedded in the country- and sector-specific political economy context. By developing a firm survey for studying the technological capabilities of cashew processors as well as a technological capability matrix for the cashew industry in Sub-Saharan Africa this thesis further develops practical tools which are of interest for public agencies, cashew value chain actors as well as development practitioners.

1.5 Structure and Main Findings

The thesis consists of 10 chapters. Following this introduction, Chapters 2, 3 and 4 present the research gaps that this thesis seeks to address, its theoretical framework and its methodology. Chapter 5 provides background information on the Mozambican cashew sector. The analytical core of the thesis consists of Chapters 6 to 9. Chapter 10 summarises the main research findings and discusses important theoretical and practical implications of the thesis. The remainder of this section briefly outlines the chapters of the thesis and their core findings.

Chapter 2 reviews the literature from the fields of political science and GVC analysis related to the political economy of productive sector promotion in low-income countries and upgrading in GVCs. The literature review also includes recent studies that explore how domestic politics affects upgrading in local value chains and how Sub-Sahara African firms acquire capabilities. The chapter points out several research gaps and explains how this thesis addresses these gaps.

Chapter 3 presents the theoretical framework of the thesis. The framework consists of three intertwined sections. The first section conceptualises and operationalises firm-level upgrading in (agricultural) GVCs. It builds on the literature on upgrading in (agricultural) GVCs[16] and the technological capabilities literature (e.g. Lall 1992; 1993; Morrison, Pietrobelli, and Rabellotti 2008; Staritz and Whitfield 2017). Chapter 6 draws on the theoretical underpinnings presented in this section to analyse the governance and upgrading opportunities of the cashew GVC. The operationalisation of firm-level upgrading in GVCs developed in this section is applied in

[16] E.g. Gibbon, Bair, and Ponte (2008), Humphrey and Schmitz (2002; 2001), Pietrobelli and Saliola (2008); Pietrobelli (2008); Humphrey (2004); Barrientos, Gereffi, and Rossi (2010), Gibbon (2001a; 2001b; 2004), Lee, Gereffi, and Beauvais (2012); Humphrey and Memedovic (2006); Fold and Larsen (2011); Gereffi, Humphrey, and Sturgeon (2005).

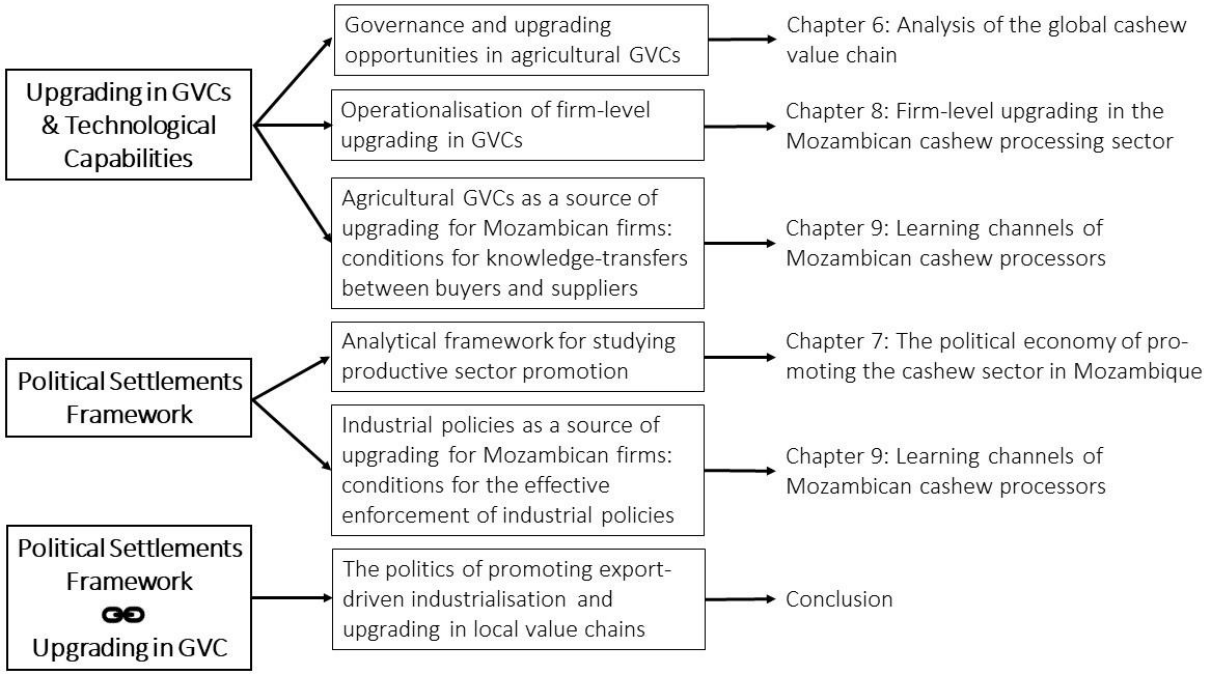
Chapter 8 of the thesis to trace the upgrading trajectory of the Mozambican cashew processing industry. Chapter 9 discusses why international cashew kernels buyers are not a source of learning for cashew processors in Mozambique.

Drawing on the political settlements (PS) approach[17], the second section of the theoretical framework develops an analytical framework for studying the politics of productive sector promotion in Mozambique. This framework is used to explore why the Mozambican Government supported the cashew sector and why it adopted a specific set of industrial policies. This analytical approach is applied in Chapter 7 of the thesis. The section further discusses three conditions for the effective enforcement of industrial policies that are used to assess whether the Mozambican cashew law has been effective in terms of promoting capability building among local cashew producers and processors in Chapter 9.

The third section of the theoretical framework links the PS approach and the literature on upgrading in GVCs by teasing out three ways in which governments shape the governance of local value chains as well as the upgrading paths of local value chain actors. This informs the discussion on the politics of upgrading and learning in the cashew value chain in Mozambique in the Conclusion of the thesis. Figure 1.1 depicts how the components of the theoretical framework are applied in the thesis.

[17] E.g. Whitfield et al. (2015); Khan (2010); Di John and Putzel (2009); Gray and Whitfield (2014); Behuria, Buur, and Gray (2017); Khan (2017).

Figure 1.1. Components of the Theoretical Framework



Source: the author

Chapter 4 presents the methodology used to carry out research on the Mozambican cashew sector. It first discusses the design of the case study of the Mozambican cashew sector and the case selection criteria. The chapter then lays out the methodological approaches that were used to study PS at sector level, TCs at firm level, and the learning channels that firms use to acquire TCs. Finally, the chapter presents the research data and discusses some methodological limitations of the thesis.

Chapter 5 provides a profile of the Mozambican cashew sector. It first traces how the Mozambican cashew sector and its industrial policy framework evolved from the colonial era until 2019. It presents a nuanced explanation for why the sector broke down in the 1990s that goes beyond the common story that the World Bank's liberalisation policy caused the breakdown. Second, it provides a profile of the Mozambican cashew sector today, including its current industrial policy and institutional framework as well as figures on the levels of production, processing, and export. Third, it discusses shortcomings of the current cashew policy framework and its implementation and points out challenges of the sector.

Chapter 6 provides a detailed analysis of the cashew value chain in Mozambique and at global level. On the one hand, it gives an overview of the chain actors and their functions. On the other

hand, it explains which actors hold powerful positions in the chain and how they exert power. Based on this analysis, the chapter discusses three questions. First, which capabilities do cashew producers and processors require to access the cashew GVC and to upgrade? Second, how does upgrading play out in the cashew processing sector? Third, which opportunities for upgrading exist for Mozambican cashew producers and processors in the cashew GVC? To answer these questions, the chapter develops a technological capabilities matrix for the cashew processing industry. The matrix provides an overview of the capabilities that firms require to break into the cashew GVC and to upgrade.

The chapter reveals that the upgrading opportunities of producers are extremely limited due to a disconnect between quality and price in the local value chain. In contrast, the cashew GVC offers ample upgrading opportunities for cashew processors in Mozambique. However, the possibility to capture more value (functional upgrading) and higher rewards is small, unless processors target local and regional markets. Due to the chain segment's governance structure knowledge transfers within the chain segment for cashew kernel exports from international kernel buyers to processors are unlikely.

Chapter 7 centres on the political economy of promoting the cashew sector in Mozambique. The chapter focuses on two questions. First, why did supporting (and protecting) the cashew sector become important for the political survival of the ruling coalition at the end of the 1990s? Second, why did the Mozambican Government adopt a specific set of policy measures? To answer these two questions, the chapter provides an in-depth analysis of the distribution of power within the Mozambican society and the cashew sector in the period between 1991 and 2002. In addition, it studies the policy outcomes of the 1999 cashew law and discusses who benefitted from the law and why. The chapter uses the analytical framework for studying the political economy of productive sector promotion developed in the theoretical framework.

The chapter argues that the Mozambican Government supported the cashew sector because it became important for the political survival of the ruling FRELIMO coalition at the end of the 1990s. On paper, the cashew processing industry and cashew farmers were the main beneficiaries of the reform. However, a look at the effects of the reform reveals that exporters of RCN were the unofficial winners of the reform in the short-term. Firms that invested in cashew processing when the industry was revived benefitted from the reform in the mid-term.

Chapter 8 traces the evolution of the Mozambican cashew industry from 2002 until 2019. The chapter centres on three central questions: First, how did the technological capabilities of firms in the Mozambican cashew processing sector evolve since the revival of the industry? Second, what is the current level of capabilities of the Mozambican processing industry? Third, what are the economic and social effects of upgrading in the Mozambican industry? The chapter draws on the operationalisation of upgrading in GVCs developed in the theoretical framework.

The chapter shows that the Mozambican cashew industry had to change the location and scale of cashew processing factories, adapt the technology used to process RCN, and form an association in order to gain access to the global cashew GVC again after its breakdown. Once, it had restored competitiveness, the industry had to invest in upgrading to remain competitive and/or to become more efficient. Processes of upgrading included re-mechanising cashew processing, managing an increasing workforce, investing in compliance with international food safety standards, and increasing firm linkages. The current level of TCs of the cashew industry is moving between basic and advanced capabilities. The chapter further illustrates that the economic and social effects of upgrading in the Mozambican cashew industry were mixed.

Chapter 9 presents which learning channels Mozambican processors used to break into the global cashew value chain and to upgrade. It classifies these channels according to source, scope and time frame. The chapter further reflects on why the cashew law and the National Cashew Institute INCAJU as well as international kernel buyers did/do not drive capability building among cashew processors in Mozambique. Finally, the chapter explores why the learning efforts among Mozambican processing firms vary.

The chapter argues that learning mechanisms at firm level were the most important channels for building capabilities of cashew processors in Mozambique. Technical assistance by the U.S. organisation TechnoServe also played an important role in increasing the capabilities of some processing firms. The cashew law did not drive capability building among processors due to a lack of conditionality and monitoring mechanisms. The law's effects on producer prices further reduced the pressure on cashew processors to invest rents productively. INCAJU lacks the technical knowledge to provide assistance to processors and the ability to collect industry-specific data. The chapter further reveals that international buyers are currently not a source of learning for cashew processors in Mozambique because switching costs for buyers are relatively low, international standards are not yet mandatory and pressure to invest in projects

to promote social upgrading is limited. The commitment of cashew processing firms to driving innovation and capability building depends on whether firms focus on cashew processing or simultaneously engage in cashew processing and exporting RCN.

Chapter 10 summarises the core findings of the thesis. It explains how the politics pursued by the Mozambican Government shaped the re-emergence of the cashew processing industry, the governance of the local cashew value chain, and the industry's upgrading trajectory. It further discusses whether the Mozambican cashew sector can be considered a successful export sector. The final chapter presents important theoretical and practical implications of the research findings and points out two avenues for future research.

2 Literature Review: Insights on the Emergence of Productive Sectors in Sub-Saharan Africa and Firm-Level Upgrading in GVCs

The overall research question raised in the introduction relates to what this thesis suggests are two interrelated fields of research that are commonly explored as separate research areas: the literature on the political economy of productive sector promotion in low-income countries and the strand of research on upgrading in global value chains (GVCs). The aim of this literature review is threefold. First, it seeks to provide an overview of the relevant research related to a) how politics shapes the emergence of successful productive sectors in Sub-Saharan African countries; b) why governments in Sub-Saharan Africa promote (specific) productive sectors, e.g. by adopting industrial policies; c) which upgrading opportunities GVCs offer for producers and supplier firms in Sub-Saharan African countries; and d) how the latter acquire technological capabilities (TCs) in order to access GVCs and to remain competitive. Second, the literature review identifies several gaps in the literatures stated above. Third, it teases out four ways in which the thesis addresses these research gaps. The literature review puts a geographical focus on Sub-Saharan Africa and a thematic focus on agricultural GVCs.

The first section of the literature review centres on the core findings and gaps of the literature related to the political economy of productive sector promotion in Sub-Saharan Africa. Section two reviews the findings and gaps of a recent strand of literature that links the study of domestic politics and the literature on upgrading in GVCs. Section three presents the findings and shortcomings of the literature on upgrading in agricultural GVCs in Sub-Saharan Africa. Section four discusses more recent publications on the learning channels of Sub-Sahara African supplier firms in agricultural GVCs. The final section summarises the research gaps that were identified in the previous sections and presents four contributions of the thesis that aim to contribute to closing these gaps.

2.1 The Political Economy of Productive Sector Promotion in Sub-Saharan Africa

The question how successful productive sectors emerge in Sub-Saharan African countries with national political economic contexts that are not conducive to economic transformation has been tackled by different strands of literature. Proponents of developmental patrimonialism (Booth and Golooba-Mutebi 2012; Kelsall 2011; 2013; Kelsall and Booth 2010) argue that neo-

patrimonialism may assist development under certain conditions related to the organisation of clientelism and rent-seeking. On the basis of several case studies from Asia and Africa, Kelsall (2013) suggests that periods of developmental patrimonialism were characterised by the ability to centralise economic rent management and orient it to long-term economic and political purposes. Using the example of state involvement in the private sector in Rwanda, Booth and Golooba-Mutebi (2012) illustrate how the ruling party centralised the generation and management of rents through its private business operations. The literature on developmental patrimonialism provides insights into growth-enhancing features of clientelism during periods of economic growth in some Sub-Saharan African countries. However, it fails to explain the emergence of successful productive sectors and productivity increases at sector level in countries that lack the characteristics of developmental patrimonialism in general.

The literature on state-business relations (e.g. Bräutigam, Rakner, and Taylor 2002; Chingaipe and Leftwich 2007; Lemma and te Velde 2017; Seekings and Nattrass 2011; Sen and te Velde 2009; Taylor 2007) centres on the formal and informal institutionalised relations between political elites, industry actors and bureaucrats in order to explain why some economies, productive sectors, firms or policy processes perform better than others within and across Sub-Saharan African countries. Most proponents of this approach are directly or indirectly inspired by Evan's (1992; 1995) concept of embedded autonomy.[18]

The state-business literature argues that state-business relations affect the design and implementation of industrial policies. Collaborative coalitions can solve coordination problems, establish checks and balances on government policies and tax plans, and reduce policy uncertainty. Scholars identified conditions under which collaborative state-business relations emerge and do not turn into pure rent-seeking (collusive relations). Research on state-business relations revealed that collaborative state-business relations are determined by how the business sector is organised vis-à-vis the public sector and vice versa, the level of institutionalisation and the practice of state-business relations, and the existence of mechanisms to avoid collusive behaviour, e.g. competition laws (Sen and te Velde 2009).

The approach makes an important contribution by drawing the attention to the role of state-business relations as a decisive factor that explains why some productive sectors are more

[18] Embedded refers to a '*concrete set of social ties which bind the state to society and provide institutionalized channels for the continual negotiation and renegotiation of goals and policies*' (Evans 1992, 164).

successful than others. Nonetheless, this literature has two shortcomings. First, it stresses the importance of an ideal type Weberian bureaucracy which is unlikely to emerge in many Sub-Saharan African countries in the short- to mid-term. Second, it does not fully explain why ruling elites engage with specific economic actors in the first place.

Another group of researchers has centred on the puzzle of pockets of efficiency[19] within the state bureaucracy in clientelist Sub-Saharan African states that lack strong institutions and Weberian ideal type bureaucracies (Crook 2010; Leonard 1991; 2010; Roll 2011; 2014b; Therkildsen 2008). States may create pockets of efficiency to promote specific policy goals and productive sectors. Pockets of efficiency may provide (relatively) effective services to local value chain actors, e.g. producers, processors, or trader, and mediate between the interests of the political elites and value chain actors. Studies that look at why they emerge and how they function therefore help to explain why some sectors are more productive than others.

The political settlements (PS) framework (Behuria, Buur, and Gray 2017; Khan 2010; 2017; Whitfield et al. 2015; Whitfield and Therkildsen 2011) builds on the insights of the literatures on pockets of efficiency and collaborative state-business relations. It centres on the political conditions that enable the promotion of specific productive sectors in the absence of developmental patrimonialism and/or ideal type Weberian bureaucracies. PS scholars argue that political settlements rather than formal institutions determine varying developmental outcomes across economic sectors in Sub-Saharan African countries. Therefore, similar institutions and policies may produce different developmental outcomes across low-income countries and vice versa (Khan 2017, 1–2).

The PS framework focuses on three dimensions in order to study political settlements at society level. The first dimension relates to the horizontal distribution of power i.e. the power of factions that are excluded from the ruling coalition[20] relative to the power of the ruling coalition. The second dimension refers to the vertical distribution of power between higher and lower level factions within the ruling coalition. The third dimension relates to how the political

[19] Other authors use the term pockets of effectiveness (Roll 2011; 2014a), pockets of productivity (Daland 1981), pockets of excellence (Leonard 1991), islands of excellence (Therkildsen 2008), or islands of effectiveness (Crook 2010) to refer to efficient entities within corrupt state bureaucracies.

[20] The ruling coalition includes all groups and individuals who have helped the ruling elites, i.e. the political leaders on top of a regime, to gain power and who support the ruling elites (usually in exchange for specific financial benefits or policy influence). The ruling coalition organises political support to keep the ruling elites in power, e.g. through patron-client networks (Whitfield and Therkildsen 2011, 16, 18).

settlement is (and has been) financed. This involves studying the relations between economic actors and the ruling coalition.

Scholars have used the PS framework to explain the varying performance of institutions and productive sectors in Sub-Saharan African countries in a range of case studies.[21] The approach has also gained popularity among international donors. Several donor-funded research programmes draw on (parts of) Khan's (2010) original PS framework to gain a better understanding of the political economy context in which aid works with the aim to increase the efficiency of aid programmes.[22] In particular, Whitfield et al. (2015) have extended Khan's framework to explain why specific productive sectors receive support by political elites and under which conditions political elites enforce industrial policies effectively. The authors illustrate their model of an elaborated PS framework with case studies from Ghana, Tanzania, Uganda and Mozambique. The theoretical framework developed in Chapter 3 of this thesis draws on the original work on PS by Mushtaq Khan and on more recent publications that focus on the politics of industrial policy (e.g. Behuria, Buur, and Gray 2017; Whitfield et al. 2015; Whitfield and Therkildsen 2011).

A range of scholars have used the PS framework to study the promotion of agricultural sectors in Sub-Saharan Africa from a political economy perspective. In a comparative case study of the horticulture, palm oil and cocoa sectors in Ghana and the sugar sector in Mozambique, Buur and Whitfield (2011) tease out four factors that shape successful state interventions in

[21] For examples of how the PS framework has been applied in different case studies in Sub-Saharan African countries see the special issue on political settlements in the *Journal of International Development,* 29(5) (2017), see the case studies on Mozambique, Tanzania, Ghana and Uganda in Whitfield et al. (2015), see Gray (2015) on the political economy of corruption in Tanzania, see Languille (2015) on the political economy of textbook provision in Tanzania, see Gray (2018) on the comparative role of the state in driving economic transformation in Tanzania and Vietnam, see Abdulai and Hickey (2016) on resource allocation within Ghana's education sector, see Whitfield and Buur (2014) on the rehabilitation of cocoa beans exports in Ghana and the sugar industry in Mozambique, see Hirvi and Whitfield (2015) on the politics of public service delivery in Ghana, see Buur, Balói, and Tembe (2012) for a comparison of political settlements in Mozambique's sugar, poultry, fishery and cashew sector, see Buur, Mondlane, and Baloi (2011) and Buur, Mondlane Tembe, and Baloi (2012) on the rehabilitation of the Mozambican sugar industry, see Buur and Salimo (2018) on the political economy of social protection in Mozambique, see Macuane, Buur and Monjane (2018) on the politics of natural resource exploitation and debts in Mozambique, see Hickey and Izama (2016) on the politics of governing oil in Uganda, see Kjær (2015) on productive sector policies in Uganda's dairy and fisheries sector, see Hansen et al. (2016) on the politics of local content policies in extractive sectors in Tanzania, Uganda and Mozambique, see Croese (2017) on housing politics in Angola, see Kelsall, Hart, and Laws (2016) on the political economy of universal health coverage, see Goodfellow (2014) on the urban transition in Rwanda, see Behuria (2018) on the politics of upgrading in Rwanda's coffee sector, and see Tyce (2019) on the politics of industrial policy in Kenya's garment export sector.

[22] E.g. Melia (2015) funded by GIZ; Laws (2012) funded by the Australian Government; Di John and Putzel (2009) funded by UKaid.

productive sectors: 1) sustained political support; (2) an embedded and mediating bureaucracy; (3) changing the way economic benefits and resources are distributed; and (4) organising industry actors and institutionalising the interaction between state and industry actors. Using the cases of the fisheries and dairy sectors in Uganda, Kjær (2015) shows that political elites support productive sectors if the relations between ruling elites and industry actors are important for building or maintaining the ruling coalition. A case study on the rice sector in Tanzania (Whitfield et al. 2015) argues that the absence of mutual interests between the ruling elite and rice producers, pockets of efficiency in the state bureaucracy, and learning for productivity among rice producers explains why state interventions were not effective.

In Mozambique, PS scholars have mainly focused on the active role of political elites in promoting the sugar sector and, to a lesser extent, the fisheries, poultry and cashew sectors (Buur, Balói, and Tembe 2012; Buur, Mondlane, and Baloi 2011; Buur, Mondlane Tembe, and Baloi 2012; Buur and Whitfield 2011; Whitfield et al. 2015). These studies reveal that the Mozambican Government supported productive sectors if it coincided with the ruling party's priorities, i.e. the political survival of the FRELIMO party coalition. Whether sectors were successful depended on the complex relationships between the FRELIMO coalition, the bureaucracy, and economic entrepreneurs. In another study of the Mozambican sugar sector Buur, Mondlane Tembe, and Baloi (2012) provide a more detailed explanation for why the Mozambican Government supported the sugar sector after the General Peace Accord in 1992 and how a 'mediating bureaucracy' emerged that brokered between the interests and aspirations of public and private actors.

In sum, the PS literature makes an important contribution to studying how productive sectors emerge and why governments support specific sectors and specific actors within sectors. However, it has so far not looked at how governments shape the governance structure of local GVCs as well as the upgrading paths of local value chain actors. At the same time, the literature on upgrading in GVCs does not sufficiently consider the political economy contexts within which the domestic sections of GVCs are embedded as explained in the following section.

2.2 Linking Domestic Politics and GVC Analysis

Recent scholarship has pointed to a lack of political analysis and the role of states in the emergence, evolution and functioning of GVCs (Alford and Phillips 2018; Behuria 2018; Horner 2017; Mayer and Phillips 2017; Swinnen 2015). Scholars criticise the *'overly depoliticized upgrading narrative'* (Vicol et al. 2018, 26) within the GVC literature and the *'persistent firm-centrism'* (Alford and Phillips 2018, 98) in the debate on the governance of GVCs and global production networks (GPN). They call for theorising *'GVCs in political economy terms'* (Mayer and Phillips 2017, 134) and shifting the analytical focus of GVC analysis to the state by looking at domestic political settlements and state-business relations (Behuria 2018, 6). The nexus between domestic politics and GVCs is attracting increasing attention by political economy researchers and a small number of recent publications has made attempts to theorise the role of domestic politics in shaping GVCs in low-income countries. These publications link to Ponte and Sturgeon's (2014) multipolar governance framework. Ponte and Sturgeon argue that governance in multipolar chains is not only shaped by firms but also by actors external to the chain, including states.

Alford and Phillips (2018) argue that states have three types of governance functions within GVCs that are facilitative, regulatory and distributive in nature. Using the example of the South African fruit sector, the authors illustrate how the three types of state governance functions play out or fail to play out on the ground due to tensions across the three functions and between public and private (by lead firms within the chain) governance. Horner (2017) argues that states may take on distinct roles in GVCs or GPN and proposes a typology of state roles in GPNs. States may take on the role of regulators or facilitators but may also act as producers (e.g. state-owned enterprises) or buyers (e.g. public procurement). They shape GVCs and GPN but are also shaped by their positioning in particular GVCs and GPN. Behuria (2018) centres on the politics of upgrading in GVCs using the example of the coffee sector in Rwanda. He brings together the literature on GVCs/GPN and the PS framework to explore the state's role in economic upgrading and to explain who benefitted from upgrading in Rwanda's coffee sector. In a discussion of the political economy of agricultural and food policy, Swinnen (2015) highlights that states determine the nature of policy instruments and the location within the local value chain in which they intervene. This affects the type of political coalitions between domestic value chain actors.

These publications shed light on the type of roles and functions that states may take on in the domestic sections of GVCs. They also suggest that states can actively promote economic upgrading in agricultural sectors in Sub-Saharan Africa with benefits for specific actors. However, an attempt to bring these insights together in order to explore how the interests and policy choices of governments in Sub-Sahara African countries affect the governance of GVCs at domestic level as well as the upgrading opportunities and learning channels of local value chain actors is still missing. The following section discusses the findings and shortcomings of the literature on upgrading in agricultural GVCs.

2.3 Upgrading in Agricultural GVCs

Research on upgrading in agricultural GVCs in low-income countries, and particularly in Sub-Saharan Africa, has focused on tracing the upgrading trajectories of agricultural sectors, teasing out different types of upgrading in GVCs, on exploring the governance structures of agricultural GVCs, and on explaining how GVC governance affects the upgrading opportunities of suppliers.[23] The literature on upgrading in agricultural GVCs also discusses the increasing importance of global private standards as drivers for upgrading or entry barriers for producers and raw commodity processors in the Global South. More recently, researchers have also looked at how the emergence of new buyers from end markets in the Global South with less stringent standards affects upgrading, e.g. through strategic diversification, and which social effects and policy implications this has (Barrientos et al. 2015; Evers et al. 2014; Fold and Larsen 2011; Kaplinsky, Terheggen, and Tijaja 2011). For instance, Barrientos et al. (2015) argue that lower transport costs and costs for complying with standards make the net prices paid by regional supermarkets in Sub-Saharan Africa competitive for local suppliers.

In a study of the South African wine value chain, Ponte and Ewert (2009) argue that the upgrading trajectories of agricultural sectors in Sub-Saharan Africa are complex and that

[23] Research includes papers that discuss the governance, upgrading types and upgrading opportunities in agricultural GVCs in more general terms (Gibbon 2001a; 2001b; 2004; Gibbon and Ponte 2005; Humphrey and Memedovic 2006; Fold and Larsen 2011; Lee, Gereffi, and Beauvais 2012; Humphrey and Schmitz 2002) as well as several case studies: see Barrientos et al. (2015) on horticulture in South and East Africa; see Fold (2002) on cocoa in Ghana; see Jensen (2008) on horticulture in Kenya; see Mather (2008) on citrus fruits in South Africa; see Matthee, Naudé, and Viviers (2006) on floriculture in South Africa; see Ponte and Ewert (2009) on wine in South Africa, see Tessmann (2018) and Tessmann and Fuchs (2016) on the Indo-Ivorian cashew value chain; see Bassett, Koné, and Pavlovic (2018) on cashew nuts in Ivory Coast.

processes of upgrading may co-exist with process of downgrading. The authors argue that a linear understanding of upgrading, i.e. moving up the value chain or increasing value added, mismatches real-world patterns of upgrading. Instead, they propose that upgrading should be understood in terms of reaching a better deal for firms in Sub-Saharan Africa. This may involve reducing functions performed by Sub-Sahara African firms or reducing product quality.

Gereffi et al. (2005) tease out determinants of different GVC governance types. The authors argue that the governance patterns of GVCs depend on three factors: 1) the complexity of information transmitted between firms in the GVC; 2) the possibility to codify this information; and 3) the capabilities of suppliers. The authors present five governance types of GVCs with varying degrees of power asymmetry and explicit coordination (market, modular, relational, captive and hierarchy). Drawing on this typology, Pietrobelli and Rabellotti (2011) link the five GVC governance types to different learning mechanisms for local suppliers within GVCs. The opportunities for knowledge transfers from lead firms to suppliers in low-income countries that the different governance types offer are discussed in more detail in the theoretical framework in Chapter 3 of the thesis.

Lee et al. (2012) take a different stance on explaining GVC governance. The authors argue that the level of concentration of food production (smallholders vs. large-scale production/ plantation agriculture) and food retail (large supermarket chains vs. small food retailers) in agricultural GVCs determines the governance structure as well as the opportunities for upgrading for local producers. The level of concentration of food retail and production also affects the importance and type(s) of standards that prevail in a GVC or chain segment. Highly concentrated actors in agricultural GVCs – large supermarkets or food manufacturers – are able to set the requirements, e.g. related to quality, reliability of delivery and product differentiation, for less concentrated locations (Humphrey 2005, 40). This has implications on producers and intermediary processors in low-income countries that seek to gain access to GVCs (Humphrey and Memedovic 2006, 31–36). The authors develop a fourfold typology of agricultural GVCs that they link to different types of upgrading (see Table 2.1).

Table 2.1. Opportunities for Process, Product and Functional Upgrading in Agricultural GVCs

		PRODUCTION	
		high level of concentration	*low level of concentration*
RETAIL	*high level of concentration*	product type: • fresh produce: bananas, pineapples likely upgrading types: • product & process upgrading unlikely upgrading types: • functional upgrading	product type: • fresh produce: fruits, flowers, vegetables, fish likely upgrading types: • all types of upgrading
	low level of concentration	product type: • cash crops: cocoa, cotton, tobacco, tea, sugar likely upgrading types: • product & process upgrading unlikely upgrading types: • functional upgrading	product type: • small-volume niche agricultural crops & smallholder crops for local markets likely upgrading types: • all types of upgrading • BUT: lack of access to resources & support by international lead firms

Source: the author, adapted from Lee, Gereffi, and Beauvais (2012)

While this typology is a helpful tool to determine chain-specific opportunities for upgrading, it is not always possible to classify specific chain segments according to one of the four types because the local sections of GVCs can play out differently across countries. For instance, the level of concentration among producers of raw cashew nuts is low in Mozambique but high in Brazil, where cashews are mainly grown on large plantations. Another shortcoming of the typology is that it neglects the role of intermediary processors in low-income countries that link international buyers that perform higher value-added activities to producers. Intermediary processors may be a source of technical assistance for local producers, recipients of knowledge transfer from international buyers, or both. This group is therefore of great interest to researchers that study upgrading in GVCs. In addition, the typology centres on product, process and functional upgrading, neglecting other types of upgrading in GVCs, such as end market or supply chain upgrading. Finally, the authors ignore that upgrading opportunities for suppliers in low-income countries are usually also driven by factors related to value-addition. Most value in agricultural GVCs is added through secondary processing, branding, and retail. International buyers are unlikely to outsource these functions to firms in low-income countries.

Research on agricultural GVCs has revealed that the type of chain governance may vary between different value chains, value chain segments, the different nodes within a chain segment, as well as between lead firms and different suppliers at the same value chain node (Fold and Larsen 2011; Ponte and Sturgeon 2014).[24] Governance within GVCs may also change over time as new actors with new competences or requirements enter the chain (Pietrobelli and Rabellotti 2011, 1267). For instance, Tessmann's (2018) study on the cashew sector in Ivory Coast reveals that the value chain segment for exporting raw cashew nuts from Ivory Coast to India is dominated by large Asian commodity traders while the value chain segment for cashew kernels is mainly driven by secondary processors in the Global North. Gibbon (2001b, 350–52) argues that international trading companies have historically played an important role in organising the flow of tropical commodities from small producers in Sub-Saharan Africa to the Global North. Chain governance by international traders is loose and indirect. Raw commodity traders do not attempt to set and control product and process specifications. On the on hand, this is due to their focus on securing large volumes rather than quality-related margins. On the other hand, setting, monitoring, and enforcing standards among the vast number of smallholders that supply commodity traders is a challenge. Gaining access to the chain segment for exporting RCN is therefore much easier than to the chain segment for exporting cashew kernels. However, commodity traders are unlikely to invest in producers' capabilities.

Next to analysing upgrading trajectories and upgrading opportunities for firms in Sub-Sharan Africa that participate in agricultural GVCs, researchers have also studied the role of international buyers in facilitating supplier upgrading. In a systematic literature review of 45 case studies of primary product and light manufacturing industries in low-income countries (including several case studies on agricultural GVCs in Sub-Saharan Africa) Pipkin and Fuentes (2017) identify drivers and effects of upgrading. The authors reveal that international buyers are not the main drivers for upgrading. Rather, most firms in low-income countries are forced to upgrade as a response to 'shocks' of market vulnerability, e.g. national policy reforms.

Humphrey and Memedovic (2006) tease out four preconditions for the involvement of international buyers in supplier upgrading. The authors argue that international buyers are only

[24] Many agricultural GVCs are made up of several chain segments, e.g. a chain segment for the export of raw agricultural commodities, e.g. cashew nuts with shell, and a chain segment for the export of processed agricultural products, e.g. cashew kernels. A value chain node refers to the link between two GVC actors, e.g. between producers and raw commodity traders or between intermediary processors and international wholesalers.

likely to provide technical assistance to suppliers in Sub-Saharan Africa if supply is scarce, if alternative sources of supply are not available, if suppliers are located in regions with specific competitive advantages or if supplier upgrading is part of the buyer's corporate social responsibility strategy. In the absence of these preconditions, international buyers are unlikely to invest in supplier upgrading, unless policies force them to do so.

To sum up, by studying GVC-specific upgrading trajectories and governance structures, scholars have enhanced our understanding of upgrading in GVCs in five ways. First, the literature has revealed that different types of upgrading, e.g. product, process and functional upgrading, play out differently in agricultural sectors. Second, the upgrading trajectories of firms in agricultural GVCs are not linear. Instead, processes of upgrading co-exist with processes of downgrading. Third, agricultural GVCs offer varying opportunities for upgrading for producers and raw commodity processors, depending on how a GVC is governed. Fourth, governance not only varies across agricultural GVCs but also across GVC segments and nodes, as well as between lead firms and different suppliers at the same value chain node. Fifth, international buyers only facilitate upgrading among suppliers in Sub-Saharan Africa if specific preconditions are met.

Despite its many contributions, the body of literature on upgrading in agricultural GVCs has two shortcomings. First, the conceptualisation of upgrading in the literature cited above remains somewhat vague. On the one hand, upgrading may refer to processes, e.g. changing production processes, and/or to outcomes, e.g. increased product quality. On the other hand, upgrading seems to occur at various levels, including the firm, sector, and country levels, and it remains unclear how upgrading spans across these levels. In addition, the literature on upgrading in agricultural value chains disregards how upgrading is linked to processes of technological capability building at firm level.

Second, the literature on upgrading in agricultural GVCs does not explain how supplier firms in Sub-Saharan Africa upgrade. Research on the learning channels that firms at the lower end of agricultural GVCs use to acquire industry-specific information and technological capabilities is scarce. Although some case studies hint at learning channels that supplier firms use, e.g. joint-ventures with foreign investors, knowledge transmission by local research institutions, peer learning or information-exchange between international buyers and local suppliers, they do not specifically shed light on how firms increase their capabilities. Scholars have therefore called for integrating the analysis of firm-level learning and capability building into the literature on

upgrading in GVCs (Morrison, Pietrobelli, and Rabellotti 2008). The following section reviews research that has taken up this call by focusing on the learning channels of Sub-Sahara African supplier firms.

2.4 Learning Channels of Sub-Sahara African Supplier Firms

More recently, scholars linked to the AFRICAP research project at Roskilde University (2016-2018) contributed to tackling the two shortcomings discussed above. AFRICAP centred on the question how local firms in four Sub-Sahara African GVCs[25] build technological capabilities (TCs). To answer this question, it linked GVC analysis with the literature on technological capabilities. The project focused on industrial policies, foreign direct investment (FDI) linkages and buyer-supplier relations within GVCs as main channels of firm-level learning.

The researchers of the AFRICAP project highlight that firms in Sub-Saharan Africa need a certain level of TCs to meet the minimum requirements of a GVC. Once firms have accessed a GVC, they need to develop their TCs in order to remain competitive and to increase their competitiveness, i.e. to upgrade. The acquisition of TCs is therefore at the core of upgrading. The AFRICAP researchers developed a template for a technological capabilities matrix as well as a scoring system for measuring the level of capabilities of firms in Sub-Saharan Africa.

AFRICAP differentiates between learning and capability-building at firm level, the upgrading paths of firms in GVCs, including processes of upgrading, downgrading and deepening, and the positive and negative outcomes of upgrading at firm, sector and country level. The project's theoretical framework also teases out factors that shape the learning efforts and outcomes of firms in GVCs as well as a range of sources of knowledge that firms may draw on, including firm-internal sources, sources at industry level, national institutions, GVCs, FDI and foreign experts (Staritz and Whitfield 2017; 2019).

Case studies on channels of learning that firms Africa use to build TCs in agricultural GVCs in Sub-Saharan are scarce. Next to a case study of the AFRICAP project[26] (Melese 2019), a small number of recent studies provide first insights (Gebreeyesus and Sonobe 2012; Marchi,

[25] The project encompasses four case studies: the floriculture sectors in Ethiopia and Kenya and the apparel sectors in Ethiopia and Madagascar.
[26] The AFRICAP project includes two case studies on agricultural value chains in Sub-Saharan Africa (floriculture in Kenya and Ethiopia). The findings of the case study on floriculture in Kenya have not been published yet.

Giuliani, and Rabellotti 2018; Melese 2019; Ouma 2012; Tessmann 2018; Whitfield 2012). In a systematic literature review of 31 papers that cover 50 manufacturing GVCs in low-income countries, Marchi et al. (2018) provide a comprehensive overview of learning mechanisms within and outside GVCs that local firms in low-income countries used. The authors develop a typology of local GVC innovators that distinguishes between three types of innovators (GVC-led innovators, autonomous innovators and marginal innovators).[27] Marchi et al. argue that the GVC, i.e. knowledge transfers by international buyers or upstream firms, is not a privileged source of learning for most supplier firms in low-income countries. Rather, local firms make considerable investments in intra-firm capability building and/or use a range of learning channels outside the GVC, such as imitation, collective learning at the local level or technical support by non-value chain actors. Although this review does not specifically focus on agricultural value chains in Sub-Saharan Africa, it is relevant for this study because it makes a conceptual contribution by classifying learning mechanisms within and outside the GVC in a more structured way and distinguishing between different types of learners.

Gebreeyesus and Sonobe (2012) trace how the capabilities of Ethiopian flower exporters have evolved in the initial phase of the flower export industry and analyse the role of different actors in the market formation process. The authors reveal that some of the required capabilities to enter the global floriculture value chain, e.g. skilled personnel and marketing information, were acquired from abroad in the initial stage. Once the domestic industry expanded, these inputs became available in the domestic market. The industry association played an important role in solving coordination problems among firms and in providing technical assistance and industry-specific information to local firms. Next to the industry association, the authors also stress the role of the Ethiopian Government in providing investment incentives as well as capacity building initiatives by international donors. Gebreeyesus and Sonobe's case study illustrates that local firms in Sub-Saharan Africa require a substantial level of capabilities to gain access to GVCs with high standards and powerful buyers. Public-private partnerships and coordination between firms and within industries are therefore crucial to incentivise investments and to build capabilities at firm level.

[27] The papers included in this literature review do not explicitly focus on learning mechanisms at firm level but provide some clues on how firms acquired capabilities.

Whitfield (2012) traces the rise and fall of the pineapple export industry in Ghana with a particular focus on exploring how Ghanaian exporters initially developed technological capabilities and which factors (dis)incentivised exporters to invest in enhancing their capabilities. She argues that the industry declined because exporters were not able to build on TCs. The sources of learning of Ghanaian pineapple exporters include learning by doing, horizontal knowledge exchange among firms and through the Ghana Export Promotion Council, technical assistance from foreign consultants, visits to other pineapple exporting and importing countries funded by the Ghana Export Promotion Council as well as a one-off subsidy from a minister of trade that provided exporters access to planting material from Ivory Coast. The case of the Ghanaian pineapple export industry illustrates that firms constantly need to invest in their capabilities in order to remain competitive, even in non-complex industries such as the pineapple industry. Whitfield concludes that learning how to learn is an important first step for Sub-Sahara African firms and creating incentives for firms to invest in capabilities is essential.

Melese (2019) provides a detailed study of the learning channels of Ethiopian flower exporters. She develops an analytical framework for studying firm-level processes of upgrading and capability building. The framework incorporates intra-firm characteristics as well as external factors, namely national policies and systems of innovation, FDI spillovers and the governance of GVCs, and shows how these internal and external factors interact with each other. Melese argues that firms followed distinct learning paths depending on firm internal characteristics and strategies, but also points out overlaps between firms' incentives to invest in building capabilities and firms' learning channels. The most important learning channel that flower exporters in Ethiopia used were a) hiring foreign experts, b) knowledge transfers from input suppliers, c) the national industry association as a facilitator of horizontal exchange of knowledge among flower exporters, and between flower exporters and a Dutch development programme as well as a provider of technical assistance, d) knowledge spillovers from foreign to local firms through imitation and demonstration effects, and e) vertical knowledge exchange with the unpacker at the Dutch auction.

Melese makes an important conceptual contribution to studying learning channels of local supplier firms in GVCs by distinguishing between three dimensions of building TCs (incentivising firms' initial investment in a sector, sources of learning/learning catalysts, and compelling firms'

learning effort) and by linking these three dimensions to the internal and external factors that shape capability building at firm level.

Finally, in his study on governance and upgrading in the cashew industries in India and Côte d'Ivoire, Tessmann (2018) teases out three sources of learning for Ivorian cashew processors: technical assistance by the U.S. non-profit organisation TechnoServe, support schemes by the Ivory Coast Cotton and Cashew Council, and technical assistance by the Vietnamese Cashew Association. However, Tessmann does not study these learning mechanisms and the learning trajectories of individual cashew processors in depth.

In sum, the scant research on which learning channels firms at the lower end of Sub-Sahara African agricultural GVCs use to build TCs provides five important insights. First, firms in late-late industrialising countries often require a considerable level of TCs to break into GVCs with high standards and powerful buyers. Second, firms combine different learning channels within and outside the GVC to build their TCs. Third, learning channels are chain-specific (e.g. flower exporters use different learning channels than cashew processors), country-specific (e.g. cashew processors in Ivory Coast learn in a different way than in Mozambique), and firm-specific (e.g. the strategies to acquire capabilities differs between diaspora and indigenous firms). Fourth, firms use different learning channels at different stages of their business development, i.e. the sources of learning used in the initial phase of an investment may differ from the sources firms use to remain competitive. Fifth, firms need to make continuous investments in their capabilities to remain competitive in GVCs. However, firms do not automatically invest in building their TCs but need incentives a) to learn how to learn, and b) to continuously invest in learning.

Overall, the questions how firms in agricultural GVCs in Sub-Saharan Africa learn and how firm-level learning in local value chains is shaped by the politics of local governments remain under-researched. The following section summarises the research gaps discussed in this chapter and lays out how this thesis aims to contribute to closing these gaps.

2.5 Conclusion

The literature on upgrading in GVCs fails to explain how agricultural export sectors in Sub-Saharan Africa emerge in the first place and how firms at the lower end of GVCs acquire

technological capabilities to gain access to GVCs and to upgrade. In addition, it lacks an operationalisation of upgrading that incorporates the process of technological capability building at firm level and breaks down the concepts of capability building and upgrading into several traceable, interlinked components.

The political settlements framework explains why governments in Sub-Sahara African countries promote economic sectors and why they do so in a specific way. A small number of researchers has started to bring politics into the study of upgrading in GVCs. However, a framework that illustrates how politics shapes the governance of GVCs and the upgrading paths of local producers and processors is missing. Research on learning mechanisms that Sub-Saharan African producers and supplier firms in agricultural GVCs use is still in its infancy. More case studies are needed to tease out patterns of learning of firms in agricultural GVCs and to gain a better understanding of which learning channels work in which contexts and why.

Some agricultural GVCs in Mozambique have been studied from a political economy perspective. An in-depth study of why the Mozambican Government supported the cashew sector and continues to do so does not exist. Studies on upgrading and firm-level learning in agricultural GVCs in Sub-Saharan Africa have mainly focused on Ghana, Kenya, South Africa and Ethiopia. So far, there are no case studies that focus on upgrading opportunities and learning channels for firms in agricultural GVCs in Mozambique. Despite the high potential for cashew processing in Sub-Saharan Africa, the cashew sector has received little scientific attention.

Using the example of the Mozambican cashew sector, this thesis aims to address these research gaps in four ways.

First, it adds to the literature on the politics of upgrading in GVCs by developing a framework that shows how governments affect the governance of local value chains as well as the upgrading paths and learning channels of domestic producers and processors and by applying it to the Mozambican cashew sector.

Second, it develops an operationalisation of upgrading that breaks down the concepts of technological capability building and upgrading at firm level into several raceable, interlinked components, including 1) drivers of technological capability change; 2) technological capability change at firm level; 3) learning channels that firms use to build their capabilities; 4) the sets of technological capabilities that firms enhance by building capabilities; 5) the type(s) of upgrading this corresponds to; and 6) the economic and social effects that upgrading produces at firm and

at sector/country level. The thesis applies this operationalisation of upgrading to illustrate how upgrading played out in the Mozambican cashew industry.

Third, the thesis adds to the research on how Sub-Sahara African firms learn by exploring which learning channels Mozambican cashew processors used to acquire technological capabilities and why.

Fourth, this thesis seeks to close an empirical research gap by studying a sector and a country that have received little research attention.

The following chapter presents the theoretical framework of the thesis that has been developed to study why the Mozambican cashew sector received political support and to explore the upgrading trajectories and learning channels of cashew processors in Mozambique.

3 Theoretical Framework: The Political Economy of Productive Sector Promotion and Upgrading in Agricultural Global Value Chains

This chapter presents a theoretical framework for studying two questions. First, how did Mozambican politics shape the promotion of the Mozambican cashew processing industry? Second, how did Mozambican politics shape the governance of the local cashew value chain and firm-level upgrading among cashew processors? Classical theories of development, such as Modernisation Theory (e.g. Levy, Marion J., Jr. 1966; McClelland 2010; Rostow 1991), Dependency Theory (e.g. Amin 1973; Cardoso and Faletto 1979; dos Santos 1970; Gunder Frank 1967) or World Systems Theory are not able to explain the emergence of successful export industries in countries that are characterised by clientelism, corruption and large informal sectors, and where informal institutions prevail. In order to study the questions stated above, the theoretical framework therefore draws on theoretical approaches from the field of political science, particularly the political settlements (PS) framework[28], and from the field of global value chain (GVC) analysis, notably the literature on upgrading in (agricultural) GVCs.[29]

The PS framework originates in a critique of New Institutional Economics[30] and the good governance agenda promoted by (Western) donors in the 1990s (Behuria, Buur, and Gray 2017; Gray 2016; Gray and Whitfield 2014; Khan 1995; 2017).[31] This study uses the PS framework to explore why the Mozambican Government supported the cashew processing industry and why it adopted specific protectionist industrial policies at the end of the 1990s. It is further applied to analyse under which conditions governments enforce industrial policies effectively.

Global value chain analysis emerged in the mid-1990s. It was inspired by the research of the second wave of dependency theory scholars (Cardoso and Faletto 1979). These scholars opposed the view that economic and political dependency between peripheral and core countries leads to underdevelopment which had been promoted by the first wave of

[28] E.g. Whitfield et al. (2015); Khan (2010); Di John and Putzel (2009); Gray and Whitfield (2014); Behuria, Buur, and Gray (2017); Khan (2017).

[29] E.g. Gereffi, Humphrey, and Sturgeon (2005); Gibbon, Bair, and Ponte (2008), Humphrey and Schmitz (2002; 2001), Pietrobelli and Saliola (2008); Pietrobelli (2008); Humphrey (2004); Barrientos, Gereffi, and Rossi (2010); Morrison, Pietrobelli, and Rabellotti (2008), Staritz and Whitfield (2019; 2017).

[30] E.g. North, Wallis, and Weingast (2009); Weingast et al. (2013); Acemoglu, Johnson, and Robinson (2004); Acemoglu and Robinson (2012); North (1995); Menrad and Shirley (2005).

[31] For an overview of the evolution of the concept of political settlements and the use of the political settlements framework see Behuria et al. (2017); Khan (2017); Ingram (2014) and Laws (2012).

dependency scholars like Theotino dos Santos, Andre Gunder Frank and Samir Amin.[32] GVC analysis provides the theoretical foundations for studying the governance-structure of the cashew GVC. Moreover, it is used to study how upgrading plays out in the cashew sector and which upgrading opportunities and learning channels the cashew GVC offers for producers and processors in Mozambique. It also helps to explain under which conditions international cashew kernel buyers transfer industry-specific knowledge to cashew processors.

This framework links the political settlements framework and GVC analysis to explain how the Mozambican Government shaped the evolution and governance of the local cashew value chain as well as the upgrading paths of Mozambican cashew processors. It thereby brings politics into the study of governance and upgrading in (agricultural) GVCs.

The theoretical framework is presented in three sections. The first section lays out the theoretical foundations for studying firm-level upgrading in agricultural GVCs. The second section centres on the political economy of productive sector promotion. It develops an analytical framework for studying why and how the Mozambican Government supported the cashew sector and discusses three conditions for the effective enforcement of industrial policies. Section three links the political settlements framework and the literature on upgrading in GVCs by teasing out three ways in which governments shape the governance of local value chains and the upgrading trajectories of local value chain actors. The conclusion of the chapter provides some concluding remarks and sets forth how the different components of the theoretical framework are applied in the analytical chapters of the thesis.

[32] The second wave of dependency scholars argued that dependency on foreign capital and external markets may distort but not necessarily impede development in more advanced Third World countries. The research of these scholars focused on specific industries and particularly on *'the interaction between the state, multinational corporations (MNCs) and national business elites in shaping local outcomes in relatively dynamic manufacturing industries'* (Ponte, Gereffi, and Raj-Reichert 2019, 4) The research methodologies used by these scholars, e.g. extensive field research and in-depth interviews with government and industry representatives, were a forerunner for the studies of Global Commodity Chain (GCC) scholars and later on for GVC scholars. Moreover, the focus on (the strategies of) MNCs and on how MNCs exercise power as well as their relations with national governments, local firms and industry actors inspired the research on GCCs and subsequently GVCs (Ponte, Gereffi, and Raj-Reichert 2019, 4–5).

3.1 Firm-Level Upgrading in Agricultural Global Value Chains

This section first conceptualises upgrading in GVCs and develops an operationalisation of upgrading that incorporates the process of technological capability building at firm level. Parts two and three of the section centre on the characteristics of agricultural GVCs and discuss which upgrading opportunities different types of agricultural value chains offer for local producers and firms, depending on their governance structure. Part four lays out under which conditions international buyers in agricultural GVCs transfer knowledge to producers and processors in low-income countries.

Conceptualising Firm-Level Upgrading in GVCs

Upgrading refers to adapting a firm's operations in order to maintain or improve its position in a GVC, e.g. to move into higher value-added activities with increased remuneration. As such, upgrading implies firms *'to make better products, make them more efficiently, or move into more skilled activities'* (Humphrey and Schmitz 2002, 1017). The concept of upgrading encompasses processes at firm level, e.g. enhancing productivity or product quality, as well as the outcomes of these processes, e.g. breaking into new end markets. Firm-level upgrading is a response to developments at the global, country and/or sector level, e.g. the availability of new technologies, fluctuations in demand and prices, changing consumer demands related to food safety, traceability or working conditions in producer countries, or policy changes, e.g. the elimination of protective measures such as export or import taxes on specific goods (Pipkin and Fuentes 2017, 542–44).

The GVC literature develops a typology of upgrading that includes seven types of upgrading in GVCs. Table 3.1 below summarises these upgrading types.

Table 3.1. Types of Upgrading in Global Value Chains

Type of upgrading	Explanation	Examples from the value chain for cashew kernels
Product upgrading	Producing higher quality products with increased unit values or lower quality products at larger scale	Producing organic cashew kernels or producing kernels with less scorches

Process upgrading/ deepening	Increasing the efficiency of the production process, e.g. by introducing new technologies or production systems	Installing a new processing technology to cut open raw cashew nuts
Functional upgrading	Taking over new functions with higher skill content, e.g. design, marketing and branding, and abandoning existing functions	Moving towards secondary processing, including branding and distribution to retailers
Inter-sectoral/ inter-chain upgrading	Using capabilities gained in one chain to move into new productive activities in other productive sectors/chains	Moving into the value chain for macadamia nuts
End market upgrading	Moving into new end markets with different requirements, e.g. new geographic or product markets	Catering to new buyers from the Middle East
Supply chain upgrading	Establishing backward and forward linkages within the supply chain	Improving the relationships with suppliers of RCN and equipment manufacturers
Social upgrading	Improving the rights and entitlements of workers and enhancing the quality of employment	Improving hygiene at the cashew factories and providing day care for children

Source: the author, based on Humphrey and Schmitz (2002, 1020–21), Ponte and Ewert (2009, 1638–39) and Staritz and Whitfield (2017, 12)

Product upgrading refers to in- or decreasing a product's quality, which allows firms to move into more sophisticated markets that generate higher revenues or into less sophisticated markets at larger scale (strategic diversification). This may involve diversifying the product range or scaling up production to increase profitability.

Process upgrading involves investing in technology and reorganising production in order to make the production process more efficient, reduce per-unit costs, or comply with international standards. Complying with food safety, labour, or environmental standards is not necessarily linked to a price premium if compliance with standards is a prerequisite for entering and/or remaining in a GVC. Process upgrading may also include other avenues for increasing efficiency and profitability, e.g. improving logistics and lead times, increasing reliability, ensuring product homogeneity, or aggregating orders to generate economies of scale.

Functional upgrading relates to producing higher value-added products by taking over new functions, e.g. product design, marketing and branding or tasks related to transport, packaging or logistics. Firms may also use their newly acquired capabilities and functions to enter a new value chain that caters to a different end market.

Inter-chain upgrading requires firms to use the technological capabilities (TCs) and know-how gained in one GVC to break into another (related) GVC. End market upgrading refers to moving into new end markets with different requirements, e.g. domestic or regional export markets. Supply chain upgrading involves establishing or improving backward and/or forward linkages with suppliers. Finally, social upgrading refers to enhancing the rights and entitlements of workers, the quality of employment, and real wages (Humphrey and Schmitz 2002, 1020–21; Ponte and Ewert 2009, 1638–39; Staritz and Whitfield 2017, 12–18).

In general, upgrading is a relational process. The more firms in low-income countries acquire specific capabilities, the lower are the returns. If specific capabilities become the new standard, price premia for firms with a higher level of capabilities disappear altogether and switching costs for buyers decrease.[33] As a result, the value-added for firms at the lower end of GVCs may remain low despite efficiency and quality improvements. Only functional upgrading goes beyond a focus on production and includes other value-creating activities that can enable firms to reposition themselves within GVCs.

Firms in low-income countries follow unique, non-linear and multi-directional upgrading paths within value chains (Ponte and Ewert 2009; Rossi 2011; Staritz and Whitfield 2017; 2019; Tokatli 2013). These paths may lead to increased, constant or lower benefits. They can simultaneously involve processes of upgrading, downgrading and deepening, and moving up in one or several value chains (Staritz and Whitfield 2017, 15–16). Downgrading refers to moving into less complex products, functions, and end markets within a GVC. For firms with low TCs the best strategy might be to deepen existing capabilities in order to explore new opportunities at the value chain stage in which the firm is currently involved or to meet the increasing demands of buyers (Pietrobelli and Rabellotti 2011, 1262).

Firms' unique upgrading paths can produce positive and negative effects at firm-level in terms of rewards, e.g. in- or decreased incomes, profits and wages, risks and working conditions. Performing less complex products and functions or moving into less demanding end markets (downgrading) may increase a firm's profits while upgrading may increase a firm's risks because it has to make costly investments in new capabilities without an adequate compensation (Kummritz, Taglioni, and Winkler 2017, 2; Staritz and Whitfield 2017, 14–17). Upgrading also produces mixed outcomes at sector and country level, e.g. in- or decreased exports, linkages,

[33] Switching costs refer to the costs of buyers for switching suppliers.

in-country value-addition, employment, skills, wages, infrastructure and institutions (Staritz and Whitfield 2019, 6) as well as positive or negative social effects (Barrientos, Gereffi, and Rossi 2010; Lee and Gereffi 2015; Lee, Gereffi, and Barrientos 2011; Salido and Bellhouse 2016).

Upgrading, downgrading and deepening requires firms to invest in their technological capabilities. Firms need to increase their TCs, e.g. to enhance productivity, product quality, to adapt existing technologies, to comply with international standards, to enter new markets or to develop new products. The development of TCs is therefore at the core of upgrading. A firm's level of TCs determines whether it is able to participate in a GVC and remain competitive and the firm's upgrading path (Staritz and Whitfield 2019, 391).

Technological capabilities refer to *'the skills—technical, managerial or organizational—that firms need in order to utilize efficiently the hardware (equipment) and software (information) of technology, and to accomplish any process of technological change'* (Morrison, Pietrobelli, and Rabellotti 2008, 41). They are a type of firm-specific '*institutional knowledge that is made up of the combined skills of its members accumulated over time'* (Lall 1993, 720). TCs enable firms to master and adapt existing technologies and production practices in order to maintain and increase global competitiveness (Whitfield et al. 2015, 38).

TCs encompass three sets of capabilities: investment, production, and linkage capabilities. Investment capabilities are required before setting up a production plant and to expand it. They refer to *'the skills needed to identify, prepare, obtain technology for, design, construct, equip, staff, and commission a new facility (or expansion)'* (Lall 1992, 168). This includes adapting existing technology to country- and/or firm-specific conditions, e.g. related to the climate, availability of raw material or skill base. Markets for technology are often fragmented and firms need to be able to identify the most appropriate technology, locate the best supplier(s) and negotiate terms and prices. Access to finance can be a big hurdle for firms in low-income countries during this phase, in particular if they pay for their technological equipment in a hard currency while they have soft currency[34] revenues. (Biggs, Shah, and Srivastava 1995, 19).

Production capabilities relate to the product itself, the production process and to post-harvest processes and affect how efficiently firms use technologies. They are needed to operate a

[34] Hard currency refers to the currency of a politically and economically stable countries that is widely accepted around the world for the payment of goods and services. The value of a soft currency fluctuates due to the political and economic uncertainty of the country that issues it.

production plant, including maintenance, quality control, inventory management, monitoring of productivity and control, managing relations with managers and workers as well as more advanced activities, e.g. adapting and improving equipment, research, design and innovation. In a GVC context, production capabilities also refer to meeting time and volume requirements and complying with international standards (Lall 1992, 168; Staritz and Whitfield 2017, 9).

Finally, firms need linkage capabilities to establish and manage formal and informal relations with input suppliers, sub-contractors, competitors, public and private service suppliers, institutions, consultants, donors and buyers (Lall 1993, 725–26). They enable firms to transmit and receive information, skills and technology to and from these actors (Lall 1992, 168). Stable intra- and extra-firm relations affect the survival, efficiency and advancement of firms, e.g. by securing access to scarce resources (Ouma 2012, 325–26). They are particularly important in GVCs where the organisation of production is fragmented and firms need to establish and manage relations with various actors (Staritz and Whitfield 2017, 10).

Acquiring TCs is a process that requires continuous learning efforts and investments by individuals and through them firms. This is important because market conditions, consumer tastes, technologies, the level of competition as well as costs for labour and inputs are constantly changing. Technological learning takes place when individuals (and through them firms) acquire additional technical skills, knowledge, experience and linkages (Bell and Pavitt 1992, 262; 1995, 90; Gonsen 1998, 8). To do so, firms use different learning channels within and outside the GVC.

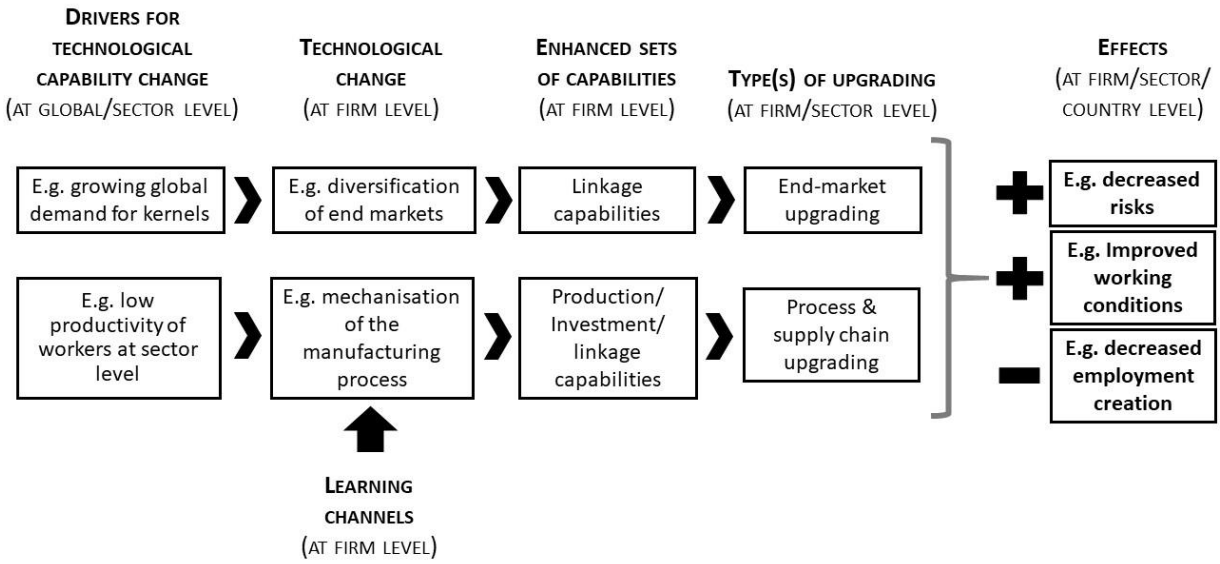
In sum, upgrading in GVCs encompasses building technological capabilities at firm level – as a response to drivers at sector and global level – with varying economic and social outcomes at firm level and at sector/country level. Firms at the lower end of GVCs need a certain level of TCs to a) master and adapt new technologies to local conditions in order to break into GVCs[35]; and b) seize the upgrading opportunities that GVCs may offer. The latter includes generating and managing change, e.g. related to the product itself or its production process, to remain globally competitive or to capture greater gains from GVC participation. Firms use different

[35] For some GVC scholars (Gereffi and Fernandez-Stark 2016) entering a GVC is a type of upgrading of its own. This thesis differentiates between TCs that firms acquire(d) to access GVCs and TCs that firms acquire(d) to remain competitive. Upgrading only includes developing TCs to remain or enhance the competitiveness in GVCs.

learning channels to build TCs. Their varying levels of TCs and learning efforts explain why firms in the same GVC follow different upgrading paths.

To trace processes of upgrading in the Mozambican cashew processing industry and their effects, the operationalisation of firm-level upgrading used in thesis differentiates between 1) drivers for technological capability change; 2) technological capability change at firm level; 3) learning channels that firms use to build TCs; 4) the sets of technological capabilities that firms enhance by building capabilities; 5) the type(s) of upgrading this corresponds to; and 6) the effects that upgrading produces at firm and at sector/country level. Based on the above discussion, Figure 3.1 illustrates the operationalisation of upgrading in GVCs for cashew nuts.

Figure 3.1. Operationalisation of Firm-Level Upgrading in Global Value Chains



Source: the author

This section discussed upgrading in GVCs in more general terms and established a link between the concept of upgrading and the development of technological capabilities at firm level. The following section zooms in on the characteristics of agricultural GVCs. More particularly, it explains what processing and upgrading refers to in additive agricultural GVCs.

Characteristics of Agricultural Value Chains

Agricultural value chains, such as the global cashew value chain, are additive value chains, i.e. they are characterised by *'a process of sequentially adding value to each stage of the chain'* (Kaplinsky 2015, 22) as the raw materials pass through a series of processing stages. Additive value chains prevail in the resource sector and differ substantially from vertically specialised value chains that are predominant in the manufacturing and services sectors in which globally dispersed suppliers produce the different components of complex final products, e.g. automobiles, in parallel. In 2014, more than 75% of African exports stemmed from additive value chains due to the continent's focus on the resource sector. Resource extraction is relatively immobile. Fracturing production geographically is therefore usually only possible beyond the growing stage (Kaplinsky 2015, 21–22). The distinction between vertically specialised value chains and additive GVCs is not clear cut. For instance, agro-processing for export in Sub-Sahara African countries is considered part of the manufacturing sector, however, the manufacturing process is sequential and final products are generally not complex.

Many agricultural GVCs are differentiated value chains that include various chain segments, e.g. a segment for the export of raw agricultural commodities and a segment for the export of processed products. Upgrading in agricultural GVCs therefore refers to maintaining or enhancing the competitiveness of producers of agricultural raw materials in low-income countries and/or of firms involved in agro-processing. Agro-processing in low-income countries includes processing fresh produce, e.g. fruits, vegetables, or flowers, and transforming agricultural raw materials into processed products. Processing fresh produce adds value by washing, trimming, chopping, packaging (in some cases including bar-coding and labelling), maintaining the cold chain and guaranteeing quick transfers from farm to shelf (Fold and Larsen 2011, 58; Humphrey and Memedovic 2006, 33). Processing agricultural raw products often only involves processing at the primary or intermediate stage, e.g. separating the cashew kernel from its outer shell. Processing of final goods usually takes place in the Global North, e.g. producing nut mixes or cashew butter.

Agricultural GVCs or chain segments offer different upgrading opportunities for producers and primary processors in low-income countries, depending on their governance structure and the characteristics and strategies of international buyers (Fold 2002; Fold and Larsen 2011; Gibbon 2001a; 2001b; Gibbon and Ponte 2005; Humphrey 2005; Humphrey and Memedovic 2006;

Pietrobelli 2008). The following section discusses how the governance of GVCs affects the upgrading opportunities of firms at the lower end of agricultural GVCs.

Governance and Upgrading Opportunities in Agricultural GVCs

GVCs are recurrent transactions between independent actors in different countries with varying levels of capabilities, functions, and power.[36] Governance in GVCs refers to the power relationships between these actors as well as the flow and allocation of resources within a chain or a chain segment (Staritz and Whitfield 2017, 13). Governance in agricultural GVCs arises because buyers require non-standard, specialised products and seek to reduce their risks, e.g. related to product quality, reliability of delivery, product safety and labour standards. They enforce governance through positive sanctions, e.g. higher prices, and negative sanctions, e.g. excluding specific suppliers from a GVC (Humphrey and Memedovic 2006, 10–11).

In many agricultural GVCs power relations between suppliers and buyers are asymmetric, i.e. one group of firms – so-called lead firms – exerts control over other actors in the chain with lower capabilities. Although lead firms may not be involved in the production process itself, they have the power to enforce specifications related to the product, the production process, logistics, control mechanisms and the timing of production and delivery (Humphrey and Memedovic 2006, 10; Kaplinsky and Morris 2002, 29; Ponte and Gibbon 2005, 18; Staritz 2012, 6). They can determine the division of labour and profitability within the chain, i.e. which functions other value chain actors take on and at what price (Fold and Larsen 2011, 44; Ponte and Gibbon 2005, 5). Lead firms can take control over those activities that add most value to products, such as design or branding, and outsource manufacturing activities with lower value-added to suppliers worldwide. This affects the upgrading opportunities for producers and agro-processors at the lower end of agricultural GVCs. For instance, buyers may block functional upgrading among local firms because they do not want to lose control over higher value-added activities (Staritz and Whitfield 2017, 14).

Under certain conditions, the need to comply with requirements set by lead firms as well as lead firms' efforts to 'tutor' potential suppliers to meet these requirements by passing on

[36] There are different types of power in GVCs. Power can be transmitted directly or through diffuse transmission mechanisms. The locus of power may be the relations between two actors in a GVC or the collective actions of several players within and outside the GVC that act simultaneously (Dallas, Ponte, and Sturgeon 2019, 673–78). This section centres on the direct transmission of power between firms in a GVC.

practical and tacit knowledge, information and material inputs can be a source of learning for firms in low-income countries (AfDB, OECD, and UNDP 2014, 129; Gereffi 1999, 38; Staritz and Whitfield 2017, 13–14). Table 3.2 indicates how different governance types in agricultural GVCs or chain segments are likely to favour specific types of knowledge transfer within GVCs (Pietrobelli and Rabellotti 2011, 1263).

Table 3.2. Governance Types and Learning Mechanisms in GVCs

Governance types	Complexity of transactions	Ability to codify transactions	Capabilities of suppliers	Learning mechanisms within GVC
Market	Low	High	High	Knowledge spillover, imitation
Modular	High	High	High	Learning through pressure to accomplish international standards; transfer of knowledge embodied in standards, codes, manuals
Relational	High	Low	High	Mutual learning via face-to-face interactions
Captive	High	High	Low	Learning via deliberate knowledge transfer from lead firms confined in a narrow range of tasks such as simple assembly
Hierarchy	High	Low	Low	Imitation; turnover of skilled managers and workers; training by foreign leaders and owner; knowledge spillovers

Source: Pietrobelli and Rabellotti (2011, 1263), based on Gereffi, Humphrey, and Sturgeon (2005, 87)

In market-based GVCs, transactions between firms are relatively simple and easily codifiable.[37] Suppliers in low-income countries need to be able to meet the minimum GVC requirements – without assistance from international buyers – in order to break into the chain. By participating in the chain, suppliers obtain information on the requirements, e.g. related to product and

[37] Complexity of transactions relates to the information and knowledge that is transmitted between firms in a GVC, particularly with respect to product and process specifications. Codification refers to unifying complex product and process specifications with the help of technical standards.

process standards, that the global market demands. The level of coordination and switching costs in such chains is low. Imitation and knowledge spillovers allow suppliers to capture the knowledge needed to adapt their capabilities to remain competitive.

In GVCs with modular governance, product specifications are more complex than in market-based chains, transactions are highly codified, and the level of capabilities required from supplier firms is therefore higher. Suppliers need to acquire codified as well as tacit knowledge to participate in the GVC and need to make continuous investments in learning to remain competitive. Lead firms, e.g. large manufacturers or retailers, induce learning among their suppliers by imposing pressure to meet international standards, however, they do not actively support producers or intermediary processors to develop the capabilities needed to comply with these standards (Pietrobelli 2008, 471).

International private food safety, labour, and environmental standards[38] that reflect trends in consumption in industrialised countries are an increasingly relevant avenue for lead firms to exert control over suppliers. International standards, quality seals and food safety management systems, such as Hazard Analysis and Critical Control Points (HACCP), codify information about how to make a product that meets buyers' requirements related to food safety, documentation, the environment or working conditions. The information that buyers require from suppliers is reduced to whether the latter are certified or not. Standards thereby decrease the risks and costs of monitoring of retailers and large manufacturers and push challenges related to the enforcement of standards further down the chain (Humphrey and Memedovic 2006, 27). In short, the ability to fulfil specific standards replaces prices as the key determinant for GVC participation in agrifood chains.

In relational chains, the levels of complexity of transactions and of firm capabilities are high and the ability to codify information is low. The relationships between buyers and suppliers are intense and time-consuming to exchange tacit knowledge, therefore, switching costs are high. The level of coordination in relational chains is high and the competencies of firms are complementary. These types of chains offer opportunities for supplier upgrading through mutual learning via face-to-face interactions.

[38] Standards can relate to the physical characteristics of a product as well as to production, handling and processing to ensure that products meet specific physical characteristics, e.g. regarding product safety (Humphrey and Memedovic 2006, 15).

In captive chains, the complexity and codifiability of products is high but the capabilities of suppliers are low. Learning in captive chains is likely to take place via deliberate knowledge transfer from lead firms to suppliers. However, knowledge transfer is confined to a limited range of tasks. While these chains are likely to promote learning among supplier firms in low-income countries, a high level of control from buyers increases the risk of locking suppliers into lower value-added activities.

Finally, in hierarchical chains (or vertical integration), transactions are complex and codifying product specifications is difficult. The level of capabilities of suppliers is low and lead firms take direct ownership of some of the operations in the chain. Learning mechanisms in hierarchical chains include imitation, turnover of skilled labour, knowledge spillovers and training by value chain leaders.

In sum, the governance type of agricultural GVCs or chain segments shapes the upgrading opportunities of agricultural supplier firms in low-income countries in two ways. First, power dynamics within the chain affect the scope of upgrading of suppliers, i.e. whether the chain offers opportunities for firms to reposition themselves within GVCs through functional upgrading. Second, the type of GVC governance impacts the learning mechanisms of supplier firms in GVCs. However, even if the governance type in an agricultural GVC or a chain segment favours knowledge transfers from buyers to suppliers, this is not an automatic process. The following sub-section explains under which conditions lead firms are likely to transfer knowledge to supplier firms in low-income countries.

Conditions for Knowledge Transfers from Buyers to Suppliers in Agricultural GVCs

Whether buyers[39] transfer knowledge to suppliers in agricultural GVCs depends on the type and capabilities of buyers, their efforts to economise on coordination costs, returns on investments, and their strategies related to corporate social responsibility (CSR). Buyers in agricultural GVCs range from commodity traders or brokers, manufacturers/secondary processors, small retailers, large retailers (e.g. supermarket chains), and vertically integrated multinational corporations.

[39] Buyers include lead firms and lower-tier suppliers, e.g. importers, local exporters or processors, that manage value chains and take over responsibility for improved performance among suppliers at the lower end of the chain.

Retailers are less likely to provide technical assistance to local producers or intermediary processors than international manufacturing firms that are involved in secondary processing, branding, and distribution themselves. Retailers source hundreds or thousands of different products and lack specialist knowledge about products and their production processes. They set the requirements for final products and rely on producers, processors, or lower-tier suppliers to meet them. Retailers can outsource the responsibility to ensure technical competence and compliance with standards along the chain to lower-tier suppliers and therefore have few incentives to invest in the capabilities of local firms themselves. In contrast, manufacturers are technical specialists that know how to increase the productivity of intermediary processors and producers in agricultural GVCs and are therefore more likely to provide technical assistance (Humphrey 2005, 38–40).

Local processors or intermediary traders may also be agents of knowledge dissemination. They have expertise in local value chains and the specifics of local production. Because they are located in producing countries, sourcing product elsewhere may not be an option and local processors and traders may therefore be forced to invest in their local supply base.

Next to buyers' capabilities, efforts to limit coordination costs and generate high returns on investment as well as CSR strategies shape buyers' decisions to transfer knowledge to suppliers. If buyers can source a product without having to invest in suppliers' capabilities, they are unlikely to provide technical assistance because they seek to minimise coordination costs.[40] In addition, buyers will only invest in the TCs of local suppliers if the benefits of this investment outweigh the costs (Humphrey 2004, 12–14). Buyers benefit from investing in the capabilities of suppliers if supply is scarce, e.g. due to new trends in consumption or new standards that bear risks of non-compliance, or if alternative sources of supply are not available, e.g. because of land scarcity, and if buyers can lock in suppliers by helping them to upgrade. Buyers also benefit from promoting upgrading among suppliers in locations with competitive advantages, such as lower transport costs or seasonal advantages (Humphrey and Memedovic 2006, 44–45). Upgrading the capabilities of local suppliers may also be part of a buyer's business strategy

[40] Coordination costs refer to the costs related to managing inter-firm relations and to a loss of flexibility in sourcing inputs. Buyers seek to increase the advantages of chain coordination, e.g. ensuring enough inputs that comply with specific requirements at the right time, while keeping the costs of coordination as low as possible (Humphrey and Memedovic 2006, 12).

with the aim to boost its reputation vis-à-vis consumers or a response to legal provisions related to CSR (AfDB, OECD, and UNDP 2014, 161).

If coordination costs are too high or returns on investment too low for buyers, local firms depend on the support of other actors within the chain, e.g. suppliers, or outside the chain, e.g. development agencies, certifiers or promoters of private standards, NGOs or public stakeholders, and/or need to develop the capabilities to adapt to new chain requirements through their own efforts. Otherwise, they might be forced to leave a GVC (Humphrey and Memedovic 2006, 44; Pietrobelli 2008, 470). Table 3.3 summarises the determinants of firm-level learning in agricultural GVCs and gives an example of a learning mechanism.

Table 3.3. Agricultural GVCs as a Source of Firm-Level Learning

Theoretical approach	Source of Learning	Key (groups of) actors	Factors that shape firm-level learning	Example of a learning mechanism
GVC analysis	• Knowledge transfers between actors within GVCs	• International buyers (lead firms, first-tier, second-tier suppliers) • Local suppliers • Producers	• GVC governance • Characteristics and strategies of buyers • Buyers' efforts to minimise coordination costs • Buyers' returns on investments • Endogenous learning effort of local suppliers	• International secondary processors provide technical assistance to Mozambican processors to change production processes in order to comply with international food safety standards

Source: the author

To sum up, agricultural GVCs are additive value chains in which raw materials pass through a series of processing stages, each adding value to the product. Upgrading in agricultural GVCs refers to increasing the capabilities of local producers, e.g. smallholder farmers, and/or of local intermediary processors. Agricultural GVCs are differentiated chains, i.e. they include various chain segments that involve different actors. The governance structures of agricultural GVCs, chain segments or nodes within a chain vary, favouring different types of upgrading and learning mechanisms among local producers and/or agro-processors.

Lead firms in GVCs may be a source of knowledge about market requirements and about how to meet these requirements for local producers or intermediary processors. While lead firms set the (changing) product requirements within a given chain or chain segment, they may outsource the responsibility for managing the value chain and ensuring compliance with specific requirements to first-tier or second-tier suppliers (Pietrobelli 2008, 462). Whether buyers invest in the TCs of local firms depends on the type and capabilities of buyers, their efforts to economise on coordination costs, returns on investments, CSR strategies and their willingness to outsource higher value-added activities to local producers and processors.

The theoretical foundations discussed in this section guide the analysis of the global cashew value chain in Chapter 6 of this thesis and inform the discussion on learning channels of Mozambican cashew processors in Chapter 9. The operationalisation of upgrading at firm level developed at the beginning of the section is used to trace the upgrading paths of the Mozambican cashew industry in Chapter 8 of the thesis.

The following section centres on the political economy of productive sector promotion in Sub-Saharan Africa with the aim to develop an analytical framework for studying why governments promote specific sectors.

3.2 The Political Economy of Productive Sector Promotion

This section first introduces the core assumptions and concepts of the political settlements (PS) framework.[41] Second, it further develops an analytical framework for studying why the Mozambican Government promoted the cashew sector and why it adopted a specific set of industrial policies with benefits for some actors within the cashew value chain. Third, it discusses three conditions for the effective enforcement of industrial policies.

[41] This thesis does not use the PS framework to predict specific empirical phenomena. In fact, a specific configuration of a political settlement may produce different outcomes at sector level. Rather, the PS framework is used as a heuristic framework to analyse why the Mozambican Government supported the cashew sector at the end of the 1990s and – based on this analysis – to explain why the reform of the cashew sector in 1999 benefitted specific actors in the local cashew value chain.

Core Assumptions and Concepts of the Political Settlements Framework

The distribution of power within societies is at the core of the PS framework. Political settlements refer to '*an interdependent combination of a structure of power and institutions at the level of a society that is mutually 'compatible' and also 'sustainable' in terms of economic and political viability'* (Khan 2010, 20). Political institutions in low-income countries need to be compatible with the actual distribution of power within society, i.e. formal and informal institutions have to provide privileges and rents to power holders with credible violence potential and exclude those with less 'holding power'.[42] Khan (2010, 8, 26) particularly emphasises the importance of informal institutions in facilitating the allocation and accumulation of power and resources among powerful groups through patron-client networks. Although formal institutions exist, informal institutions are essential to maintain the social and political stability in low-income countries because '*[t]hey help to generate distributions of economic benefits that are more in line with existing distributions of power and in doing so they also sustain these distributions of power'* (Khan 2010, 27). Sustainability is important in order to ensure a certain level of economic performance (Khan 2010, 6,20).

Building on Khan's (2010, 8–9) original work, Behuria et al. (2017, 512–14) present an approach to studying PS in low-income countries along three dimensions. The first dimension centres on the horizontal distribution of power, i.e. the power of factions that are excluded from the ruling coalition[43] relative to the power of the ruling coalition. If excluded factions are weak, the ruling coalition is more likely to follow strategies that promote long-term economic growth, instead of securing its short-term political survival. The second dimension focuses on the vertical distribution of power between higher and lower level factions within the ruling coalition as well as on the competition between high-level factions within the ruling coalition. The coalition's capacity to implement and enforce institutional rules and policies is higher if the relative power of lower level factions of the ruling coalition and the level of competition among higher-level factions is low. The third dimension refers to how the political settlement has been financed in

[42] Khan (2010, 6) defines holding power as *„the capability of an individual or group to engage and survive in conflicts*". The concept of holding power is explained in more detail below.

[43] The ruling coalition includes all groups and individuals who have helped the ruling elites, i.e. the political leaders on top of a regime, to gain power and who support the ruling elites, usually in exchange for specific financial benefits or policy influence. The ruling coalition organises political support to keep the ruling elites in power, e.g. through patron-client networks (Whitfield and Therkildsen 2011, 16, 18).

the past and is currently financed. This involves studying the relations between economic actors and the ruling coalition.

In countries with clientelist PS[44], such as Mozambique, growth-enhancing formal institutions exist but are modified by informal networks that constrain the rights and incomes of beneficiaries of formal institutions. Because formal institutions do not function in impersonal and rule-following ways economic actors need access to informal channels of support next to formal rights to ensure the effectiveness and viability of their formal rights. It is unlikely that a Weberian good governance state – as promoted by some (Western) international donors – will emerge or can be enforced in these countries in the short to mid term because formal institutions and power are not aligned (Khan 2010, 48–55).

However, the example of the Mozambican cashew sector shows that the developmental outcomes of countries with clientelist PS are not overall negative. Whitfield and Therkildsen (2011, 10) argue that *'corruption may be good for economic development as a means of primitive accumulation; whether it is predatory or productive depends on how the accumulated wealth is used.'*[45] Informal distributive arrangements can be functional in the context of a specific PS because they can enable the enforcement of growth-promoting formal institutions and contribute to social stability. Hence, growth and economic transformation is possible even in clientelist PS if this is in line with the interests of powerful societal groups (Khan 2010, 57).

The following sub-section lays out how this thesis uses the three dimensions of the PS framework (horizontal and vertical distribution of power and relations between the ruling coalition and economic actors) to analyse why the Mozambican Government promoted the cashew sector.

Explaining Productive Sector Promotion

The distribution of power within society affects whether and how political elites promote productive sectors, e.g. through industrial policies, as well as the capacity of states to enforce

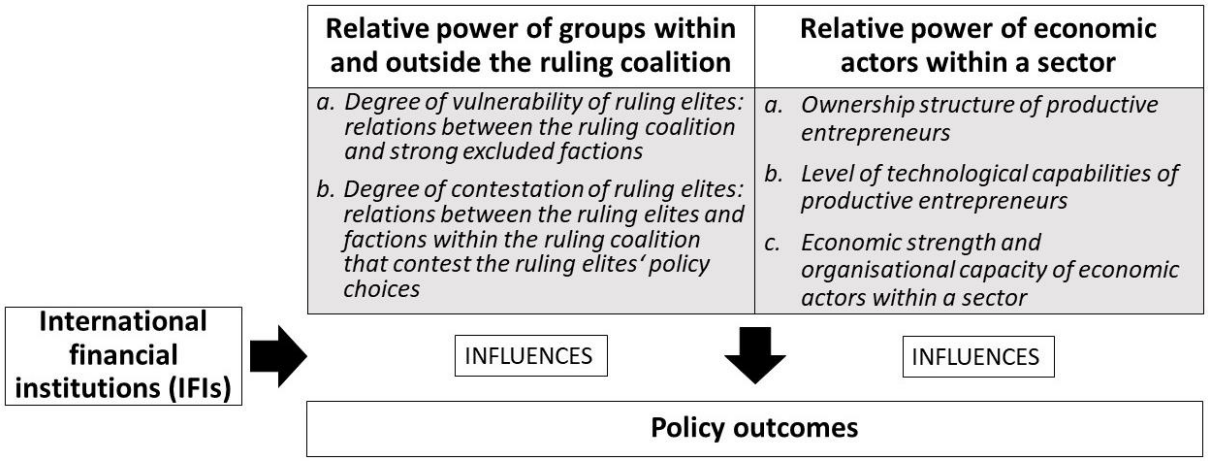
[44] Clientelist political settlements prevail in low-income countries. Clientelist refers to *'a mismatch between existing distributions of holding power and the structure of formal institution [which leads to a] gap between the expected operation of formal rules and their actual operation'* (Khan 2010, 55).

[45] According to Marx, primitive accumulation is the starting point for capitalist modes of production. In this thesis it refers to a *'process of accumulation outside the formal market process where political power is used to privilege the accumulation activities of particular individuals'* (Gray and Whitfield 2014, 14). Developing countries are characterised by high levels of primitive accumulation which in some cases are re-invested in productive sectors.

the implementation of these policies (Whitfield et al. 2015, 30, 90-96). Understanding the distribution of power within society and at different levels of society (Monjane 2019; Salimo 2018) is therefore crucial to explain productive sector promotion.

The distribution of power within society is a function of *'1) the relative power [of groups] within and outside the ruling coalition, and 2) the relative power of domestic capitalists vis-à-vis ruling elites and the technological capabilities of those capitalists'* (Whitfield et al. 2015, 96). The varying levels of power of societal groups need to be understood in relation to a country's history, i.e. how societal groups were organised during the colonial and post-colonial periods. Figure 3.2 illustrates the analytical framework used to study the distribution of power within the Mozambican society and the cashew sector.

Figure 3.2. Analytical Framework for Studying Societal Power Relations



Source: the author, based on Whitfield et al. (2015)

The analytical framework for studying societal power relations consists of four dimensions: 1) the relative power of groups within and outside the ruling coalition; 2) the relative power of sector-specific economic actors vis-à-vis the ruling elites; 3) the role of international financial institutions in shaping the decision-making context of ruling elites; and 4) policy outcomes as indicators of the power of economic actors. The following sections discuss the four components of the analytical framework in more detail.

The Relative Power of Groups Within and Outside the Ruling Coalition

The relative power of groups within and outside the ruling coalition relates to the degree of vulnerability of ruling elites and the degree of contestation within the ruling coalition. Ruling elites are vulnerable if strong groups outside the ruling coalition exist that could unseat the government. The level of contestation refers to the power relations among ruling elites and between ruling elites and lower level factions of the ruling coalition (Laws 2012, 9; Whitfield et al. 2015, 24, 97–100; Whitfield and Therkildsen 2011, 20–24). If factions within the ruling coalition contest specific policies, it is difficult for ruling elites to enforce them (Whitfield and Therkildsen 2011, 20–24).

Strong actors outside the ruling coalition and fragmentation within the ruling coalition can decrease the relative power and threaten the political survival of the ruling coalition. Ruling elites therefore only support productive sectors which help them to survive politically, i.e. to sustain their power (and that of their faction), to increase their ability to exert influence on the government and to enhance their private wealth. Ruling elites may use industrial policies to provide resources to societal groups that are relevant for maintaining the ruling coalition or to win elections (Whitfield and Therkildsen 2011, 17–18).

Promoting specific productive sectors requires adopting economic reforms and/or industrial policies that may change existing institutions and rules of the game and can spur protest by powerful groups within society that do not benefit (enough) from them. These protests affect the political stability and cause transition costs for ruling elites. Hence, if powerful groups resist sector-specific policies, adopting and enforcing these policies becomes too costly for ruling elites and they are abandoned (Behuria, Buur, and Gray 2017, 515; Khan 2010, 6).

In sum, high levels of vulnerability and contestation can threaten the political survival of ruling elites. The latter are therefore likely to support productive sectors that increase their power, influence, and wealth. Political settlements can decrease the level of contestation within the ruling coalition (at least temporarily) and facilitate the promotion of industrial policies in sectors that ruling elites consider important for their political survival. The following section discusses how the relative power of sector-specific economic actors vis-à-vis the ruling elites affects the promotion of productive sectors.

The Relative Power of Economic Actors in a Sector

The second dimension of the distribution of power within society refers to the relations between ruling elites and economic actors. The relative power of productive entrepreneurs vis-à-vis ruling elites is shaped by three factors: 1) the ownership structure within a sector, 2) the level of TCs of entrepreneurs involved in that sector, and 3) their holding power.

First, it is important to study a sector's ownership structure over time to trace how the ownership structure changed and how this affected the relations between ruling elites and entrepreneurs. Tracing ownership provides insights into how firms have been/are linked to the political elites. The stronger the links between the owners of firms and the ruling elites, the greater are their chances to influence policy reforms. In the case of the Mozambican cashew sector, studying the ownership structure requires gathering information on who the owners of cashew processing plants were during the periods of colonialism (before 1975), nationalisation (1975-1991), privatisation, liberalisation and the industry breakdown (1991-2001), rehabilitation (2002-2009) and consolidation (2009-today).

Second, ruling elites are more likely to support sectors with firms with high(er) levels of technological capabilities because there is a realistic chance that these firms will profit from state support by investing policy-induced subsidies in building their TCs. In turn, ruling elites benefit from successful productive sectors because they increase the state's tax base, create employment and possibly opportunities for informal rent creation. In other words, the level of experience and capabilities of productive entrepreneurs determines whether political support pays off or not (Whitfield et al., 2015, p. 103). Studying the level of TCs of firms involves looking at their investment, production and linkage capabilities, the already existing physical infrastructure, e.g. production plants, and the availability of a trained work force.

Third, economic actors within a sector have varying levels of holding power. Individuals or groups deploy their holding power to make the most beneficial deal, e.g. by raising claims to ownership or income flows, such as policy-induced subsidies (Khan 2010, 6). The following section conceptualises the notion of holding power and discusses its usefulness as an analytical tool for analysing why the Mozambican cashew sector received political support.

Conceptualising Holding Power

Holding power refers to *'the capability of an individual or group to engage and survive in conflicts*' (Khan 2010, 6) over resources and opportunities with the aim to maintain or secure a desired result. Holding power may be linked to formal positions or institutions within the state or the political parties. However, individuals or groups can also challenge policy choices or reforms using informal channels (Behuria, Buur, and Gray 2017, 520; Gray and Whitfield 2014, 12). Particularly in clientelist political settlements, sources of holding power often rest outside of formal institutions, e.g. in informal networks.

Khan argues that power refers to the distribution of power within society. In other words, power needs to be understood in relative terms. The outcomes of conflicts, e.g. related to economic reforms, are determined by the relative power rather than the absolute power of actors involved in the conflict (Khan 2010, 20). Conceptualising power as the distribution of power also implies that power is not static but evolves over time. For instance, economic reforms or the implementation of industrial policies may increase the power of specific economic actors at the cost of other actors (Dyer Jarnholt 2020, 96).

Holding power is a useful analytical tool for analysing why the Mozambican cashew sector received political support because it establishes a link between the power of political and economic actors, formal and informal institutions through which power may be channelled, and the outcomes of conflicts – or in the case of this thesis, the outcomes of a contested sector reform that was adopted in 1999 (Khan 2010, 6). In order to trace how power, institutions and policy outcomes were connected in the Mozambican cashew sector at a specific point in time, it is important to unpack the components that shaped the holding power of the cashew processing industry, factory workers, cashew producers and exporters of raw cashew nuts when the sector was reformed.

The holding power of groups or individuals, or their ability to engage and survive in conflicts, is shaped by two factors. On the one hand, the ability to impose costs on others. On the other hand, the ability to absorb costs. In the case of the Mozambican cashew sector, the ability to impose costs on others could involve pushing producer prices down or threatening to lay off factory workers. For instance, the cashew processing industry could threaten to temporarily close factories, leaving thousands of workers without jobs, to exert pressure on the Mozambican Government with the aim to maintain the protection of the processing industry.

The ability to absorb costs could refer to being able to pay higher producer prices and mobilising networks to secure raw cashew nuts for processing in periods during which the supply of raw nuts is scarce.

The ability to absorb and impose costs is determined by the economic strength and organisational capacity of economic actors. On the one hand, the economic strength of productive entrepreneurs relates to 1) providing income for the population, e.g. to small-scale farmers and by creating formal employment; 2) contributing to government revenues, e.g. through taxes and foreign exchange from exports; and 3) financing the ruling coalition, e.g. by providing party funds (Gray and Whitfield 2014, 20; Whitfield and Therkildsen 2011, 24).

If the ruling coalition can function without the financial support of domestic entrepreneurs or the latter engage in sectors that are not key economic pillars, it is unlikely that ruling elites will promote the sector(s) they operate in (Gray and Whitfield 2014, 22).[46] Economically powerful groups will receive more attention by ruling elites during policy formulation and implementation (Whitfield et al. 2015, 101). In return, powerful entrepreneurs can also push the government to pursue stable policies, secure investments, and provide public goods that produce long-term benefits (Whitfield and Therkildsen 2011, 24–26).

On the other hand, the organisational capacity of productive entrepreneurs determines their ability to absorb costs afflicted on them by other actors and to impose costs on others. This includes the ability to organise and mobilise support, e.g. among farmers, factory workers, or civil society organisations, to set up a demonstration or a strike as well as the ability to establish strong relationships with political elites and with other entrepreneurs in the sector (Gray and Whitfield 2014, 20). A higher level of coordination among entrepreneurs increases their ability to aggregate interests and to forward their demands vis-à-vis ruling elites, e.g. through business associations (Whitfield and Therkildsen 2011, 28).

Organisational capacity also relates to mobilising ideologies, ideas, and symbols of legitimacy as narratives to legitimise specific policy decisions (Behuria, Buur, and Gray 2017, 519–20). Ideas and ideologies can be powerful if they are used to shape the actions and beliefs of others (Lavers 2018, 9). Particularly in Sub-Sahara African countries that underwent a shift from a

[46] State funding can also come from other sources, e.g. foreign aid, if it is channelled through the state budget, import and export taxes, royalties and corporate taxes from extractive industries, the marketing of agricultural commodities through the state, businesses run by the ruling party, or from foreign capitalists. This limits the potential political influence of productive entrepreneurs (Gray and Whitfield 2014, 20–22).

socialist to a free-market economy, e.g. Mozambique, mobilising ideologies was crucial to block or legitimise reforms.[47] The legitimacy of economic actors to claim state support and protection as well as the ideologies they draw on to mobilise supporters are anchored in a country's history (Carstensen and Schmidt 2016, 322–25; Lavers 2018, 9; Whitfield and Therkildsen 2011, 19, footnote 27). The claims of economic actors that operate in sectors that were historically important in terms of generating income for the population, employment, and foreign exchange therefore tend to benefit from a high(er) level of legitimacy.

To sum up, Khan's conceptualisation of holding power centres on the ability of actors to engage and survive in a conflict, e.g. a contested sector reform. The ability to survive in conflict is shaped by the capacity of actors to absorb and impose costs by deploying economic resources and/or mobilising networks, ideologies and symbols of legitimacy. Chapter 7 applies the concept of holding power as an analytical tool to explain why the Mozambican cashew sector received political support. More particularly, it explores how the economic strength and organisational capacity of the actors involved in the reform of the cashew sector shaped their ability to engage and survive in conflicts as well as their capacity to absorb and impose costs.

The following section discusses how international financial institutions may shape ruling elites' decisions to promote productive sectors.

The Role of International Financial Institutions

Next to the distribution of power within society, external actors may influence whether and how political elites promote specific productive sectors. International financial institutions (IFIs) are not part of the ruling coalition, however, they may shape the parameters in which ruling elites take decisions related to promoting productive sectors. For instance, the ruling coalition in Mozambique depended on financial support from the IFIs and donors to avoid an economic collapse and to secure its political survival in the 1990s (Whitfield et al. 2015, 124). During this period, sanctions from IFIs were a realistic threat for Mozambican politicians that influenced the Government's policy decisions towards the cashew sector.

[47] This issue is touched upon on in the analysis of the political settlement in the Mozambican cashew sector in chapter 7 of the thesis.

The following section discusses how the study of policy outcomes may provide insights into the relative power of economic actors.

Policy Outcomes as Indicators of Holding Power

Analysing the distribution of power within society is important to understand why the Mozambican cashew sector received political support and why political elites adopted a specific set of industrial policies with benefits for specific actors in the local cashew value chain. The outcomes of policy decisions may reflect the distribution of power within society and may therefore be important indicators of the relative power of the actors involved in a local value chain at a specific point in time (Behuria 2017, 518). Often, states 'pick winners' when intervening in productive sectors that benefit from specific subsidies and/or informal flows of rents. This thesis therefore looks at the policy measures of the Mozambican cashew law, its beneficiaries and the law's short- and mid-term effects. These effects also include opportunities for formal and informal rent creation for members of the ruling elite or lower level factions of the ruling coalition.

This section developed an analytical framework for societal power relations that guides the analysis of why and how the Mozambican Government promoted the cashew sector by adopting protectionist industrial policies in Chapter 7. The following section discusses three conditions for the effective enforcement of industrial policies in low-income countries.

Three Conditions for the Effective Enforcement of Industrial Policies

Industrial policies can be a source of knowledge for firms in low-income countries if they aim to promote the acquisition of technological capabilities among local value chain actors and if they are enforced effectively. The effective enforcement of industrial policies refers to the productive use of rents, i.e. investing rents in building firms' technological capabilities. The productive use of rents plays a crucial role for the economic development of late industrialising countries in Sub-Saharan Africa. Rents can be created by policy-induced conditional subsidies or informal off-budget transfers and can facilitate and accelerate technological learning among firms at the lower end of GVCs (Gray and Whitfield 2014, 14; Khan 2000, 47–48).

The effective enforcement of industrial policies depends on three conditions: 1) mutual interests between political elites and domestic entrepreneurs; 2) the existence of pockets of efficiency within the state bureaucracy; and 3) learning for productivity, i.e. entrepreneurs invest rents in building technological capabilities (Whitfield et al. 2015, 18–22). If these three conditions are in place, industrial policies – and the institutions that implement them – can be a source of learning for local firms in low-income countries, e.g. by providing sector-specific information and technical assistance.

Mutual Interests between Ruling Elites and Productive Entrepreneurs

Ruling elites only support productive sectors if their interests overlap with the interests of the economic actors in that sector. Hence, the effective enforcement of industrial policies in any given sector depends on the relations between economic actors and the ruling elites (Behuria, Buur, and Gray 2017, 517).[48] Close relations between these two sets of actors only emerge if they have mutual interests. Mutual interests are important because productive sector policies must tackle the sector-specific barriers to competitiveness and technological learning as well as collective action and coordination problems between actors within the sector and between the sector and the state. Therefore, entrepreneurs or business associations need to be involved in the process of policy formulation. This raises the commitment of entrepreneurs throughout implementation, e.g. actually investing in building their TCs or engaging in new economic activities. Despite a poor overall business and institutional environment in states with clientelist PS, mutual interests can emerge that promote technological learning among firms (Moore and Schmitz 2008, 11; Whitfield and Therkildsen 2011, 27–28).

The balance between the interests of ruling elites and of productive entrepreneurs is fragile and can shift from mutual dependence to 'predatory state' or 'state capture' if one side gains more than the other (Moore and Schmitz 2008, 34–37). For instance, in a scenario of state capture, the political influence of entrepreneurs is too high so that the enforcement of specific policies and institutions that aim to promote technological learning becomes impossible (Whitfield et al. 2015, 102). Industrial policies are likely to have the best outcomes if economic actors are strong enough to exert some influence on policy-making and implementation due to

[48] This argument draws on the literature on collaborative business state relations Maxfield and Schneider (1997); Doner and Schneider (2000), Sen and te Velde (2009; 2012), Bräutigam, Rakner, and Taylor (2002).

their economic strength and/or organisational capacity. At the same time, they depend on ruling elites to provide infrastructure, access to finance, labour, and resources and are not able to undermine the state's capacity to enforce learning and compliance with national standards. Put differently, productive entrepreneurs and ruling elites must need each other to make industrial policies work (Moore and Schmitz 2008, 10; Whitfield et al. 2015, 102).

This type of mutually dependent relationship is more likely to emerge if the level of contestation among ruling elites is relatively low. In fragmented ruling coalitions, economic actors are likely to have close relations to only one faction of the ruling coalition and their degree of political influence depends on the relative power of that faction (Whitfield et al. 2015, 102). Hence, the ability to exert political influence of economic actors depends on whether they are linked to a faction of the ruling coalition with relatively high power - or their ability (and flexibility) to establish relations with whichever faction of the ruling coalition that currently holds power.

Pockets of Efficiency within the State Bureaucracy

Efficient bureaucratic entities can emerge even in states with weak institutions.[49] Pockets of efficiency (PoE) (Crook 2010; Geddes 1990; Roll 2011; 2014a; Therkildsen 2008) are

> *'public organisations that are reasonably effective in carrying out their functions and in serving some conception of the public good, despite operating in an environment in which most agencies are ineffective and subject to serious predation by corruption, patronage, etc.'* (Leonard 2010, 91).

They provide effective services and can mediate between the interests of political elites and productive entrepreneurs. Effectiveness needs to be understood in relative terms: PoE are effective relative to the context in which they operate but may be ineffective compared to international standards (Roll 2014b, 368).

PoE receive more resources and autonomy, are headed by an ally of the ruling elite and are protected against pressures for rent-seeking by factions of the political elite (Kjær 2015, 231; Roll 2011, 7). Insulation from the prevailing system of rent-seeking and hiring political clients is

[49] Roll (2014b); Schneider (1992); Leonard (1991); Daland (1981); Grosh (1991); Geddes (1990); Evans (1992).

a key feature of PoE. It permits a concentration of expertise, scarce resources, and commitment needed to change the status quo (Geddes 1990, 218; Roll 2011, 17).

PoE emerge because ruling elites have an interest that specific public services are delivered effectively. Creating PoE requires making institutional changes that might alter the existing allocation of benefits and state resources. Ruling elites or the dominant factions of the ruling elite therefore need to have control over rent-seeking opportunities and the allocation of resources and need to be able to fight off distributional demands by other factions or individuals within the ruling elite (Whitfield et al. 2015, 100). The emergence of PoE in the state bureaucracy is more likely if the level of contestation within the ruling coalition is low and excluded factions are weak. This allows political elites to engage in longer term development strategies, including the creation of PoE to promote specific sectors (Whitfield et al. 2015, 97).

Pockets of efficiency are important for successful industrial policy enforcement. Ruling elites design and adopt industrial policies. However, bureaucrats are responsible for the effective implementation of these policies and may take far-reaching decisions related to policy implementation while doing so. Bureaucrats that work in PoE therefore need a good understanding of the sector and sector-specific technical knowledge to ensure that firms in that sector have access to the technologies and skills that are needed to compete globally once protections are lifted (Lall 1992, 182–83; 1993, 748–49; Whitfield and Therkildsen 2011, 29–30). In sum, a common understanding of the challenges of a particular sector is required, both, among economic actors and ruling elites as well as among economic actors and state bureaucrats.

Learning for Productivity

The third determinant for successful industrial policy enforcement relates to how firms invest policy-induced rents. Firms with a higher level of TCs are more likely to achieve competitiveness in new technologies or in existing technologies and therefore have an incentive to invest rents in technological learning. Their risk of investing rents in building TCs is smaller than for firms with lower capability levels. Low-capability firms are therefore unlikely to use rents to increase productivity unless they are forced to do so (Khan 2010, 69–75). However, even firms with higher capabilities may not use rents productively. Increasing capabilities is a difficult and costly long-term investment. Without state intervention, local entrepreneurs may stick to ‘safer’, low

productivity technologies instead of 'riskier', high productivity technologies (Khan 2000, 48; Whitfield et al. 2015, 103). Moreover, productive entrepreneurs are more likely to invest policy-induced rents in learning if they perceive a sector as profitable due to existing government subsidies and/or the availability of qualified work force (Amsden 1989, 23).

The level of technological capabilities that exists in a country or a sector depends on a country's previous manufacturing experience. It makes a difference whether a country has been primarily involved in processing specific primary products or can draw on a more comprehensive manufacturing experience in various sectors. Previous manufacturing experience has an effect on the availability of a qualified work force and increases the expectations of investors that future manufacturing activities will succeed (Amsden 2001, 15).

Whether firms use rents to upgrade their economic activities depends on their level of TCs and on the willingness and capacity of the state to enforce learning among firms in return for government subsidies. Ruling elites follow the same logic as productive entrepreneurs: They are more likely to support sectors with entrepreneurs with high(er) capabilities because there is a higher chance that political support will pay off (Whitfield et al. 2015, 103).

Table 3.4 summarises the determinants of firm-level learning through the effective enforcement of industrial policies.

Table 3.4. Determinants of Firm-Level Learning Through Industrial Policies

Theoretical approach	Source of Learning	Key (groups of) actors	Factors that shape firm-level learning	Example of a learning mechanism
Political settlements approach	• Effective enforcement of industrial policies	• Ruling elites • State bureaucrats • Productive entrepreneurs	• Mutual interests between ruling elites and productive entrepreneurs • Pockets of efficiency within the state bureaucracy • Learning for productivity	• The National Cashew Institute organises a conference on state-of-the-art cashew processing

Source: the author

To sum up, the promotion of productive sectors in low-income countries is closely linked to the distribution of power within society. The analytical framework for studying the distribution of

power within the Mozambican cashew sector includes four dimensions. The first dimension centres on the relative power of groups within and outside the ruling coalition. The second dimension focuses on the relative power of sector-specific economic actors vis-à-vis ruling elites. The third dimension looks at the role of international financial institutions in shaping the decision-making context of ruling elites. The fourth dimension relates to the outcomes of policy decisions as indicators of the power of economic actors. In this thesis, this involves an analysis of the policy measures of the Mozambican cashew law, its beneficiaries and the law's short- and mid-term effects. This analytical framework is used to explain why and how the Mozambican Government supported the cashew sector in Chapter 7 of this thesis.

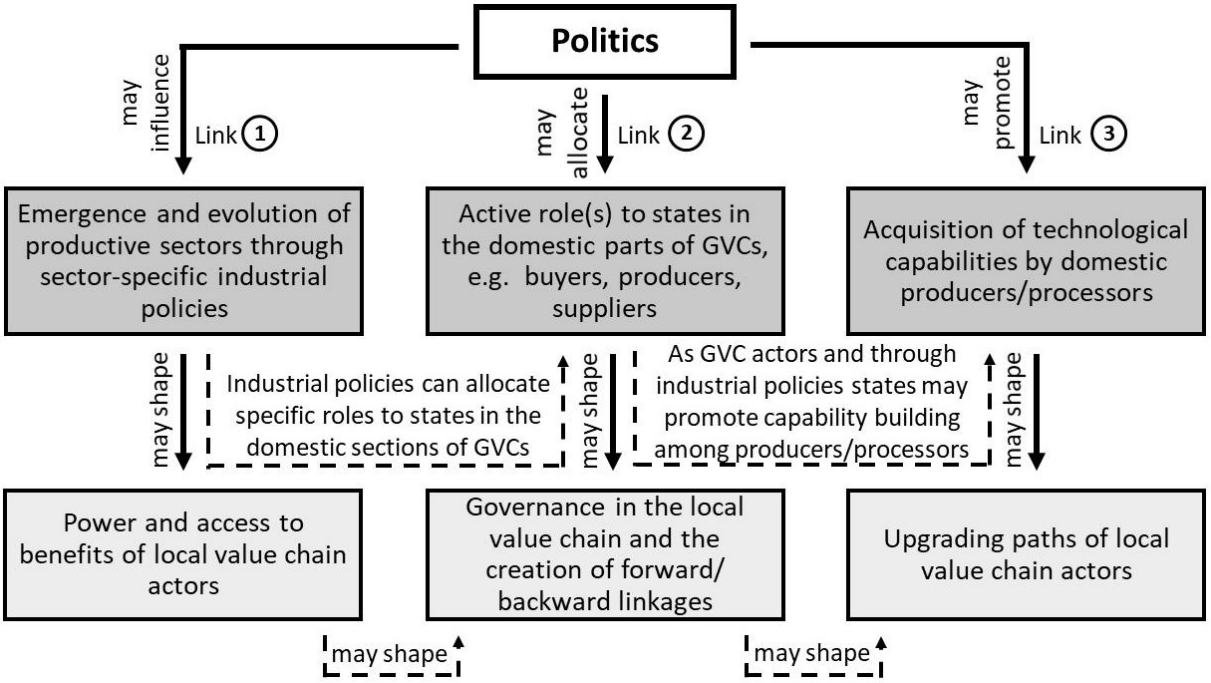
Industrial policies – and the institutions that implement them – can be a source of learning for local firms in low-income countries, e.g. by providing sector-specific information and technical assistance, if they are enforced effectively. The effective enforcement of industrial policies depends on three factors: mutual interests between political elites and domestic entrepreneurs, pockets of efficiency in the state bureaucracy and learning for productivity. Chapter 9 discusses whether the Mozambican cashew law and the National Cashew Institute (INCAJU) effectively promoted capability building among cashew processors in Mozambique.

The following section links the political settlements framework and global value chain analysis to develop a framework for analysing how politics affects the emergence of productive sectors in Sub-Saharan Africa as well as the governance of local value chains and the upgrading paths of local value chain actors.

3.3 The Politics of Productive Sector Promotion and Upgrading at Firm-Level

This section teases out three links between the politics of Sub-Sahara African Governments the governance of local value chains as well as firm-level upgrading (see Figure 3.3). The solid arrows in Figure 3.3 point out the three links which are explained in more detail underneath. The dashed arrows illustrate how each link affects the following link in the figure.

Figure 3.3. The Politics of Upgrading in Local Value Chains



Source: the author

Governments May Influence the Emergence and Evolution of Productive Sectors

GVC analysis centres on already existing productive sectors in low-income countries that are part of GVCs. However, productive sectors do not simply appear. As discussed above, productive sectors in low-income countries emerge and survive over time if they receive political support. In other words, governments enable productive sectors when it fits their political and economic priorities. They are likely to support those sectors that are important for their own political survival because they mobilise voters or generate rents (Whitfield et al. 2015).

A common tool to support productive sectors are industrial policies. As discussed in section two of the theoretical framework, the power relations between ruling elites and economic actors in a sector may affect whether governments adopt industrial policies to promote that sector, which type of policies they adopt, and to what extent governments enforce their implementation effectively. Industrial policies can in- or decrease the power of specific actors in a local value chain by giving them access to benefits. This affects the governance structure of the local value chain.

Industrial policies create benefits and opportunities for upgrading for some actors in the local value chain at the cost of others (Vicol et al. 2018, 34–35). The distribution of benefits and upgrading opportunities is a political process that creates inequalities that need to be managed. Political elites may concentrate upgrading opportunities and benefits among loyal firms, government, party-owned or military-owned firms or specific actors within the local value chain that are important for their political survival, e.g. small-scale producers or traders. Or they may distribute opportunities more evenly to include a broader range of economic groups (Behuria 2018, 8).

In sum, the government of a country may allocate facilitative and redistributive governance functions to the state in a GVC. States exercise facilitative governance by actively creating the conditions for the genesis and evolution of GVCs at the local level. They exercise redistributive governance by shaping the distribution of rents and benefits among actors in a value chain through industrial policies. Hence, who wins and who loses from participating in a value chain is determined by both, market dynamics at the GVC level and government strategies at the domestic level (Alford and Phillips 2018, 102–3). The governance of value chains at domestic level can therefore play out differently across countries even though the relations between international buyers and producers and/or processors in low-income countries follow a similar pattern.

Governments May Allocate Active Roles to States within Local Value Chains

States not only exercise facilitative or redistribute governance within local value chains, they often become value chain actors themselves. Horner (2017, 2) argues that states (e.g. through government institutions, state-owned enterprises or public procurement) may adopt different roles[50] in GVCs. These roles go beyond the role of a facilitator that has been promoted by international organisations such as the World Bank (Cattaneo et al. 2013) or the World Trade Organisation (Elms and Low 2013) in their policy recommendations for low-income countries. Next to being facilitators, states may become actively involved in GVCs by adopting the roles of regulators, producers, or buyers. In the case of the cashew sector in Mozambique, the National Cashew Institute (INCAJU) took on the role of a supplier of seedlings and chemicals as explained in Chapter 5 of this thesis. In turn, participation in GVCs may influence states' future policy

[50] Roles relate to the activities that states take over in a value chain (Horner 2017, 5).

choices (Horner 2017, 4). The distinction between the vertical dimension of GVCs (firms in a GVC) and the horizontal dimension of GVCs (embeddedness of GVCs in domestic and/or global political and institutional contexts) is therefore not always as clear cut as some of the GVC literature suggests (e.g. Gereffi, Humphrey, and Sturgeon 2005).

By adopting active roles in GVCs, states become part of the chain's relational structure and may shape the relations with other actors in the local value chain. States' active involvement in domestic value chains as producers, suppliers or buyers may also have effects on the creation of forward or backward linkages as discussed in Chapters 8 and 9 of this thesis.

Governments can make a purposeful choice which role in the local value chain the state takes on before adopting industrial policies, e.g. depending on the potential opportunities for rent creation a specific role offers. Or, they may adopt a role at a later stage to accumulate rents or to get access to financial benefits. As the analysis of the political settlement in the cashew sector in Chapter 7 and the discussion of the effects of the Mozambican cashew law in Chapter 9 show, the incentives for adopting a law and for continuing with a law may differ.

Governments May Promote Technological Capability Building among Local Value Chain Actors

GVC scholars focus on (international) lead firms as a potential source of learning for local firms at the lower end of GVCs. However, governments may also promote the acquisition of technological capabilities among local value chain actors. On the one hand, industrial policies and the institutions they establish may be a source of learning for local producers and processors if they aim to promote capability building among firms. For instance, public institutions may induce learning through research and development (R&D), by transferring information related to up-to-date technology and market requirements to entrepreneurs, by establishing contacts to buyers or by supporting firms with acquiring certificates. The effectiveness of industrial policies depends on the three conditions discussed above.

On the other hand, the industrial policies that governments adopt may allocate active roles to states in GVCs. If states become value chain actors themselves, e.g. suppliers of agricultural inputs to farmers, they may transfer sector-specific knowledge to the other value chain actors they interact with or assist them with building capabilities.

To sum up, this section aimed to link the political settlements framework and the literature on upgrading in GVCs by presenting three ways in which governments affect the governance of local value chains as well as the upgrading paths of local value chain actors. First, governments may influence the emergence and evolution of productive sectors by adopting sector-specific industrial policies. Industrial policies shape the relative power and access to benefits of economic actors in local value chains. Second, governments may allocate active roles to states in local value chains. Industrial policies and the active involvement of states in domestic value chains may shape the governance structures of local value chains and the creation of backward and forward linkages. Finally, governments may promote capability building among local producers and processors. On the one hand, industrial policies and the institutions they establish may transfer knowledge to local value chain actors if certain conditions are met. On the other hand, states may provide technical assistance to other value chain actors they interact with if they become value chain actors themselves. The three links discussed in this section guide the discussion of the politics of productive sector promotion and upgrading in the Mozambican cashew processing industry in the Conclusion of the thesis.

The following section provides some concluding remarks and sets forth how the different components of this theoretical framework are applied in the core analytical chapters of the thesis.

3.4 Conclusion

This chapter presented the theoretical framework for studying how politics at national and international levels shaped the promotion of the Mozambican cashew processing industry and firm-level upgrading among cashew processors. The framework is structured along three sections. Section one laid out the theoretical foundations for studying firm-level upgrading in the cashew GVC, particularly, the upgrading opportunities and learning channels that the cashew GVC offers for Mozambican cashew producers and processors. Section two developed an analytical framework for studying why the Mozambican cashew sector received political support. It further discussed three conditions for the effective enforcement of industrial policies. Section three linked the political settlements framework and the literature on upgrading in GVCs by teasing out three ways in which domestic politics shape the emergence

of productive sectors, the governance of local value chains and the upgrading paths of local value chain actors. The theoretical framework broadens the analytical focus of GVC analysis by including domestic politics and state-business relations, next to the study of firms. It thereby brings politics into the study of upgrading in GVCs

The different components of the theoretical framework are applied in the core analytical chapters (Chapters 6 to 9) and the Conclusion of the thesis. The theoretical foundations on upgrading in GVCs guide the analysis of the cashew GVC in Chapter 6 and inform the discussion of learning channels of Mozambican cashew processors in Chapter 9. Chapter 8 draws on the operationalisation of firm-level upgrading in GVCs to study the upgrading trajectories of the Mozambican cashew industry. The analytical approach for studying productive sector promotion is used to explain why the Mozambican Government supported the cashew sector in Chapter 7. Chapter 9 assesses the effectiveness of the Mozambican cashew law using the three criteria for effective industrial policy enforcement. The Conclusion of the thesis discusses how Mozambican politics shaped the governance in the local cashew value chain, the upgrading paths of cashew producers and processors, and the creation of backward linkages.

The following chapter presents the methodological approach of the thesis. Next to presenting the research procedure and research data, the chapter includes methodological notes on how to study political settlements at sector level as well as technological capabilities and learning channels at firm level.

4 Methodology

This chapter presents and discusses the methodological approach used to carry out this research project. On the one hand, it seeks to ensure reliability by elucidating the research procedure of this study and by providing additional material, such as the firm survey used for gaining firm-level data, the interview guide, and the code book used for coding interview material. On the other hand, this chapter presents the different sources of information that this study draws on to ensure validity and discusses some methodological limitations.

This thesis mainly draws on the political settlements (PS) framework and the research on upgrading in global value chains (GVCs). Both strands of literature are rooted in heterodox economics with specific methodological implications (Lawson 2005). Finding answers to the research questions that this study poses requires in-depth knowledge on the Mozambican cashew sector and country-specific contextual conditions. A large-N quantitative, mathematic-deductive method is not suitable to collect this type of detailed information (Basole and Rammarain 2016). This study therefore uses a qualitative methodology to explore how politics shaped the re-emergence of the Mozambican cashew sector after its breakdown, the governance of the local cashew value chain and the upgrading paths of cashew processors.

The remainder of this chapter is structured along eight sections. Section one elucidates why this research project is designed as a case study, which type of case it studies and how it aims to contribute to theory development. Section two presents the criteria for selecting the cashew processing sector as its unit of analysis. Sections three, four and five are methodological notes on how to study political settlements at sector level as, technological capabilities (TCs) and learning mechanisms at firm level. Section six presents the data sources and explains the process of collecting, managing and analysing research data. Section seven reflects on the methodological limitations of the study. The final section summarises the data types and methodological approaches used to answer the working questions of the thesis.

4.1 Case Study Design and Theory Development

This thesis is designed as a single case study of the Mozambican cashew sector. Using a case study approach is particularly suitable to study phenomena in depth and within their real-world context. The aim of this study is to find answers to explanatory research questions, i.e. ‘how’

and 'why' questions. It seeks to trace the causal links between events over time and to contribute to theory building (Yin 2014, 10). A case studies allows for *"a detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalizable to other events"* (George and Bennett 2005, 5).

The choice of a case study design was also driven by the current state of research and availability of data on the Mozambican cashew sector. Some literature on the political economy of the cashew sector in Mozambique in the 1990s, the organisation of the cashew value chain today as well as general data related to cashew production and processing is available. However, there are no studies that specifically focus on how politics shaped the promotion of the cashew sector and upgrading in the local cashew value chain. In addition, firm-level data on cashew processors in Mozambique did not exist. Conducting a case study was therefore the most suitable approach to study the Mozambican cashew sector from a political economy perspective and when being faced with an information-poor environment (i.e. limited availability of secondary literature and primary data on the specific issues under study) (Eisenhardt 1989, 549; Gerring 2007, 40, 60).

As discussed in the introduction to this study, this thesis treats the Mozambican cashew sector as an outlier. It appears to be a successful case of agro-processing for export compared to other agricultural sectors in Mozambique in particular, and Sub-Saharan Africa in general. Using Gerring's (2010) typology of case studies[51], the Mozambican cashew sector is a deviant case. This study seeks to explain why the Mozambican cashew sector deviates from theoretical expectations and aims to tease out new explanations and/or propositions that may be applied to other outlier cases (Gerring 2010, 656; Levy 2008, 13).

The unit of analysis of the thesis is the Mozambican cashew processing sector. The overall research question combines two sub-questions. First, it looks at how politics shapes export-driven industrialisation with a focus on why the Mozambican cashew sector received continued political support. Second, it asks how politics shaped upgrading in the Mozambican cashew industry. Hence, in a broader theoretical sense (Lund 2014, 229–30), this study is a case of the political economy of export-driven industrialisation and upgrading in GVCs.

[51] The typology developed by Gerring (2010) is based on case selection techniques. The typology by Levy (2008) cited further below distinguishes between four cases based on their purpose: idiographic, hypothesis-generating, hypothesis-testing and plausibility probe case studies.

The two events are studied in Chapters 7 to 9. Each of the three chapters seeks to establish relationships between causes and effects of events. Chapter 7 explains why the Mozambican cashew sector received political support in the 1990s using the political settlements framework. It reconstructs a complex political decision-making process and its effects. Chapters 8 and 9 are more inductive in nature. Chapter 8 traces the upgrading paths of Mozambican cashew processors. Chapter 9 centres on the specific learning channels or learning mechanisms[52] that cashew processing firms in Mozambique use(d) to acquire TCs and why. In other words, it *'peer[s] into the box of causality to locate the intermediate factors lying between some structural cause and its purported effect'* (Gerring 2007, 45).

In short, Chapter 7 applies the political settlements framework to a new case with the aim to illustrate the framework's core theoretical arguments, to demonstrate its empirical relevance, and to refine the operationalisation of its key variables. In Levy's (2008, 5–7) case study typology this can be considered as a plausibility probe. The causal mechanisms that determine learning at firm-level are less clear. Chapters 8 and 9 therefore seek to contribute to the process of theory construction by exploring the learning processes of cashew processing firms in Mozambique.

The following section presents the case selection criteria of the thesis.

4.2 Case Selection Criteria

The selection of the case study was based on seven criteria. These criteria emerged from a review of the literature on productive sectors in Mozambique, interviews with development practitioners, researchers, and business representatives during a scoping trip to Mozambique in September 2017, and theoretical and practical considerations. This section briefly outlines the seven case selection criteria and explains in how far the cashew sector meets them.

1) Export orientation: There is evidence that exporting firms in low-income countries are more efficient and acquire higher levels of TCs to be able to be compete on the global market (Biggs, Nasir, and Fisman 1999; Cruz et al. 2014; 2017). GVCs are the primary mode of

[52] The terms learning channels and learning mechanisms are used interchangeably in this thesis.

engagement with the world and a potential accelerator for development of late industrialising countries, such as Mozambique. They create opportunities to participate in exports by linking firms in low-income countries with limited initial resources to firms with (more advanced) complementary resources across the globe (Whittaker et al. 2010, 447). Excluding primary exports and exports related to megaprojects in the metal industry[53], Mozambique's major exports stem from the agro-industry (Sutton 2014). In 2018, Mozambique's major agricultural exports were tobacco, sugar, bananas, prawns and lobster, cashews and cotton (Instituto Nacional de Estatística 2018).

Mozambique used to be the world's largest cashew producer in the 1970s and had considerable processing capacities. Until 1982, cashew was Mozambique's biggest export. After the breakdown of the sector at the end of the 1990s exports collapsed but resumed in the mid-2000s. The Mozambican cashew sector is a steadily growing sector that has recently attracted increasing foreign investments. Mozambique sells cashew kernels to multiple end markets, including markets with high food-safety standards, such as the North American and the European market. The rapidly growing global demand for cashew kernels makes it a high potential industry.

2) Manufacturing sector/in-country processing: Promoting manufacturing exports is considered an important path to employment creation by adding value to locally sourced commodities and building linkages throughout the local economy (Balchin et al. 2016; United Nations 2017). Increasing manufacturing exports decreases the vulnerability to a slowdown in commodity exports and increases employment creation and capability-building among firms (Saxegaard 2008, 390). Manufacturing firms differ from exporters of raw commodities in that they acquired substantial TCs to increase the value of raw materials.

Mozambique was the first African country to set up a large-scale cashew processing industry and it still has the largest cashew processing ratio in Sub-Saharan Africa (Rabany, Rullier, and Ricau 2015).

[53] The level of integration of megaprojects, such as the aluminium smelter MOZAL, into the rest of the economy is low, resulting in enclaves with little forward and backward linkages to the local economy and formal employment creation. Due to a 'missing middle' of SMEs in Mozambique's manufacturing sector, the possibilities to create linkages to mega-investments in the natural resource sector are limited, reducing the extractive sector's potential to function as a driver of structural transformation (Sousa Cruz et al. 2014; Buur 2014; Cruz et al. 2017).

3) High societal impact: While agro-processing sectors tend to have a higher societal impact in terms of employment and income creation than extractive sectors, there are major differences between sectors. Cashews in Mozambique are not grown on plantations but by thousands of small-scale farmers. Collecting and selling cashew nuts is considered *'part of the nation's rural welfare system'* (Aksoy and Yagci 2012, 16). Cashew processing is labour intensive and creates more than 10.000 jobs in rural areas where few other sources of formal employment are available. In total, the sector provides an income to more than 1 million families.

4) Increase in firms' levels of technological capabilities: Among others, this thesis seeks to find out how agro-processing firms in Mozambique acquired the TCs that were required to access and to remain competitive in a GVC. It therefore focuses on industries in which the level of TCs has increased over time.

   The Mozambican cashew processing sector broke down at the end of the 1990s and was revived in the mid-2000s. Since then, Mozambican processors adapted the technological equipment used to process cashew nuts, invested in food safety certificates, and diversified their buyers to remain globally competitive and to reduce their risks. In order to do so, processors increased their technological capabilities.

5) Local ownership: Growth in number, size and capabilities of locally owned firms is a core facet of structural transformation in low-income countries. Local firms include firms whose owner is an official citizen of Mozambique and firms whose owners have operated in Mozambique for a considerable amount of time and consider Mozambique their home – even if they do not hold a Mozambican passport. Indigenous-owned and diaspora-owned local firms have a similar level of embeddedness in a country. Attracting foreign firms that operate and export from within a country may be a source of capital, employment and knowledge. However, technological spillovers only emerge if local firms exist that are able to absorb industry-specific information and knowledge (Staritz and Whitfield 2017, 3).

   Sectors with local ownership have a greater potential to boost economic development. Although this study does not explicitly focus on locally-owned firms, local ownership was a relevant case-selection criterion. Since independence, the Mozambican cashew industry always included local ownership. Today, it includes a mix of foreign and locally owned

companies. The most successful and technologically advanced cashew processor in Mozambique is currently a local company.

6) Availability of previous research: The period of field research in Mozambique was limited to three months in total. The main focus of the research stay in Mozambique was on gathering data on state-business relations, the current state of the sector under study, notably on firms, their upgrading paths and their current levels of TCs. Answering the working questions of the thesis required detailed historical data, in particular information about the evolution of the sector under study and the sector-specific political settlement as well as about firms' capabilities. The availability of previous research was therefore an important criterion.
   Previous scientific research and a number of donor studies, industry reports, conference presentations and consultancy reports on the Mozambican cashew sector are available, allowing for a combination of desk research and field research. These publications include historical as well as current data and analyses of the sector.

7) Accessibility and safety: The final case selection criterion was that factories were located in safe areas and were accessible. Mozambique witnessed a series of violent conflicts between the opposition party Mozambican National Resistance (RENAMO) and the ruling party Mozambique Liberation Front (FRELIMO) between 2013 and 2017. The conflict between the two parties was settled with a peace deal in late 2017. Since the end of September 2017 attacks by Islamist militants have become more frequent in the far north of Mozambique, close to the border with Tanzania (International Crisis Group 2020). These attacks pose a threat to the population of Cabo Delgado province and to potential research in that area. While Cabo Delgado is an important cashew-producing region, cashew processing factories are mainly located in Nampula Province.[54]
   Next to safety-related factors, accessibility in terms of transport connections to factories, receiving a research permit, and permits to visit factories was an important organisational criterion. Some cashew factories are located in very small villages but close to public roads and are accessible by public transport or taxi.

[54] Map 4.1 below gives an overview of Mozambique's major provinces and cities.

The cashew industry is a somewhat sensitive industry in Mozambique. The liberalisation of the cashew sector starting from 1991 was a heavily contested issue as discussed in Chapter 7 of the thesis. The reform of the cashew law in 2018 also sparked a heated – although less contested – debate among the Mozambican Government, cashew value chain actors and representatives of the United States Agency for International Development (USAID). The cashew sector is often portrayed as a showcase project of in-country value-addition and employment creation. Public entities tend to draw the attention away from prevailing deficiencies and instances of corruption in the sector.

The focus of the study was a historical analysis of how politics shaped the re-emergence of the sector after its breakdown and the upgrading trajectories of firms. Obtaining an official research permit and access to cashew processing factories was therefore not a hurdle. Nevertheless, some of the information and arguments presented in the thesis are sensitive and some interview partners therefore asked me not to mention them by name as discussed in the section on methodological limitations below.

Table 4.1 applies the seven case selection criteria to Mozambique's major agricultural exports. It shows that the cashew sector fulfils the seven criteria best. In particular, the societal impact of cashew processing and the availability of previous research are important criteria for selecting the cashew sector. The latter allows for a detailed historic analysis of how the sector emerged, why it received political support and how it evolved over time. It was therefore possible to primarily focus on collecting data on more current developments in the sector and firm-level capabilities during the field research. Finally, the Mozambican cashew sector is an interesting case from a historical and industrial policy perspective because it underwent a highly contested reform at the end of the 1990s that became important for the political survival of the ruling FRELIMO coalition.

Table 4.1. Summary of the Case Selection Process

	Tobacco	Sugar	Bananas	Prawns & Lobster	Cotton	Cashew
Export orientation	yes	yes	yes	yes	yes	yes
In-country processing	yes, 1 processing plant in Tete	yes, 4 sugar mills in Sofala and Maputo provinces	yes, but limited processing	Yes, but offshore processing widespread	yes, 11 ginning companies	yes, 19 primary processing plants mainly in Nampula, Cabo Delgado
Societal impact	• 4.600 people employed at the Tete factory during peak season • ca. 100.000 smallholder tobacco growers	• sugar sector creates approx. 37.000 jobs • 2nd largest employer after public sector • approx. 4.000 small-holder farmers supply approx. 40% of cane to mills; sugar companies supply remaining 60% • Companies cater for or subsidise social services	• smallholder produced bananas usually do not meet export standards • employment is created on banana plantations and on-site processing facilities	• 343.000 people involved in sector in 2012 • 20% of population depends on fishing for part of its income • limited job creation due to offshore processing* • negative societal impact caused by over-fishing and illegal fishing	• 90% of total cotton production by smallholders • approx. 300.000 households involved in cotton cultivation • ginning companies create approx. 20.000 jobs	• several processing factories in different locations employ approx. 10.000 people • 42% of farmers grow cashews • main source of income for approx. 1.4 million rural producers
Capability increase	n/s	yes	yes	n/s	yes	yes
Local ownership	no	no	yes	yes	yes	yes
Previous research	limited	available	no scientific research; few donor studies	some academic research few recent publications few donor studies	limited; some studies on history of cotton production available	available
Accessibility & safety	yes	yes	yes	yes	yes, except risk in Cabo Delgado	yes, except risk in Cabo Delgado

* Political support to the semi-industrial fishery sector is limited, thwarting the creation of a national (onshore) processing industry (Buur, Balói, and Tembe 2012, 25).

Source: author's compilation, based on (ACDI/VOCA 2016; Bananamoz 2019; Buur, Balói, and Tembe 2012; Buur, Mondlane, and Baloi 2011; ComCashew 2019; Pérez Niño 2016; Scanteam 2016; TechnoServe 2017; UNCTAD 2017; Universal Corporation 2019)

This section presented the criteria used for case selection and summarised the case selection process. The following three sections are methodological notes on how to study political settlements at sector level as well as technological capabilities and learning mechanisms at firm level.

4.3 Political Ruptures as a Point of Entry for Studying Political Settlements

Scholars have applied the PS framework in different ways to study societal power relations at country and at sector level. My approach to studying the PS in the Mozambican cashew sector primarily draws on a research note on studying political settlements in Africa by Behuria et al. (2017) as well as on the productive sector case studies by Whitfield et al. (2015) and by Behuria (2018) as examples for studying the politics of productive sector promotion and industrial policy in Sub-Saharan Africa.

This study uses the concept of political ruptures *'as a window into analysing the distribution of power'* (Behuria, Buur, and Gray 2017, 508) in the Mozambican cashew sector. Political ruptures are the political outcomes of moments of intense change at societal level, also referred to as critical junctures. Political ruptures can occur when groups within and outside the ruling coalition or economic actors pose a credible threat to the holding power of the ruling coalition and force a change in the distribution of power. They can result in new divisions of power within society that can become visible in the exchange of political personnel or sector reforms, among others. Even though political ruptures do not necessarily coincide with formal regime or institutional change, they can alter the distribution of power of societal groups by excluding or integrating specific groups or individuals in an existing structure of power (Behuria, Buur, and Gray 2017, 513).

Critical junctures are relatively short periods of time during which the range of feasible choices of agents broadens and choices *'have a significant impact on subsequent outcomes'* because they *'trigger a path-dependent process that constrains future choices'* (Capoccia and Kelemen 2007, 348). Decisions taken during critical junctures block alternative options and generate formal and informal institutions that in turn generate self-reinforcing processes that are difficult to change (Capoccia and Kelemen 2007, 341). This point becomes obvious in the study of the Mozambican cashew sector where a policy and institutional framework adopted in 1999

has been in place until the time of writing (with small adaptations) and where opportunities for formal and informal rent creation block a far-reaching reform of the sector.

The critical juncture under study in this thesis is the period from 1991 to 2002. During this period, the Mozambican Government faced severe budget constraints and pressure from the International Financial Institutions (IFIs) to implement a series of liberal reforms. This coincided with strong oppositional pressures, the breakdown of the cashew sector shortly after its liberalisation, and contestation within the ruling coalition related to the ruling elites' liberalisation course. The confluence of these factors threatened the political survival of the ruling coalition. However, it also enabled it to take policy decisions with impacts on the division of power within the sector that had previously not been possible.

To sum up, it is crucial to study the period from 1991 to 2002 to explain how and why the political settlement in the cashew sector emerged. The analysis in Chapter 7 therefore focuses on this critical juncture to explain why the cashew sector received political support and why a specific set of policies was adopted in 1999. The following section presents the methodological approach used to study TCs and capability change at firm level.

4.4 Studying Technological Capabilities and Capability Change at Firm Level

Upgrading at firm, sector and/or country level is closely linked to enhancing firm's technological capabilities. Tracing the development of TCs of firms in a sector over time requires a thorough understanding of which capabilities firms in that sector need to access a GVC and to remain competitive. This implies developing a GVC-specific technological capabilities matrix that links the three sets of technological capabilities (investment, production and linkage capabilities) discussed in the theoretical framework with different stages of functional upgrading. Drawing on the work of the AFRICAP research project (Melese 2017; Mulangu 2017; Staritz and Whitfield 2017; 2019; Whitfield and Staritz 2017), this section introduces the technological capabilities matrix as a tool to study TCs and capability change at firm level.

The technological capabilities matrix classifies TCs along two axes (see Table 4.2). The vertical axis contains different functions that firms may perform in a GVC, reaching from basic to advanced production capacities. The horizontal axis includes the three sets of TCs. Production capabilities include the three sub-categories product, production process, and post-harvest

process. Linkage capabilities include the three sub-categories logistics, finance and services, input supply chain, and end markets. To acquire higher functions in a GVC firms need to enhance their TCs related to investment, product and production processes and linkages. This is linked to process, product, supply chain and end-market upgrading.

Table 4.2. Technological Capabilities Matrix Template

		Technological capabilities:						
		Invest-ment	*Product and Production Process*			*Linkages*		
		Invest-ment	Product	Produc-tion process	Post-harvest process	Logistics, finance, services	Input supply chain	End markets
Value Chain Functions:	*Basic*							
	Inter-mediate							
	Advanced							

Source: the author, adapted from Staritz and Whitfield (2019, 394–95)

In sum, the rows of the matrix are linked to moving up in the chain, i.e. acquiring new functions, while the columns of the matrix are linked to deepening at a specific functional level (Staritz and Whitfield 2019, 391). For instance, cashew processors with basic production capabilities may deepen their linkage skills by diversifying their buyers and end markets (without performing new functions within the cashew GVC). Or they may deepen their capabilities by investing in more advanced technologies to increase productivity. Table 4.2 serves as a template for the technological capabilities matrix developed in Chapter 6 of this thesis.

The capabilities matrix implies that firms within a sector do not build their TCs in a linear, sequenced way. Neither do they start and end at the same level (Morrison, Pietrobelli, and Rabellotti 2008, 42–43). Some firms already have an advanced level of TCs that allows them to take on more functions in a GVC when they enter a GVC. Firms may also operate at various nodes of a chain. For instance, a primary cashew processor with a basic production capacity may invest in secondary processing of cashew kernels for the regional market (strategic

diversification) while continuing to export cashew kernels at global level. Depending on which sets of TCs firms enhance, they embark on unique upgrading and deepening paths.

The technological capabilities matrix is a snapshot of the TCs that firms require at different functional levels of a GVC at a specific point in time (and in some cases in specific regions)[56] (Staritz and Whitfield 2019, 392). However, TCs are a moving target because technologies, the levels of competition and demand, consumer tastes, and market conditions are constantly changing. With regards to studying upgrading in the Mozambican cashew sector, the matrix is a useful tool to a) map the status quo of a cashew processor's capabilities or of a national industry with various local and foreign firms with varying levels of capabilities; and b) to trace how the capabilities of cashew processors have evolved over time and in which direction the cashew processing sector – globally and most likely also in Mozambique – is moving.

The analysis of firm- or sector-specific upgrading, downgrading or deepening paths is based on firm-level data collected through surveys that were tailored to the cashew sector and that were conducted with owners or managers of local and foreign firms, factory visits and interviews with experts in the cashew sector, e.g. former processors, consultants or development practitioners. The data collection centred on firms' current level of TCs, on how their capabilities changed since they went into business, and how they acquired new capabilities. The following section explains the methodological approach to studying learning mechanisms that Mozambican cashew processors used to build their technological capabilities.

4.5 Studying Learning Mechanisms at Firm Level

This thesis draws on the method of process tracing to study learning mechanisms at firm level (Beach 2019; Beach and Pedersen 2013). Process tracing uses detailed within-case empirical analysis to trace causal mechanisms that link causes and outcomes in a real-world case. Causal mechanisms take place within specific contextual conditions[57], i.e. they may play out differently in different contexts. This thesis therefore provides detailed information on the country- and

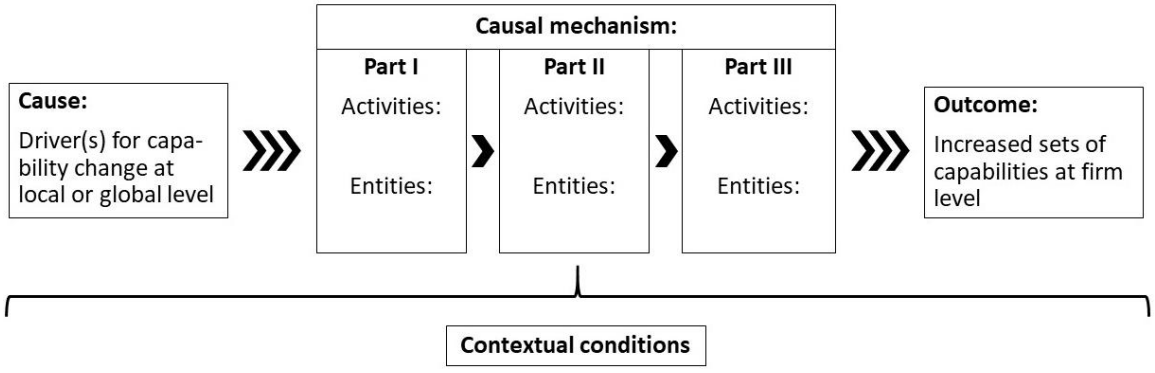
[56] In some GVCs, e.g. the cashew GVC, firms in different regions use different types of technologies for processing that require different sets of TCs. While the functions on the vertical axis may be the same, the sets of capabilities on the horizontal axis may differ according to the point in time and the region under study.

[57] Contextual conditions are '*relevant aspects of a setting (analytical, temporal, spatial, or institutional) in which a set of initial conditions leads […] to an outcome of a defined scope and meaning via a specified causal mechanism or set of causal mechanisms'* (Falleti and Lynch 2009, 1160).

sector-specific context, including the history of the cashew sector, its institutional and policy framework, the organisation and governance of the cashew GVC at local and global level and societal power relations.

In this study, causal mechanisms refer to learning processes at firm level that link specific drivers of technological capability change (causes) to increased sets of investment, production and linkage capabilities (outcomes). A causal mechanism consists of a system of interlocking parts that in turn consist of entities, e.g. firms, external consultants, or national agencies, that engage in activities, e.g. conducting trainings, implementing documentation procedures, or hiring skilled labour. This sequence of activities produces change within a mechanism (Beach 2019). Figure 4.1 provides a simplified illustration of a three-part causal process that links drivers for capability change to an increase of TCs at firm level.

Figure 4.1. Simplified Illustration of a Three-Part Causal Mechanism



Source: the author, based on (Beach 2019)

Chapter 8 of this thesis identifies the causes and outcomes of technological capability change at firm level. Causes refer to developments at the local or global levels that drive learning among cashew processors in Mozambique, e.g. technological innovations or an increase in demand. Outcomes refer to an increase in TCs at firm level, e.g. increased investment, production or linkage capabilities. Building on the insights of Chapter 8, Chapter 9 explores which learning channels cashew processors used to increase their TCs as a response to specific drivers.

This study engages in process tracing at a relatively early stage, i.e. the mechanisms that link causes and outcomes are unclear. Therefore, teasing out learning mechanisms at firm level is a first step. Unpacking these mechanisms and their respective parts requires more detailed firm-level data and lies beyond the scope of this study (see discussion of methodological limitations below).

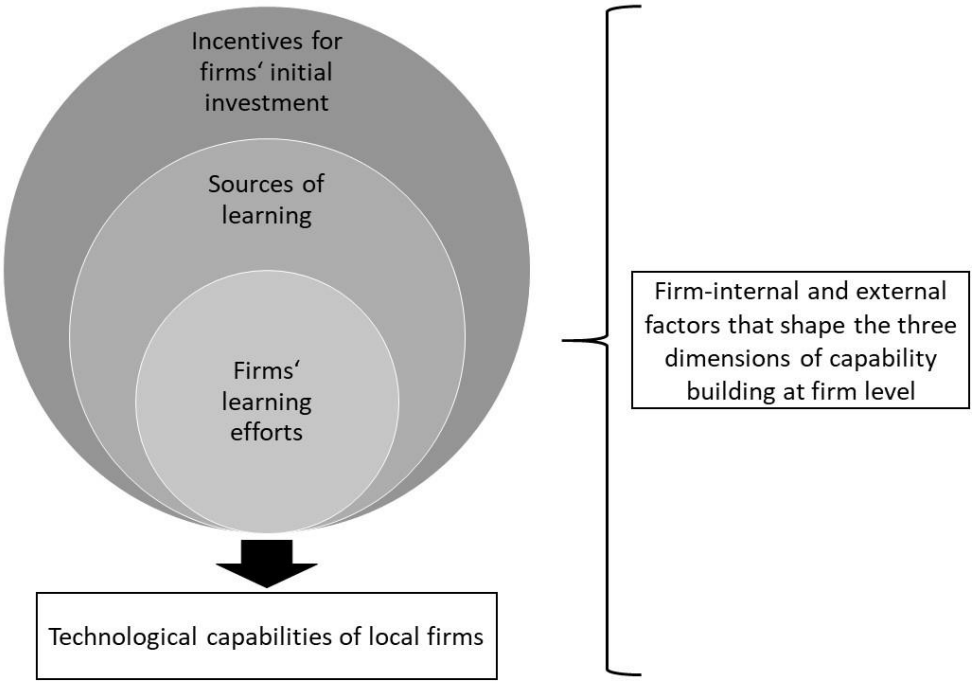
The methodological approach to studying learning mechanisms at firm level in this thesis includes four steps. Step one identifies which learning mechanisms Mozambican cashew processors used to acquire TCs.

Step two classifies learning mechanisms according to source, scope and time period. Drawing on the classification proposed by de Marchi et al. (2018), this thesis differentiates between learning mechanisms within or outside the cashew GVC. Learning mechanisms inside the GVC refer to learning from suppliers or buyers. Learning mechanisms outside the GVC include mechanisms at firm level and external mechanisms, such as donors, competitors, or industry associations. Classifying learning mechanisms also includes an assessment of the scope of different learning mechanisms. While some learning mechanisms involve a purposeful process of knowledge transfer and technical assistance, others are merely a source of information, e.g. on industry standards. Finally, learning mechanisms are classified according to the time period in which firms used them. The type of learning mechanisms that firms use during the initial stage of the business may differ from those used at a later stage.

Based on this classification of learning mechanisms, step three explains a) why cashew processors in Mozambique used specific learning mechanisms (during specific time periods) and b) why the learning efforts among Mozambican cashew processors differ. Answering the first question also implies looking at why firms did not use potential learning channels. In the case of the Mozambican cashew sector, this requires explaining why industrial policies and international buyers were not a source of learning for processors. To answer the second question, this thesis takes a closer look at the characteristics of processing firms and the effects of industrial policies.

Finally, to demonstrate the overall process of technological capability building among Mozambican cashew processors step four applies a framework developed by Melese (2019, 143) that distinguishes between three dimensions of technological capability building at firm level (see Figure 4.2).

Figure 4.2. Three Dimensions of the Technological Capability Building Process at Firm Level



Source: the author, adapted from Melese (2019, 143)

The first dimension refers to factors that incentivise firms' initial investment in a sector. The second dimension captures sources of learning. The third dimension refers to factors that shape firms' learning efforts. Melese links these three dimensions to internal factors, i.e. firm-specific characteristics, and external factors, such as national policies and the governance of GVCs, that shape capability building at firm level. This framework summarises the findings of steps 1 to 3 in a systematic way and provides a bigger picture of firm-level learning.

In sum, the methodological approach to studying learning mechanisms at firm level applied in this thesis includes four steps: 1) Identifying which learning mechanisms cashew processors in Mozambique used; 2) classifying these learning mechanisms according to source, scope and time period; 3) explaining why processors used specific learning mechanisms and why the learning efforts among firms vary; and 4) illustrating the process of technological capability building among Mozambican cashew processors based on the findings of steps 1 to 3.

The analysis of learning mechanisms at firm level is primarily based on information gained through firm surveys with foreign and local cashew processors and expert interviews with the international buyer Global Trading & Agency (GTA), current and former employees of TechnoServe, and a kernel trader who has worked in the Mozambican cashew sector since its

revival. A report on the Mozacajú project from TechnoServe was also used as a source of Information on learning mechanisms. The following section presents in more detail how the data for this thesis was collected, managed and analysed.

4.6 Research Data

This section first describes the process of identifying and establishing contacts with interviewees and gaining access to additional data related to cashew production, processing and exports in Mozambique. Second, it presents the sources of data used for this study and their purpose and the process of data collection. Finally, it discusses the processes of data management and analysis.

Learning the language of the cashew sector was an important requirement to 'understand' interviewees and to be able to ask precise questions. Mastering the cashew-specific vocabulary that is used by actors who are involved in the cashew sector was crucial to obtain the information required for this thesis. The list in Annex 1 explains core terms and actors in the Mozambican cashew sector.

Getting Access to the Field

This section briefly describes how I identified and gained contacts to relevant interview partners. I used several sources to identify interview partners for a first round of background interviews during a scoping trip to Mozambique in September 2017. Next to desk research, I was able to draw on contacts from my PhD supervisors and other PhD students in Mozambique. I also participated in a conference organised by the Institute of Social and Economic Studies (IESE) in Maputo during which I presented my research project to local researchers and development practitioners. At the conference, I established links with international and local researchers with similar research interests. During my field research from February to April 2018 I was a research fellow at IESE and could draw on contacts of the institute's researchers as well as on my own contacts that I had gathered during the scoping trip.

The communication style in Mozambique is usually ad hoc, i.e. most meetings are arranged at short notice by phone and not well in advance via email. I contacted some interview partners prior to my research stay, particularly international organisations and donors that implemented

studies or programmes in the cashew sector, however, I arranged most interviews once I had arrived in Maputo.

After some initial interviews, I gained access to most interview partners using the snowballing technique (Biernacki and Waldorf 1981). Despite this random sampling of interviews I made sure to use various entry points into the sector in order to ensure that my sample represents a variety of perspectives on the cashew sector (Bhattacherjee 2012, 96; Kjær 2015, 233). Key informants, 'door openers' who introduced me to higher ranking public officials, and participant observation were three major channels to gain access to the cashew sector and key value chain actors in Mozambique.

First, two key informants were particularly helpful in the course of my field research. A consultant and former cashew processor whom I had met at a meeting with World Bank representatives provided me with a list with the contact details of all cashew processors and key informants in the cashew sector, including representatives of the National Cashew Institute (INCAJU). The contact details of cashew processors were crucial because it is not possible to obtain up to date information on industry actors through internet research. A Danish consultant and cashew expert who works in Nampula was an important source of information on cashew production and accompanied me to visits of cashew factories and a tree nursery. I was able to discuss current developments in the cashew industry with both consultants at various stages of my research stay.

Second, a German researcher and former director of the Friedrich Ebert Foundation in Maputo as well as a former development practitioner from the U.S. were important 'door openers' that introduced me to higher ranking public officials. The latter would otherwise not have responded to my interview requests.

Finally, a meeting of the Cashew Committee in Maputo that I attended was an important occasion to a) observe the relations and debates among major actors in the cashew value chain; b) meet important representatives of the cashew sector, INCAJU, the Association of the Cashew Industry (AICAJU) and the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) in person; and c) to schedule further interviews. Through the mailing list of the Cashew Committee I also gained access to current data on cashew production, processing capacities of cashew processors as well as exports of cashew kernels and raw cashew nuts (RCN).

Sources of Data and Data Collection

My analysis is based on a triangulation of research data (Yin 2012: 119 ff.) from four sources of evidence (see Table 4.3).

Table 4.3. Sources for Data Collection

Source	Sources	Purpose
Desk study	• scientific literature • industry reports • consultancy reports/ donor studies • official documents and data • press clippings • web sites	• Collect background information on: o the history of the cashew sector and its policy framework o the cashew value chain o data related to cashew production, processing and exports o the political settlement at country level o the political settlement at sector level
Semi-structured interviews	• value chain actors (except processors) • public officials • business associations • labour union • development practitioners • consultants • researchers	• Collect data on: o the evolution of the cashew sector and its policy framework o organisation and governance of the cashew value chain o state-business relations o opportunities for in-/formal rent creation o holding power of cashew processors and RCN exporters o technological capabilities of cashew processors o upgrading processes and channels o challenges of the cashew sector and its level of global competitiveness
Firm surveys	• Local and foreign cashew processors in Mozambique	• Collect basic firm data and information on firms' technological capabilities related to: o investment o product and production process o linkages
Direct/ participant observation	• factory visits • attending a meeting of the cashew committee	• Document processing technology and working conditions in cashew factories • Establish contacts with key value chain actors • Gain access to data on cashew exports and processing capacities • Gain insights into current debates

Source: the author

First, I conducted a desk study of scientific literature on the cashew sector in Mozambique, of industry and consultancy reports, donor studies, official documents and data, press clippings and web sites. The desk study provided information on the history of the cashew sector in Mozambique and its industrial policy framework, the cashew GVC, the PS at country and sector level as well as statistical data related to cashew production, processing, and exports.

Second, I collected data through semi-structured interviews with RCN exporters/traders, international buyers, government representatives and public officials at INCAJU, business associations, the cashew workers union, representatives of international development organisations (e.g. TechnoServe and the World Bank), consultants, and researchers with expertise in the cashew sector. The semi-structured interviews revealed insights into the history of the Mozambican cashew sector, the cashew law and its reform, the organisation and governance of the cashew GVC, state-business relations in the cashew sector, current challenges of the cashew sector, the competitiveness of the Mozambican cashew industry, opportunities for formal and informal rent creation in the cashew sector, the holding power of cashew processors and exporters of RCN, upgrading paths of processors, and the technological capabilities of cashew processors in Mozambique. Lists of interviews that I conducted during the scoping trip in 2017 and the research stay in Mozambique in 2018 as well of the factory visits are provided in Annexes 2 to 5.

The interview guideline used for semi-structured interviews varied according to interviewee. Some interviews discussed detailed questions, e.g. related to individual processors, processing methods, or factories, while others discussed more general issues. Annex 6 provides a collection of interview questions that were discussed during the interviews.

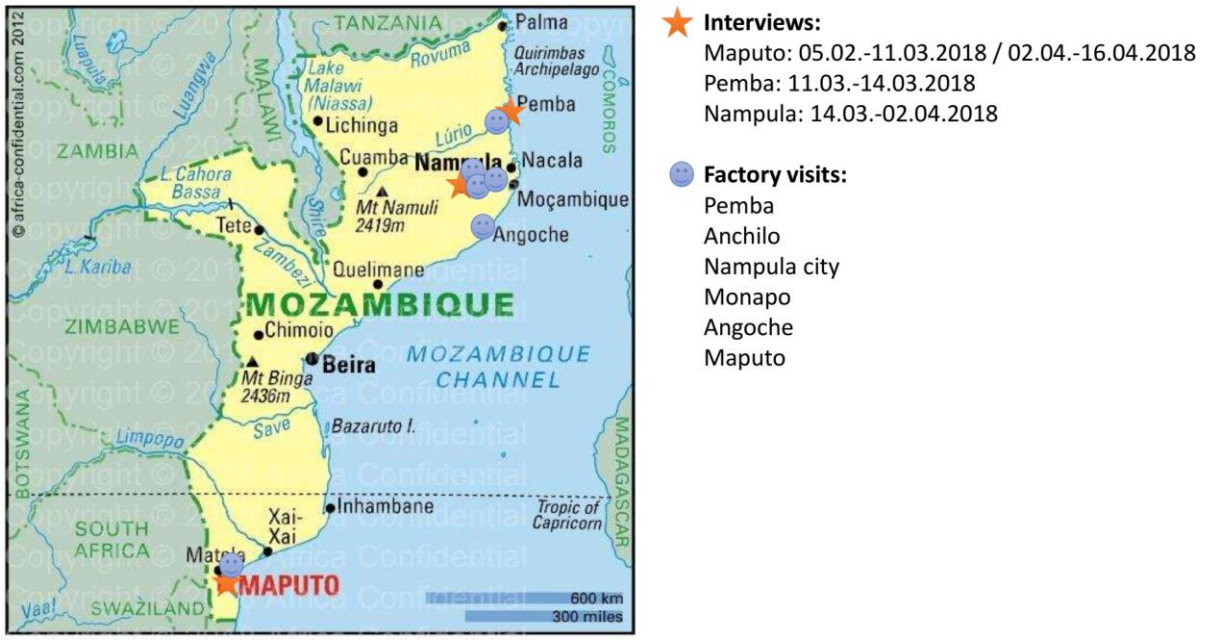
Third, I conducted surveys with local and foreign cashew processors in Mozambique. The survey covered basic company information as well as information related to investment, production and linkage capabilities (see Annex 7). A particular focus of the surveys with processors was to gain a better understanding of processes of upgrading at firm level and of the channels that local and foreign cashew processors used to acquire TCs and information. The interviews with processors also aimed to trace firm histories (Wangwe 1995).

The design of the survey was guided by a provisional technological capabilities matrix for the cashew industry developed prior to the research stay and the surveys developed by Staritz and Whitfield (2017) in the AFRICAP research project. The survey included core questions

(highlighted in bold) which I aimed to ask all cashew processors and supplementary questions which I asked if the interviewee had more time. The data for the survey was gathered during face-to-face interviews with owners, managers or high-ranking employees of cashew processing factories in Nampula and during company visits. Challenges related to collecting basic company data and information related to firms' capabilities are discussed in the section on methodological limitations below.

Finally, I collected evidence through direct observation during six factory visits in Mozambique and through participant observation at a meeting of the cashew committee in Maputo. The factory visits included one closed down factory for primary and secondary cashew processing in Pemba (Cabo Delgado Province), three large-scale factories for primary cashew processing in Nampula, Angoche and Anchilo (Nampula Province), one small-scale factory for primary cashew processing in Monapo (Nampula Province) and one factory for secondary processing in Maputo. Factory visits helped to gain a better understanding of the processing steps and the technology used to produce cashew kernels as well as the working conditions in the factories. It was an opportunity to observe the general condition of factories, the organisation of the production process, the age and gender of workers as well as the gendered division of labour. Map 4.1 provides an overview of the locations of interviews and factory visits in Mozambique.

Map 4.1. Overview of Interview Locations and Factory Visits



Source: the author; Source of Map: Africa Confidential (2020)

Data collection took place during a two-week scoping trip to Mozambique in September 2017 and a 2.5 months research stay from 4 February to 17 April 2018. During the scoping trip, I conducted 11 background interviews with researchers, business associations, experts, and development practitioners. These interviews served to gather information for the case selection process and to establish contacts with local research institutions and key informants.

During my research stay in 2018 I conducted 46 interviews in Maputo, Pemba (Cabo Delgao Province), the city of Nampula (Nampula Province) and visited six cashew processing factories. I conducted one further interview after I had returned from Mozambique in September 2018 in Sliedrecht (the Netherlands) with a Dutch trader of cashew kernels and RCN who was involved in reviving the Mozambican cashew processing industry in the early 2000s. I conducted about half of the interviews in Portuguese, the other half in English and one interview in German. The following section describes the processes of data management and data analysis.

Data Management and Data Analysis

I recorded approximately one third of the interviews I conducted. Some interviews took place in cashew processing factories with a high noise level that made it impossible to record interviews at a decent quality. Some interview partners specifically asked me not to record the interview or parts of the interview to be able to speak more freely. In some instances, I did not ask interviewees whether I could record the interview because I knew that I would touch upon sensitive issues, such as corruption. Recording such interviews would have disturbed the interview atmosphere, created mistrust, and made interview partners feel uncomfortable when speaking.

I transcribed the English interview recordings myself using the programme 'Transcribe'. A student from Mozambique that was affiliated to IESE transcribed the Portuguese interview recordings. I reworked the Portuguese interview transcriptions and adapted them to my format and style of transcribing interviews. Incomprehensible interview passages were marked with 'XXX'. I took notes during those interviews that I was not able to record and drafted a detailed interview protocol for each interview immediately after the interview. My primary data encompasses interview transcripts, interview protocols, firm surveys and pictures that I took

during factory visits. All protocols, transcripts, survey questionnaires and pictures can be provided upon request.

I used the data analysis programme 'MAXQDA' to analyse the interview transcripts and the interview protocols. The aim of using MAXQDA was to tease out relevant interview sequences and to categorise these sequences using codes and sub-codes that are linked to my guiding questions.[58] Codes are clusters that consist of interview sequences that relate to the same topic or phenomenon. Before I started to code my interview material, I developed a code book. The code book contained theory-guided codes and sub-codes, e.g. the code 'informal rent creation' or 'investment capabilities', and fact-related codes, e.g. related to GVC actors or industrial policy measures. These codes served as a search grid to identify relevant interview sequences for my analysis. While coding the interview material, I adapted my initial system of codes and added new codes and sub-codes to include further relevant topics (Kukartz 2012, 69, 79).

After the first round of coding, I had developed a more precise understanding of my interview material as well as the codes and sub-codes. In a second step, I went through all codings[59] again with the aim to delete codes I had not used or that turned out to be irrelevant, to merge overlapping codes, to check if the codes and sub-codes I had assigned to the respective interview sequences were correct, or to delete codings. During this process, I also created new, more precise sub-codes and revised my code book and the definitions of codes and sub-codes in the code book. The aim of this process was to reduce the number of codes and codings and to refine them. Coding my interview data was a dynamic process that required going through interview transcripts and protocols various times to update codes and codings. My final codebook contains 11 codes with several sub-codes. In total, I assigned 1.158 codings. The code book and definitions of the individual codes are provided in Annex 8.

The information gained through the semi-structured interviews and firm surveys complemented, confirmed, and in some cases contradicted the information gained through previous desk research. Primary data collection was a key tool to identify relevant issues that required further desk research. Most importantly, the interviews and firm surveys were important sources of new information, notably on state-business relations, firms' capabilities, processes and effects of economic and social upgrading as well as firms' learning channels. On

[58] The guiding questions of the study served as a guide for both, data collection and data analysis.
[59] A coding refers to a text sequence that I assigned one or more codes to.

the one hand, I used the information gained through the firm surveys to square it with data from INCAJU and from Mozambican Customs, e.g. related to target markets, number of employees and production levels. On the other hand, I used the survey data for tables that provide an overview of basic information on primary cashew processors in Mozambique (see Chapter 5), compliance with international food safety standards (see Chapter 8), processing technologies used at Mozambican cashew factories (see Chapter 8) and learning channels (see Chapter 9).

This section explained how I identified and gained access to interviewees and presented my data sources as well as the process of data collection, management and analysis. The following section reflects on four methodological limitations that this study faces.

4.7 Methodological Limitations

This section discusses four methodological limitations of the thesis: 1) the limited generalisability of single case studies; 2) limitations related to collecting micro-level firm data; 3) limitations related to official data on productive sectors in Mozambique; and 4) limitations related to quoting interviewees on sensitive issues.

Despite its many advantages, using a case study approach to studying productive sectors has some drawbacks with regards to making generalisations. In contrast to survey research, it is not possible to draw statistical generalisations by studying a single case. However, single case study findings can form the basis of analytical generalisations by transferring case-specific results to a higher conceptual level and thereby contributing to theory building (Yin 2014, 40–44). Regardless of considerations related to the generalisability of single case studies, I strongly support Flyvbjerg's (2006, 227) argument that case studies contribute to knowledge accumulation in a given research field and are therefore a source of scientific progress.

Identifying causes for why governments promote specific export sectors, why and how firms upgrade, the outcomes of upgrading and mechanisms that link these causes and outcomes under specific contextual conditions increases our understanding of how politics shape productive sector promotion and firm-level upgrading in low-income countries. This study does not seek to make analytical generalisations. It aims to contribute to theory development by identifying new explanations and propositions related to the politics of productive sector

promotion and firm level upgrading in GVCs for the study of other outliers in Mozambique or other low-income countries. The study also contributes to refining and confirming the general theoretical arguments of the political settlements framework by applying it to a new case.

The second limitation of this study relates to collecting micro-level firm data. As explained in section 5 of this chapter, this study seeks to identify causal mechanisms, their causes, and their outcomes. It is beyond the scope of this study to unpack these mechanisms in detail. Unpacking learning mechanisms that cashew processors in Mozambique used to acquire or enhance their capabilities requires detailed data on the activities of firm owners and individual employees, their interactions with external actors, and on production processes. Collecting this type of micro-level firm data implies spending a longer period of time at each cashew factory to accompany changes in the production process and measures that enhance the skills of employees as well as to conduct in-depth interviews with firm owners, factory managers and selected employees.

The duration of my research stay in Mozambique was limited to three months in total (a two-week scoping trip and a 2.5 months research stay). During my stays I had to identify key interview partners and contact persons at cashew processing firms, establish contacts with interviewees and travel to different places in the south and north of Mozambique to conduct interviews and visit factories. Arranging interviews with firm owners and factory visits was challenging because their time is limited and I – in contrast to donors – had nothing to offer except for the promise to make the findings of my study available at a later stage.[60] I was able to interview cashew processors once during my stay in Mozambique and the time slots for my interviews were limited to 30 to 45 minutes. In the cases of Condor, ETG Korosho, Caju Ilha and Emaju I was able to collect additional information during factory visits

Third, this study faces some limitations related to the official data on productive sectors in Mozambique. Statistical data on the level of production, processing and the export performance of productive sectors and specific firms is, at best, scarce. If data is available, its reliability needs to be questioned because the capacity of government authorities to collect reliable data is weak and politics tends to interfere. Even an employee at the National Cashew

[60] Being an independent researcher also had advantages. Many interview partners asked me who I worked for or who funded my study and were more open and maybe honest (e.g. when asked about the efficiency of donor projects) when they heard that my research was not funded by an international organisation or donor and that my findings did not feed into future donor projects.

Institute INCAJU pointed to the lack of skills related to collecting data on the cashew sector and INCAJU's own programmes. The manager of one of Condor's factories claimed that INCAJU calculates the numbers related to cashew production based on a plan but not on reality: *'The country needs to achieve an x% of growth YoY [year-on-year] accordingly to the plan, and that's how these numbers are calculated.'* (Correia 2019)

Another challenge related to the data on the cashew sector was that numbers varied substantially depending on the source used. For instance, INCAJU's numbers on exports differed from those of Mozambican Customs and from those published in donor studies. The actual levels of processing and the number of employees working in cashew factories indicated by processing firms varied from those provided by INCAJU. Due to a lack of alternative data sources, I used the data provided by INCAJU and Mozambican Customs related to levels of cashew production, processing and exports. However, I crosschecked this data with data provided by cashew processors and donors in order to increase data reliability.

The final limitation of the thesis relates to handling the information gained through personal interviews in a sensitive and respectful manner. Some interviews touched upon politically sensitive issues, such as corruption, a lack of skills at INCAJU that hampers the implementation of the cashew law and the collection of sector-specific data, or a lack of success of some public measures. Some interviewees openly criticised the Government, INCAJU and other actors outside and within the cashew sector. Many of them, e.g. some processors and traders, express their criticism in public and in meetings of the cashew committee. However, they do not wish to be quoted in scientific publications to avoid putting a strain on the relations with public entities, donors, or other value chain actors. In addition, parts of this thesis (notably Chapter 8 and Chapter 9) are based on comprehensive firm data, e.g. related to absenteeism rates, the breakage rate of cashew kernels during processing or the volume of production. This is sensitive data that is not available to the public.

The quality of this research project depends to a large extent on sector-specific data and information. I invested considerable time and effort to establish contacts and trust with industry actors, government officials, and representatives of international organisations to obtain the information I required to conduct my study. To avoid harming any of the persons I interviewed, interviewees are not mentioned by name but by function and institution or firm. Interview transcripts, interview protocols and firm surveys are provided upon request.

The following section provides a summary of the methodological approach used to carry out this research project.

4.8 Conclusion

This chapter presented the methodological approach used to carry out this research project and reflected on four important methodological limitations. The study is designed as a single case study of the Mozambican cashew sector. The latter was selected based on seven criteria that emerged from a review of the literature on productive sectors, information gathered during a scoping trip to Mozambique and theoretical and practical considerations. In a broader theoretical sense (Lund 2014, 229–30), the study is a case of the political economy of export-driven industrialisation and upgrading in GVCs. It seeks to contribute to the process of building and refining theory in two ways. First, it illustrates the general theoretical arguments of the political settlements framework and refines the operationalisation of its key variables by applying it to a new case. Second, it identifies how domestic politics shapes causes and outcomes of technological capability change at firm level and teases out learning mechanisms of cashew processing firms in Mozambique.

This thesis centres on political ruptures that occurred in the period from 1991 to 2002 to explore the distribution of power in the Mozambican cashew sector, particularly the relations between cashew processors and exporters of raw cashew nuts vis-à-vis the ruling elites. In order to study a) which capabilities cashew processors needed to break into the cashew GVC and to upgrade; and b) the level of TCs of Mozambican cashew processors this thesis develops a technological capabilities matrix for the cashew industry.

The methodological approach to studying learning mechanisms at firm level includes four steps. Step one explores the learning mechanisms of cashew processors using the method of process tracing. Step two classifies these learning mechanisms according to source, scope and time period. Step 3 explains why processors used specific learning mechanisms and why the learning efforts among processing firms vary. Step four illustrates the process of technological capability building among Mozambican cashew processors based on the findings of steps 1 to 3.

Figure 4.3 provides an overview of the data types and methodological approaches that were used to answer the working questions of the thesis.

Figure 4.3. Overview of Guiding Questions, Data Types and Theoretical and Methodological Approaches

Research Question	Working Questions	Data Types	Theoretical and Methodological Approach	Chapter
How do politics shape the promotion of export-driven industrialisation and firm-level upgrading in Sub-Saharan Africa?	1. Which capabilities do cashew producers and processors require to access the cashew GVC and to remain competitive and which opportunities for upgrading does the value chain offer?	• Desk study of donor studies, industry and consultancy reports, scientific literature • Semi-structured interviews • Direct observation at factories	• Global value chain analysis • Technological capabilities matrix	• Chapter 6
	2. Why did the Mozambican Government support the cashew sector cashew sector in the 1990s and which actors in the local cashew value chain benefitted from state support?	• Desk study scientific literature • Semi-structured interviews • Participant observation at cashew committee meeting	• Political settlements framework with a focus on studying political ruptures	• Chapter 7
	3. How did the technological capabilities of Mozambican cashew processors evolve since the revival of the industry in 2002 and which economic and social effects did this have?	• Firm surveys • Direct observation at factories • Semi-structured interviews • Desk study of donor studies, consultancy reports, official data and press clippings	• Operationalisation of firm-level upgrading (see theoretical framework) • Technological capabilities matrix	• Chapter 8
	4. Which learning channels did Mozambican cashew processors use to acquire the technological capabilities needed to access the cashew GVC and to upgrade?	• Firm surveys • Semi-structured interviews • Donor reports	• Process tracing to study learning channels at firm level • Political settlements framework • Global value chain analysis	• Chapter 9
	5. How did the Mozambican Government shape the governance of the local cashew value chain and the upgrading paths of Mozambican cashew processors?	• Desk study of industry and consultancy reports, official data and scientific literature • Semi-structured interviews • Firm surveys	• Framework for studying the political economy of productive sector promotion and upgrading (see theoretical framework)	• Conclusion

Source: the author, inspired by Monjane (2019, 64)

This research project is based on a triangulation of research data collected through a desk study, semi-structured expert interviews, firm surveys and direct as well as participant observation. Primary data collection took place during a two-week scoping trip to Mozambique in September 2017 and a 2.5 months research stay from 4 February to 17 April 2018. The analysis of interview transcripts and protocols was carried out with the programme MAXQDA using a code book that included theory-guided and fact-related codes and sub-codes.

The thesis faces four methodological limitations, namely the limited generalisability of a single case study, limitations related to collecting micro-level firm data, limitations related to official data on productive sectors in Mozambique, and limitations related to quoting interviewees on sensitive issues.

The following chapter provides a profile of the Mozambican cashew sector, including its history, current industrial policy and institutional framework and current numbers on the levels of production, processing, and export.

5 The Mozambican Cashew Sector in a Nutshell

The aim of this chapter is threefold. First, it traces how the Mozambican cashew sector and its industrial policy framework evolved over time. It presents a nuanced explanation for why the sector broke down at the end of the 1990s. Second, it provides a profile of the Mozambican cashew sector today, including its current industrial policy and institutional framework as well as figures on the levels of production, processing, and export. Third, it discusses shortcomings of the current cashew policy framework and important challenges of the sector. The overview of the Mozambican cashew sector sets the stage for the following chapters, which together build the analytical core of the thesis

The first section of this chapter centres on the evolution of the Mozambican cashew sector from the colonial era until 2019. It gives a nuanced explanation for why the cashew sector broke down in the mid-1990s that goes beyond the common story that the World Bank's liberalisation policy caused the breakdown. The second section lays out the sector's current policy and institutional framework which has been in place since 1999. It also discusses the effectiveness of the policy measures to support the cashew sector and some of the sector's challenges. The third section presents current data on the cashew sector at global level and in Mozambique. The final section summarises the findings of the chapter with a particular focus on the challenges of the Mozambican cashew sector and its industrial policy framework.

5.1 Evolution of the Mozambican Cashew Sector and its Policy Framework

The cashew processing industry in Mozambique was set up by the Portuguese colonial government in the 1950s. After independence in 1975, the cashew sector underwent periods of nationalisation (1975-1990), privatisation (1991-1994), liberalisation (1992-1999), a complete breakdown (1999-2002), rehabilitation (2002-2009), and consolidation (2009-2019). This section traces the turbulent history of the Mozambican cashew sector.

Cashew Production and Processing in the Colonial Era: 1900-1975

Exports of raw cashew nuts (RCN) from Mozambique to India began in the early 20th century and reached 11.000 tons in 1933 and 40.000 tons in 1937. Cashew soon became an important

source of income in rural areas. The first industrial cashew processing plant was established in 1950 by the Portuguese colonisers. By the 1970s, 14 processing factories were operating, owned by foreign companies, mostly from Portugal, but also from South Africa and Switzerland (Sjaastad et al. 2007, 33). In 1974, revenues related to the cashew sector (raw cashew nuts - RCN, cashew kernels and cashew nut shell liquid - CNSL) represented 21.3% of total exports of the colony, outperforming the cotton sector with 11.1% and the sugar sector with 20.9%. As the world's largest cashew producer, Mozambique was able to supply its processing units as well as export RCN to India. In 1974, it exported 24.000 tons of cashew kernels and 73.000 tons of RCN (Leite 2000, 296).

In order to stabilise the sector, the Portuguese colonial government established fixed producer prices and marketing margins along the whole cashew marketing chain (Tarp 1990, 173–74). It actively enforced cashew cultivation in Mozambique by forcing Mozambican farmers to cultivate and take care of cashew trees. Each family had to produce cashew nuts on their *machamba* (plot) which they could then exchange for other consumer goods at a *cantina* (small retail shop) (Frei and Peixinho 2012, 6). The processing plants that were set up in the 1950s, 1960s and 1970s were large-scale factories that used capital-intensive impact shelling technology. This technology replaced small-scale manual processing technologies that were previously used to cut open and deshell RCN (Aksoy and Yagci 2012, 4).

In short, the Portuguese regime established a highly protected, mechanised, and efficient cashew processing industry in Mozambique that made the country a leading player in the global cashew nuts market. The downside of this success were poor working conditions in the factories and forceful measures to promote cashew processing among farmers. The following section traces how the sector evolved after Mozambique's independence from Portugal.

Nationalisation: 1975-1990

When Mozambique obtained independence in 1975, most of the Portuguese owners of the cashew processing plants fled the country, taking with them important knowledge and expertise related to cashew processing. Before they abandoned their factories, some of them destroyed parts of the productive infrastructure and, if possible, turned their assets into cash (Hanlon 2000, 32; Sjaastad et al. 2007, 33). One year after independence, approximately 90%

of the white Portuguese population as well as a large number of persons of African and Asian origin had left the country.

This exodus of skilled personnel threatened to cause a standstill of the Mozambican economy. One response of the Mozambican Government under the rule of Samora Machel was the creation of g*rupos dinamizadores* (facilitating groups) whose task was to activate factories and to prevent sabotage by dissidents. In 1977, the Government of the Mozambique Liberation Front (FRELIMO) adopted a Marxist-Leninist constitution. Two years later, it introduced a national economic plan that prioritised industrialisation and the creation of state farms as well as of communal villages run as co-operatives (Newitt 2017, 154–59).

Before independence, 14 cashew processing factories were operating in Mozambique. Seven were taken over or 'intervened in' by the state holding company *Cajú de Moçambique*, which was created in 1979. Five factories remained private and the remaining factories closed down or had already stopped operating (Leite 2000, 298). The newly appointed managers of the state factories kept the factories running, however, there were no investments in new machinery (Hanlon 2000, 32). The socialist Mozambican Government under Machel continued to govern the cashew sector through high regulation, protection and control, consistent with the central planning of the economy. It determined fixed producer prices and trading margins and established the State Secretariat of Cashew as the central body to govern and control the cashew industry in the late 1970s (McMillan, Rodrik, and Horn Welch 2002, 5).

The system of central planning combined with the Mozambican civil war (1977-1992) had negative effects on the production of RCN and the processing industry. The existing marketing system was disrupted due to the civil war, the exodus of Portuguese and Indian traders who had run the *cantinas* (small retail shops), and the lack of consumer goods that farmers were previously able to trade for RCN. Farmers were forced to resettle to newly created communal villages as part of the Government's communal village plan. They were now obliged to abandon the cashew trees which they had earlier on been forced to plant by the Portuguese colonisers. Later during the war, farmers fled to larger cities or to camps for internally displaced people and were afraid to return to their trees. As a result, large parts of the Mozambican cashew tree population were left abandoned, trees were not taken care of and orchards were not renewed. This contributed to the ageing of the tree population and a decrease in production. A lack of

other food crops, e.g. peanuts, and low prices for RCN did not provide incentives for farmers to sell RCN (Hanlon and Smart 2008, 90; Leite 2000, 297).

Cashew production declined significantly after independence from 190.000 tons in 1974 to 120.000 tons in 1976 and to 22.000 tons in 1990 with devastating effects on the processing industry. Lack of investments and efficiency in the state-run factories decreased the production of kernels and CNSL. To combat the decline of the local processing industry, the Mozambican Government prohibited exports of RCN in 1978. While the cashew sector contributed 30% of the value of the country's exports in 1978, its contribution decreased to 12% in 1990. At the beginning of the 1990s, only one factory in Monapo, Nampula Province run by the Portuguese-Mozambican Entreposto Group remained operational (Leite 2000, 299). Although RCN production had declined sharply, it now exceeded the country's processing capacity (McMillan, Rodrik, and Horn Welch 2002, 5).

In sum, the governance of the cashew sector during the period of nationalisation from 1975 to 1990 largely followed the governance model practised under Portuguese rule, i.e. high protection, control, and regulation. The level of production and processing declined sharply due to the socialist Government's system of central planning and the civil war. This ushered in a loosening of state control in the late 1980s when Mozambique entered into its first structural adjustment programme with the World Bank, as discussed in the following section.

Privatisation and Liberalisation: 1991-1999

The privatisation of *Cajú de Moçambique*, Mozambique's holding company of the state-owned processing factories, started in 1991.[61] In the same year, the State Secretariat of Cashew was privatised (The World Bank 2006, 52), however, it effectively remained a parastatal. End of 1994, all formerly state-owned factories had been sold to established local traders of Indian origin and the wife of a former minister of agriculture. Furthermore, six new, mainly foreign-owned factories opened their gates between 1995 and 1998 (McMillan, Rodrik, and Horn Welch 2002, 7). In 1997, there were 15 operational cashew processing factories with a capacity to process 75.000 tonnes of RCN per year (Hanlon 2000, 33).

[61] A detailed overview of how the ownership structure of firms changed over time is provided in Chapter 7.

When the Mozambican Government started to privatise the cashew sector, a regime of protection was in place, including a permanent export ban. The ban had been an important incentive for local entrepreneurs to invest in the sector. Starting in the harvesting season of 1991/1992, the Government gradually began to liberalise the sector, implementing a range of highly contested reforms. First, it replaced the system of fixed producer prices by a system of minimum prices set by the Cashew Committee.[62] Second, the Government ceased to control producer prices payed by cashew processors to farmers (The World Bank 2006, 52). Third, it allowed the export of 10.000 tonnes of RCN per harvesting season. Finally, it introduced a surtax of 60% on exports of RCN.

In the following harvesting season, the export tax was reduced to 30% and in 1993/1994 the quantitative restrictions on RCN exports were loosened. One year later, the export ban on RCN was lifted altogether. The export tax was reduced to 20% in 1995/1996 and to 14% in the following two harvesting seasons. In addition to reducing the export surtax, the Mozambican Government abolished the provision to supply the local processing industry with RCN first before exports of RCN could start. Table 5.1 provides an overview of the changing policy and institutional framework in the cashew sector from the colonial era until 2019.

Table 5.1. Policy and Institutional Framework of the Mozambican Cashew Sector 1975-2019

Period	Industrial Policies	
Before 1975	• Fixed producer prices • Fixed marketing margins	High Regulation & Control (1900-1990)
1975-1990	• Fixed producer prices • Fixed marketing margins • Export ban on RCN (from 1978) • Creation of the State Secretariat of Cashew	
1991/1992	• Government control over producer prices eliminated • Privatisation of the State Secretariat of Cashew • Export restriction of 10.000 tonnes of RCN/harvesting season • 60% export surtax	Liberalisation & Privatisation (1991-1999)
1992/1993	• Export restriction of 10.000 tonnes of RCN/harvesting season • 30% export surtax	

[62] The Cashew Committee consists of members of the National Cashew Institute (INCAJU), Mozambican customs, and cashew value actors. It meets regularly to discuss and decide on issues related to the cashew sector.

1993/1994	• Export restriction of 10.000 tonnes of RCN/harvesting season • Auction of additional quantities of RCN to registered exporters • 30% export surtax	Liberalisation & Privatisation (1991-1999)
1994/1995	• Export restrictions lifted • 20% export surtax	
1996-1999	• 14% export surtax • Creation of the National Cashew Institute (INCAJU) (Decree 43/97)	
1999-2019	• 18%-22% surtax on RCN exports • Right of first refusal for cashew processors • Temporary export ban from October to December/January until processing industry has been supplied • Fixed Free on Board (FOB) reference price set by the Government every month • Guarantee fund for processors (20% of tax revenues) • Provision of seedlings and chemicals to producers and agricultural research (80% of tax revenues)	Severe Export Restrictions (1999-2019)

Source: the author, based on McMillan et al. (2002), The World Bank (2006) and Abbas (2014).

The international financial institutions (IFIs) pushed the highly indebted Mozambican Government to fully liberalise the cashew sector by the harvest season of 2000/2001 by making financial assistance conditional on a full liberalisation of the sector.[63] However, starting in 1997, factories started to close down, leaving thousands of factory workers without jobs. On the one hand, factories closed because they lacked RCN for processing. On the other hand, factory owners were not able to finance (and lacked the know-how) to modernise their factories.

The decline of the cashew processing industry provoked heavy criticism by the opposition party Mozambican National Resistance (RENAMO), left-wing factions within the ruling FRELIMO party, the cashew industry, labour unions, the media, and further national and international civil society actors. In contradiction with the agreement with the IFIs, the Mozambican Parliament passed a bill in 1999 that increased the RCN export surtax to 18%-22%, depending on the current market conditions. This bill is still in place today and the export tax has not exceeded 18% since 1999 (McMillan, Rodrik, and Horn Welch 2002, 7; Pitcher 2002, 227).

[63] The fight between the IFIs and the Mozambican Government related to the liberalisation of the cashew sector is discussed in more detail in Chapter 7.

To sum up, starting from 1991, the Mozambican Government privatised the cashew processing industry and gradually lifted protectionist industrial policy measures, including a system of fixed producer prices and an export ban on RCN, which had been in place since the colonial era. The full liberalisation of the sector was further promoted by the IFIs. Liberalising the sector was made a condition for Mozambique to qualify for financial assistance and debt relief. The decline of the industry and pressure from RENAMO, civil society actors, and FRELIMO factions who opposed the Government's liberalisation course pushed the Government to adopt a protectionist cashew law in 1999 that opposed the IFIs' requirements. The following section discusses in more detail why the cashew processing industry broke down.

Breakdown of the Cashew Processing Industry: 1999-2002

All large-scale processing factories that were set up during the colonial era stopped operating in the late 1990s or after the international cashew price collapse between 2000 and 2002. By 2002, only four recently established small-scale factories that received support from the World Bank were operational (McMillan, Rodrik, and Horn Welch, Table 3). However, these factories only processed around 2.000 tonnes of RCN per year and provided employment to merely 625 workers when running at full capacity (McMillan, Rodrik, and Horn Welch 2002, 21–22; Sjaastad et al. 2007, 40).

The local investors that had bought the capital-intensive processing units during privatisation blamed the reduction of the tax on RCN exports and the elimination of RCN export restrictions for the breakdown of the processing industry. They argued that they had not had enough time to modernise the factories they had purchased from the state and that they lacked RCN for processing because the Government had abolished the provision to supply the local processing industry with RCN first, before RCN exports could start. While the liberalisation of the cashew sector played a role in the decline of the sector, its breakdown at the end of the 1990s was the result of a combination of underlying problems related to low levels of RCN production, low producer prices, and the failure to modernise processing facilities.

First, RCN production in Mozambique was generally too low to supply the processing industry. Failed agricultural policies in the 1970s and the consequences of the civil war had already decreased the levels of production. The reforms in the 1990s did not include support to farmers to take better care of their cashew trees and to renew and increase the tree population.

Cashew trees in Mozambique were old (most of them planted during the colonial era), suffered from pests and diseases, and had been neglected during the war, leading to low productivity levels of only 1 to 2 KG per tree (Hanlon 2000, 32).

Second, smallholder farmers had no incentives to take care of their trees, let alone to invest in new trees, because producer prices were low. According to the IFIs, the liberalisation of the cashew sector intended to increase producer prices – and subsequently the production of RCN. At first, the reforms of the sector seemed to produce the desired effect. Prices for cashew producers increased once traders of RCN were allowed to export. However, large wholesale traders established a cartel that undercut the expected increase in prices for cashew producers which ought to incentivise producers to invest in cashew production.

A group of approximately a dozen traders divided up the cashew growing area in Mozambique among them and agreed on a price for RCN. Increases in export prices trickled through a chain of traders that each captured parts of the benefits from liberalisation, reducing the benefits for cashew producers at the lower end of the chain (McMillan, Rodrik, and Horn Welch 2002, 2; Pitcher 2002, 229). According to Pitcher (2002, 229) "*the government ha[d] liberalized the trade without liberalizing the wholesale traders*". A former employee of an international organisation also highlighted that these large trading houses tried to keep competitors out of the sector by raising the price for RCN when new competitors tried to enter the market. When they gave up and left the sector again, traders brought the price back down (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo).

Not only RCN traders and exporters benefitted from lower producer prices but also cashew processors. To some extent, the processing industry contributed to its own downfall because it payed low prices to producers and had neither promoted production nor established more stable relationships with producers (interview with Emaju/Director, 16 March 2018, Nampula).

On top of these factors, the world market price for RCN collapsed by more than 40% from US$700 to US$415 per ton in 2001, reducing producer prices dramatically. The price collapse also affected cashew processors as the cashew kernel price dropped by ca 35% (Aksoy and Yagci 2012, 32).

Third, devastating floods and a cyclone that hit Mozambique at the end of 1999 and the beginning of 2000 temporarily displaced almost half a million Mozambicans and disrupted the

economic recovery of the country after the civil war. Due to the two natural disasters, cashew yields were lost, and trees died, reducing the quantity of RCN for processing and export.

Fourth, an overlap between cashew processors and RCN exporters contributed to the lack of RCN for processing. Some state-owned cashew factories were sold to influential traders that engaged in exporting RCN, next to processing cashew nuts (Pitcher 2002, 230). Hence, some of the factory owners complained about the liberalisation of the sector and the lack of supply of RCN for their factories while they were exporting RCN to India (McMillan, Rodrik, and Horn Welch 2002, 31).

Fifth, the breakdown of the sector was also caused by a lack of investments to modernise the factories that had been set up during the colonial era. These factories used a capital-intensive, fully mechanised system to cut open and deshell RCN and had processing capacities of up to 12.500 tons of RCN per year. This technology was outdated and not competitive compared to the labour-intensive manual processing technology used in rural India (Aksoy and Yagci 2012, 3). The location of the large-scale factories in larger cities did not suit the Mozambican context where cashews are grown by smallholder farmers dispersed all over the country and transport infrastructure is poor.

The new factory owners also struggled with labour costs. Not only were they required to pay arrears for past labour. The Mozambican labour law also provided that workers had to be compensated for periods during which factory gates remained closed due to a lack of supply, if workers had not been formally informed of a factory closure (McMillan, Rodrik, and Horn Welch 2002, 25).

In sum, the World Bank's advice to liberalise the cashew sector in the 1990s was based on a best case scenario. The Bank pushed for a "*text book free market policy*" (Hanlon 2000, 29) that did not take into account the low productivity of trees, prevailing market imperfections in the cashew sector, price fluctuations, high transport costs, and most importantly the political economy of the sector. As a result of the collapse of the processing industry, 95% of the cashew yield in the campaign of 2002/2003 was exported as raw nuts (Hanlon and Smart 2008, 96). The ratio between RCN used for processing and RCN for exports only became more balanced in the second half of the 2000s once the processing industry had been revived as discussed in the following section.

Revival and Consolidation of the Cashew Processing Industry: 2002-2019

The breakdown of the cashew processing industry was a disaster, but it also led to a restructuring of the industry. The cashew policy framework that had been adopted in 1999 installed an 18-22% tax on RCN exports as well as a range of support measures for RCN producers and the national processing industry that are discussed in more detail in section 5.2 below. This created incentives for cashew processing in Mozambique that supported the revival of the sector. The rehabilitation of the cashew sector was primarily pushed forward by a U.S. non-profit organisation called TechnoServe with the support from INCAJU, the Bureau for the Promotion of Small Industry (GAPI)[64] and a Dutch nut broker called Global Trading and Agency (GTA) who had experience in cashew processing and trade in Sub-Saharan Africa.

At the beginning of the 2000s, a Dutch volunteer working for McKinsey conducted an Industry Strategic Plan for TechnoServe on the cashew sector that concluded that Mozambique could be competitive in cashew processing if it introduced the manual processing system mainly used in rural India. Only one factory in Mozambique, located in Geba in the far north of the country, had introduced this manual technology at that time. The factory was owned by the Portuguese João Ferreira dos Santos (JFS) group but stopped operating in 2002. The manager of the factory in Geba was an Indian national called Shakti Pal who had previously developed IT-systems for cashew factories in India. He knew how to manage a factory using the Indian processing technology and was able to improve and adapt it to the Mozambican context (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo).

TechnoServe hired Shakti Pal as a multiplier who would teach entrepreneurs in Mozambique how to establish and run a cashew processing factory and provide trainings for factory workers. Around the same time, TechnoServe established contact with Antonio Miranda, a Portuguese businessman who grew up in Mozambique and had previously worked for Coca Cola. With the support of TechnoServe and Shakti Pal Miranda opened the first of a series of new processing factories in 2002 in a small town called Mogincual in Nampula Province.

[64] GAPI is a financial development institution that was founded in 1990. Since 2013, GAPI is an alliance between public and private investors with the Mozambican state holding a 30% share, private investors 55% and civil society 15% (Club of Mozambique 2016b). GAPI focuses on capacity building, e.g. trainings for entrepreneurs, and promoting national entrepreneurship and on building a more inclusive financial system by granting credits to SMEs, credit refinancing and providing credit guarantees GAPI (2020).

In the course of the support programme from 2002-2009, TechnoServe supported 26 entrepreneurs, most of them with little or no experience in cashew processing. Miranda's factory served as a blueprint and within six years, 24 new factories started operating (Paul 2008, 11–12). Whenever a new factory opened its gates, workers from an already running factory trained workers at the new factory (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo).

All but one of the entrepreneurs that participated in TechnoServe's programme left the sector again by the end of the 2000s, mainly due to a lack of managerial capabilities, and a group of new, mainly foreign investors became involved in cashew processing. As the sector consolidated to the best operators, the processing capacity of the factories increased while the number of cashew processing firms decreased. From 2012 onwards, processors started to re-mechanise their factories to increase productivity and decrease dependence on manual labour. The processing capacity of the Mozambican cashew industry has increased from one third to more than half of the available production in Mozambique (USAID 2018, 14). Since 2016, foreign investments in the sector are increasing, among others from India, China, and Vietnam. There are currently 19 processing plants with a capacity to process up to 70.000 tons of RCN.

To sum up, the cashew processing industry in Mozambique was set up by the Portuguese colonisers and used to be the country's largest export. During the colonial era and the period of nationalisation the industry was heavily protected. The Mozambican Government started to gradually liberalise the sector in the 1990s after it had entered into its first structural adjustment programme with the World Bank and shortly after the state-owned factories had been privatised. The decline of cashew processing began in the 1980s and resulted in a complete breakdown of the industry at the end of the 1990s. This gradual breakdown was mainly caused by two factors: 1) a lack of RCN for processing as a consequence of failed agricultural policies in the 1980s, the civil war, low producer prices that discouraged farmers to renew the overaged tree population and improve agricultural practices, an increase in RCN exports as a consequence of liberalisation, and natural disasters; and 2) a lack of investments to modernise run-down factories in order to become globally competitive. The breakdown of the cashew processing industry lead to a sharp increase in RCN exports in the first half of the 2000s.

The decline of the processing industry was accompanied by a range of controversial reforms that aimed to fully liberalise the sector. In an attempt to save the processing industry and thousands of jobs of factory workers, the Mozambican Government adopted a cashew law in 1999. The law introduced an 18-22% tax on RCN exports and a range of supportive measures for RCN producers and local processors. It created incentives for cashew processing in Mozambique that supported the revival of the sector starting from 2002. TechnoServe played an important role in reviving the sector and in making cashew processing attractive again for local and foreign investors. Today, the cashew sector is a dynamic and growing sector that is attracting foreign investments mainly from India, China and Vietnam and that benefits from extensive industry protection. The following section provides an overview of the sector's current policy and institutional framework.

5.2 Policy and Institutional Framework

The adoption of the cashew law in September 1999 put an end to a decade of constant policy changes. Coming from a highly regulated policy environment with fixed prices and marketing margins along the whole value chain, the turn towards liberalisation in the 1990s had destabilised the sector. When the Government adopted the law, it was under severe pressure from the IFIs with whom it had agreed to fully liberalise the cashew sector. At the same time, the processing industry, civil society, the opposition party RENAMO and some FRELIMO parliamentarians called for protective policies to save the dying industry. In an attempt to strike a balance between these diverging interests, the new law introduced a tax on RCN exports and supportive measures for cashew producers and processors. This policy framework is still in place today. The following section provides an overview of the individual policy measures of the 1999 cashew law and their target groups as well as the sector's formal and informal institutions.

Policy Framework

The current cashew policy framework is mainly based on five legal documents: 1) Decree No. 43/97 establishes the creation of INCAJU; 2) Law No. 13/99, also called the cashew law, lays out the policy measures to promote the Mozambican cashew sector; 3) Ministerial Order of 30

November 2001 establishes the creation of the cashew committee; 4) Decree No. 33/03 revises the provisions on the export and marketing of cashew nuts established in the cashew law; and 5) Decree No. 78/2018 amends the policy measures towards the cashew sector adopted in the cashew law. The Cashew Master Plan 2011-2020 (*Plano Director do Cajú*) sets further targets for the sector related to increasing overall RCN production and quality, the marketing of RCN, cashew processing and export. It also foresees to increase INCAJU's capacities to monitor the cashew sector and to collect statistical data.

The current policy measures towards the cashew sector aim to promote RCN production and to support and protect the domestic cashew processing industry. The most important measure of the policy framework is an export surtax of 18-22% on the export of RCN to be paid at the time of boarding at the ports for a minimum of five years. Ever since the cashew law was adopted in 1999, the export surtax has been at 18%.

80% of the revenues generated through the export surtax are formally used for research carried out by the Mozambique Institute of Agricultural Research (IIAM), the production and distribution of cashew seedlings and the provision of chemicals to spray cashew trees. In 2015, INCAJU was running 38 tree nurseries that produced around 3.5 million cashew seedlings. However, only around 1.6 million seedlings were actually distributed (INCAJU 2018). Studies suggest that 60% to 70% of seedlings produced are either never planted or do not survive (USAID 2018, 9). Seedlings are partly distributed for free and partly sold at subsidised prices to cashew farmers. For instance, family producers pay 5-10 Meticais (US$0,08-0,17) per seedling and commercial producers 20-25 Meticais (US$0,33-0,41) in the Province of Cabo Delgado (interview with INCAJU/Employee, 13 March 2018, Pemba).

INCAJU's spraying programme only covers a part of the tree population, ranging from 50% (Tabora and Levi 2016) to only 16% (USAID 2018, 30), depending on the source. According to official data from INCAJU, 5.610.814 million trees were sprayed in 2017, an equivalent of around 7.5% of the total cashew tree population in Mozambique (INCAJU 2018). The spraying programme also suffers from bad management and corruption (interview with Independent Consultant, 6 March 2018, Maputo).

The remaining 20% of the revenues generated through the export surtax are used for a guarantee fund for cashew processors. The fund was created to facilitate access to finance for smaller cashew processors whose loan applications would otherwise be rejected by commercial

banks because of high risks. INCAJU covers 50-80% of the risks of the loan. The fund covers short term credits of a maximum of 3 million Meticais (approximately US$50.000). A second guarantee fund was set up at the Ministry of Industry and Commerce with support from USAID that benefits larger, well established cashew processors (interview with INCAJU/Head of Economic Department, 9 March 2018, Maputo). Effectively, the funds are not being used much by cashew processors because they do not tackle the general problem of high interest rates. Primary cashew processors have collateral. and therefore no difficulty getting access to loans. However, they are struggling with interest rates of up to 30% (interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

The tax on RCN exports is a strong protective measure that enables the Mozambican cashew processing industry to artificially compete with the processing industries in Vietnam and India despite its lower level of industry efficiency. It has been in force for almost two decades although it was originally introduced as a temporary measure that should be re-examined after five years. The 18% export surtax is one of the highest among cashew producing countries in Sub-Saharan Africa. In 2017, the Government approved the new INCAJU statues that establish the surtax on RCN exports as one of the sources of funding for INCAJU. This seems to formalise and legitimise the application of the surtax (USAID 2018, 10–14).

Next to the export tax, the 1999 cashew law establishes a right of first refusal for cashew processors to ensure that the processing industry is supplied with enough RCN. The right of first refusal gives cashew processors the right to buy RCN from RCN exporters that are registered as *contribuintes* (suppliers to the processing industry) at a fixed price (Free on Board reference price excluding the export surtax and export-related costs). By law, RCN exports are only officially permitted once the processing industry has accumulated sufficient RCN for their factories. De facto, this is a temporary ban on RCN exports that usually lasts from October until December or January every year during the harvest season. The National Cashew Institute (INCAJU) decides when the temporary 'export ban' is lifted based on the processing capacity and the level of RCN stocks of cashew processors.

This procedure is problematic because the Association of Cashew Processors (AICAJU) does not provide data on the level of RCN stocks that processors have left over from the previous harvesting campaign. According to an employee of INCAJU, the quantity of RCN that processors

say they require often exceeds their actual processing capacity.[65] As a result, the temporary ban on RCN exports is usually only lifted towards the end of the harvesting campaign when world prices for RCN start to decrease (interview with SINTIC/General Secretary, 10 March 2018, Maputo). Every year, this system sparks heated debates between cashew processors and exporters of RCN at the meetings of the cashew committee. RCN exporters complain that the current system prevents them from benefitting from a price premium of up to 15-20% during the months of September to December when the cashew yield in the northern hemisphere has not yet started.[66] Furthermore, they claim that processors indicate a higher processing capacity than they actually have to prolong the export ban.

In fact, the right of first refusal and the temporary export ban create a breeding ground for corruption at the ports and illegal RCN exports. An industry report by TechnoServe revealed that undeclared (illegal) RCN exports – also during the temporary RCN export ban – have augmented considerably since 2004. Exporters of RCN are trying to circumvent the 18% surtax on RCN exports and the temporary export ban by not declaring RCN exports (Correia 2015, 7).

In addition to the right of first refusal and the temporary RCN export ban, the Mozambican Tax Authority sets a monthly Free on Board (FOB) reference price for the export of RCN. The FOB reference price is linked to the quality of RCN exports (measured by determining the kernel outturn ratio KOR[67]) and depends on whether an exporter is a supplier to the processing industry (*contribuinte*) or not (*não contribuinte*). For instance, in March 2018 the FOB reference price for suppliers to the processing industry for RCN with a KOR of 44 was US$1.500 per ton and US$1.600 per ton for non-suppliers (Autoridade Tributária de Moçambique, Direcção Geral das Alfândegas 2018). If RCN exporters sell at a higher price than the FOB reference price, the tax authority charges 18% on this price. If exporters sell at a lower price, the tax authority

[65] In some cases, this creates a situation where RCN exporters export the surplus RCN from processors for a commission. An exporter of RCN claimed that he had delivered 300 tons of RCN to cashew processors to get his export permission. At a later stage, he exported 100 tons of these 300 tons for the cashew industry because it did not have the capacity to process it (interview with Asimoz Impex/CEO, 4 April 2018, Maputo).

[66] RCN exporters are often financed through investors from India or Vietnam. Mozambican RCN exporters and Asian RCN buyers agree on a price, e.g. in December when world market prices are high. At this point, exporters from Mozambique do not know when the temporary export ban will be lifted. By the time they can actually export, usually in January, world market prices have decreased and Asian buyers push prices down (interview with ACIANA/Vice President, 26 March 2018, Nampula).

[67] Kernel outturn is an internationally recognised quality indicator. It indicates the amount of usable cashew kernels after deshelling a bag of 80 KG of raw cashew nuts measured in pounds. The quality scale for cashew nuts is as follows: below 46 = poor quality, 46-48 = average quality, 48-50 = good quality, 50-52 = very good quality, 52-54 = excellent quality and 54-56 = highest quality (ACi 2012); CashewInfo (2017).

charges 18% based on the FOB reference price. According to the Head of the Economy Department at INCAJU, the FOB reference price was introduced in 2017 to combat tax evasion. Previously, RCN exporters indicated lower selling prices for RCN in order to pay less taxes (interview with INCAJU/Head of Economic Department, 9 March 2018, Maputo).

Finally, the reform of the cashew law in 2018 introduced a farm gate reference price that is set annually by the Ministry of Agriculture and the Ministry of Industry and Commerce before the cashew harvest season starts. The producer reference price needs to be approved by local value chain actors. As established in Decree 78/2018, the reference price has to be adjusted in case of price fluctuations above 10% for RCN and cashew kernels at global level. It is expected to serve as a tool to ensure a fair remuneration for cashew producers (Costa 2019, 56).

To sum up, the Mozambican cashew law establishes a range of measures to support cashew producers and to protect the processing industry. Due to shortcomings related to the implementation and design of these measures some fundamental problems of the cashew processing sector, e.g. low levels of production, high interest rates on loans, and corruption, prevail or even aggravated. The following section presents the sector's institutional framework.

Institutional Framework of the Mozambican Cashew Sector

From the public side, the National Cashew Institute (INCAJU), the Ministry of Agriculture, the Ministry of Industry, Commerce and Tourism, Mozambican Customs and to a lesser extent the Ministry of Labour are involved in the cashew sector. INCAJU is the main governing body of the cashew sector. It was created in 1998 by Decree No. 43/97. The Institute's purpose is to implement policies that promote cashew production and processing and to contribute to defining an adequate policy framework for the cashew sector. The institute is also responsible for monitoring the marketing of cashew nuts in Mozambique (INCAJU 2011). Human and financial resources are provided through the Ministry of Finance and Administration, the Agricultural Ministry and the Ministry of Industry, Commerce and Tourism. According to decree No. 43/97 INCAJU's funds are comprised of state funds, the surtax on RCN exports, subsidies from other public or private entities and from its own activities. INCAJU has its head office in Maputo and delegations in all cashew producing provinces. Since the adoption of Decree No. 30/2017, INCAJU's General Director and Deputy General Director are appointed by the Prime Minister and no longer by the Ministry of Agriculture.

INCAJU invites all actors along the cashew value chain as well as representatives of the INCAJU offices at province level, Mozambican customs and the National Cashew Workers Union (SINTIC) to regular meetings of the Cashew Committee. During the meetings the provincial delegations, customs, the Association of the Cashew Industry (AICAJU) and the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) report on the current harvest campaign, e.g. the levels of cashew marketing or RCN exports. Furthermore, the Committee members discuss controversial issues, such as the FOB reference price, the date for the end of the temporary export ban or corruption at the ports.

The meetings of the Cashew Committee serve several purposes. On the one hand, they ensure the exchange of information between public and private actors that are involved in governing the sector. On the other hand, the meetings of the Committee serve as a forum for decision-making, for instance the decision when exports of RCN can start. Probably the most important function of the regular meetings is that they provide a platform for informal meetings and lobbying by the different actors involved in the sector. Lobby activities by the cashew processing industry are channelled through the Association of the Cashew Industry (AICAJU). The association currently has seven members and is headed by two of the owners of the major local cashew processors Cajú Ilha (President) and Condor Cajú (Vice President). The Commercial, Industrial and Agricultural Association of Nampula (ACIANA) represents cashew traders and RCN exporters. The Association currently has approximately 50 members.

To conclude, the Mozambican cashew sector is heavily protected by an industrial policy framework that was adopted in 1999. This framework establishes an 18-22% surtax on RCN exports, a right of first refusal for cashew processors, a temporary ban on RCN exports, a fixed FOB reference price for RCN exports, a guarantee fund for cashew processors as well as a range of supportive measures to promote RCN production. On the public side, the National Cashew Institute INCAJU is the main governing body of the cashew sector. On the private side, the Association of the Cashew Industry (AICAJU) and the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) represent the sector's two major interest groups. Although cashew producers are officially the most important target group of the cashew law, their level of organisation and representation is low. The Cashew Committee functions as an important forum for the exchange of information, debates and lobbying for the different stakeholders of the sector. The debates in the Cashew Committee are dominated by a clash of interests

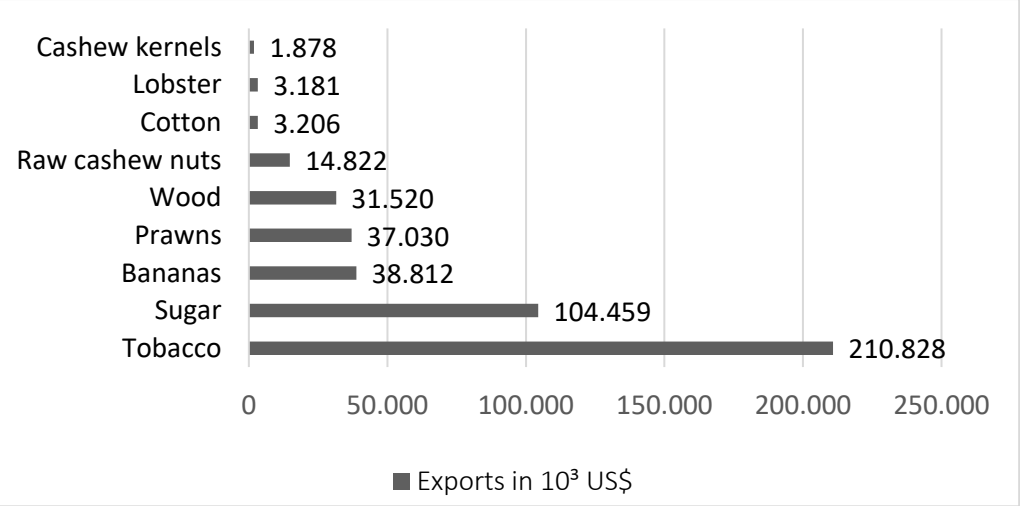
between cashew processors and RCN exporters. This clash is somewhat artificial as most of the large cashew processors are also involved in RCN exports.[68]

While the two previous sections have laid out the historical, legal and institutional background of the Mozambican cashew sector, the following section presents current data on the levels of production and processing in Mozambique as well as on exports of RCN and cashew kernels.

5.3 Profile of the Mozambican Cashew Sector

The agricultural sector in Mozambique contributes approximately 24% to the GDP and employs more than 70% of the country's labour force. The industrial sector contributes almost 20% to the GDP, however, it only provides employment to approximately 4% of the labour force. 21.7% of the labour force are employed in the services sector that adds approximately 57% to the GDP (CIA 2020). Hence, more than two thirds of the Mozambican population depend on the agricultural sector as a source of income. Figure 5.1 shows that cashews (raw and processed) rank among Mozambique's most important agricultural exports. In 2018, Mozambique exported RCN worth of approximately US$14.8 million and exports of cashew kernels amounted to approximately US$1.9 million (Instituto Nacional de Estatística 2018, 1).

Figure 5.1. Mozambique's Major Agricultural Exports in 2018



Source: Instituto Nacional de Estatística (2018, 1)

[68] By law, cashew processors are not allowed to export RCN. Entrepreneurs therefore register two companies, one for processing and one for exporting RCN.

This section first presents global trends in the cashew sector. It then provides a profile of the Mozambican cashew sector, including current figures on cashew production, processing, and exports of RCN and cashew kernels. The section also discusses the importance of cashew exports for the Mozambican economy.

Global Trends in the Cashew Sector

World production of RCN in 2017 was approximately 4 million tons (FAO 2017a). The global demand for cashew kernels has increased by 53% since 2010. Asia has overtaken the U.S. and the EU as the main consuming regions (Ravi 2017). The main consuming countries of cashew nuts are India, the U.S. and China (Chau 2016). In 2017, the world's top three RCN producing countries were Vietnam, India and Côte d'Ivoire. Asia is currently the world's largest producer of RCN, but Africa is catching up. In 2017, Asia produced 50.6% of RCN worldwide, African countries produced 44%, and the Americas 5.4% (FAO 2017a). In particular Côte d'Ivoire and Guinea-Bissau, have increased RCN production significantly (FAO 2017b).

The increase in RCN production in (West) African countries, however, does not correlate with an increase in cashew processing.[69] The processing capacity of African countries remains low, except in Mozambique and Kenya. Mozambique processes approximately 60% of the country's total cashew production and Kenya processes circa 80% of the cashews it produces, however, the overall RCN production in Kenya is very low. The local processing ratio in West African countries hovers between 0.2% and 5%. Togo presents an outlier with a local processing ration of 17.8% (Rabany, Rullier, and Ricau 2015). In contrast, Vietnam and India process more than 90% of RCN produced worldwide.

Vietnam (61% of world cashew kernel exports) and India (23% of world cashew kernel exports) are the world's main exporters of cashew kernels (International Nut and Dried Fruit Council 2019, 22). Both countries process far more RCN than they produce. Vietnam currently imports approximately two thirds of the RCN it processes (Chau 2016). Together, Vietnam and India account for 98% of world RCN imports. Both countries source more than 90% of their RCN imports from African countries (International Nut and Dried Fruit Council 2019, 22).

[69] Processing refers to removing the cashew kernel from its outer shell.

An important feature of the world cashew market is price volatility due to a tight balance between demand and supply. Between 2007 and 2011, the estimated average price range between the lowest and the highest monthly FOB export price for W320 cashew kernels was US$1.86 per KG (Red River Foods 2012, 20). Price negotiations with international buyers in African countries depend on the crop in India and Vietnam that is harvested earlier than in Africa. The two countries account for approximately 40% of the world RCN production. If the Asian crop is poor, prices and demand for cashews from African countries are likely to be high (Fitzpatrick 2011b, 20).

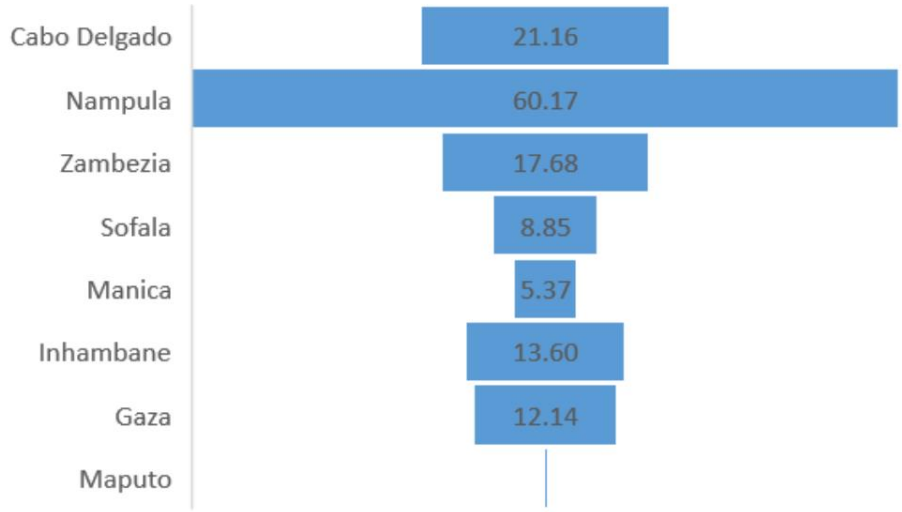
The market for cashew kernels and other products based on cashew nuts, e.g. cashew-based snacks, in Mozambique is limited. Trends in the Mozambican cashew sector and its competitive position are therefore closely linked to developments in the global cashew market, in particular to markets and their growth, access to new technologies and processing procedures as well as international food safety standards (USAID 2018, 10). The following section takes a closer look at the Mozambican cashew sector.

The Mozambican Cashew Sector in Numbers

Production

Cashew trees in Mozambique were first introduced by the Portuguese in the 16th century. They grow along the coast in areas where it is difficult to cultivate other crops. The tropical climate with high temperatures and a pronounced dry season offers ideal growing conditions for cashew trees. The main cashew growing area in Mozambique is the Northern Province of Nampula with approximately 60% of the total production. Figure 5.2 provides an overview of RCN production per province in the harvest season of 2016/2017.

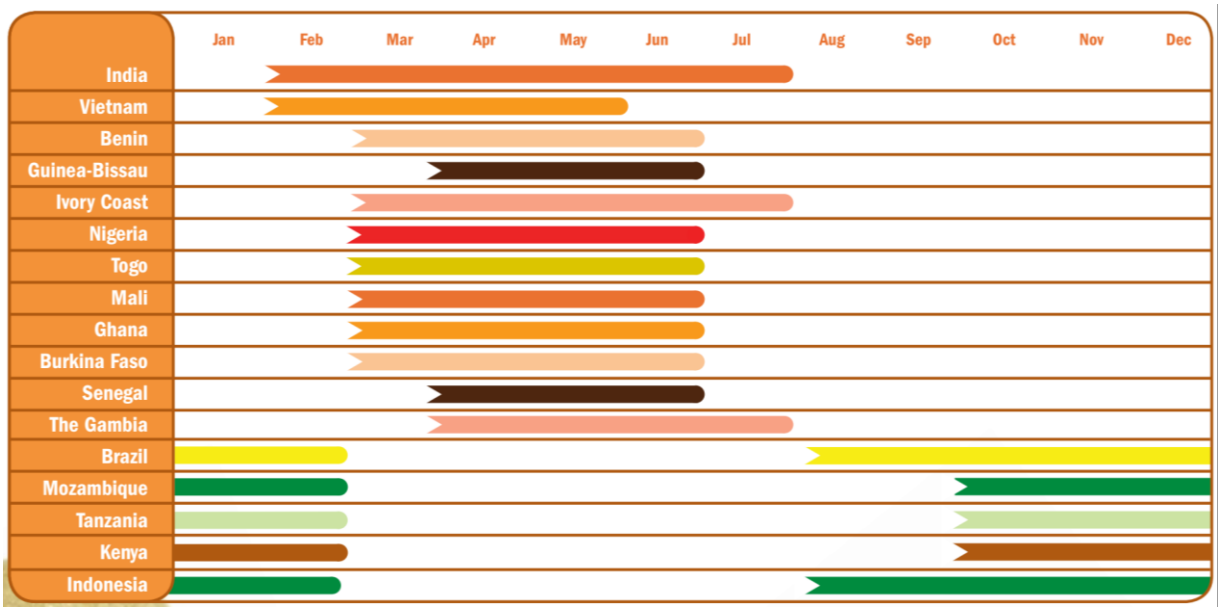
Figure 5.2. RCN Production in Mozambique per Province in the Harvest Season 2016/2017



Source: (Costa 2019, 34)

The cashew harvesting season starts in September in the north of the country and continues until January or February in the southern provinces, depending on the weather conditions (Red River Foods 2012, 5). This creates an advantage for East African countries because their yield takes place when countries in the northern hemisphere run out of stocks (see Figure 5.3) and the international market offers a 15-20% price premium on RCN (USAID 2018, 15).

Figure 5.3. Global Cashew Harvesting Seasons

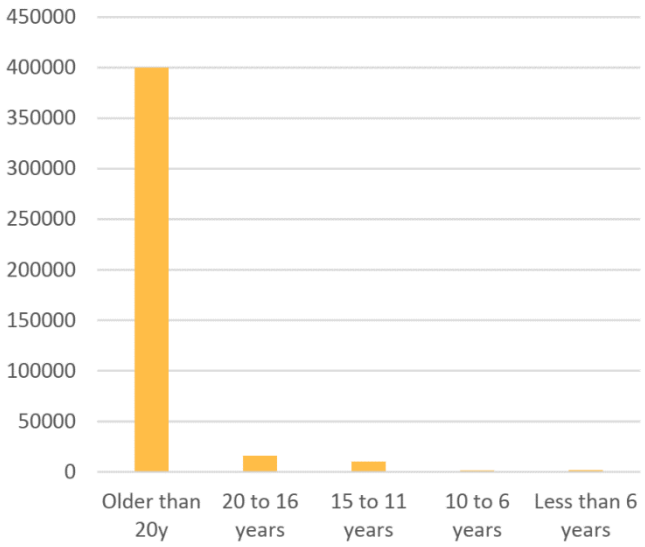


Source: Red River Foods (2012, 5)

Cashew trees are cultivated primarily by small-scale farmers. Poorer farmers own 5-25 trees (50-56% of all farmers), middle income farmers own 40-90 trees (25-35% of all farmers), and higher income farmers own 100-300 trees (10-15% of all farmers) (Aksoy and Yagci 2012, 15; Costa 2019, 35). Although some commercial plantations exist, their contribution to production is almost negligible. Approximately 1.3 million households (around 6.5 million persons) are involved in cashew production. 42% of farmers in Mozambique have cashew plants (ComCashew 2019). Newer data suggests that 7 million people in the whole cashew value chain in Mozambique benefit from cashew marketing. Cashew trading is an important source of income for rural families. On average, a family sells between 200 and 400 KG of RCN. This equals an average income of approximately US$300 per harvest season (Costa 2019, 33–35).

The productivity of trees and the quality of RCN in Mozambique is low compared to other Sub-Sahara African countries. On average, the productivity per tree reaches only 2-4 KG per harvest.[70] The average kernel outturn ratio (KOR) in Mozambique, a quality indicator for cashew nuts, is between 42 and 46, indicating poor quality (Costa 2019, 35, 42). Figure 5.4 shows that the vast majority of the approximately 33 million cashew trees in Mozambique is more than 20 years old and beyond the most productive age (Rabany, Rullier, and Ricau 2015, 33).

Figure 5.4. Distribution of Cashew Acreage in Hectares by Range of Age

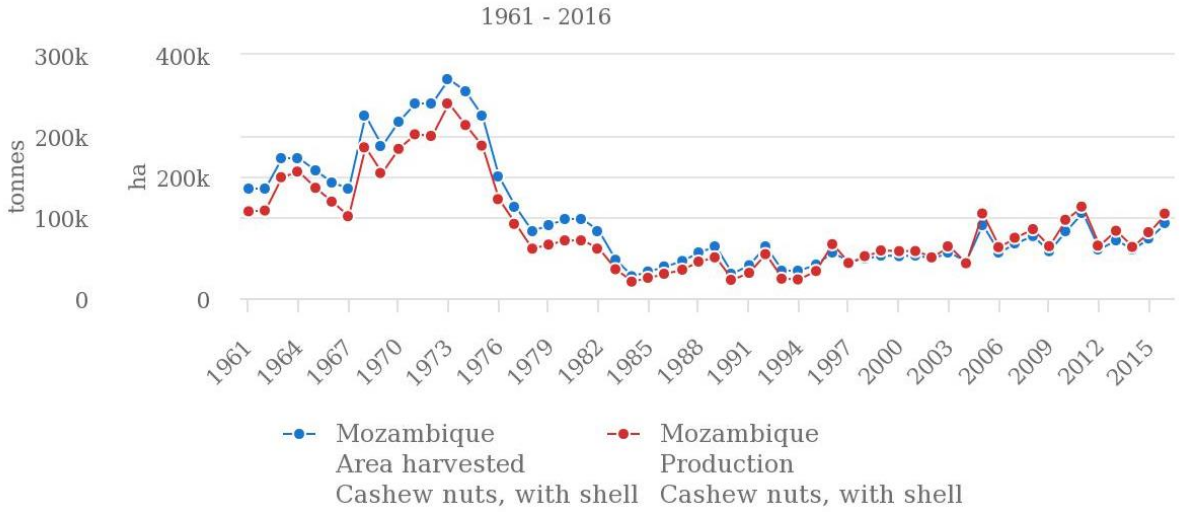


Source: Rabany, Rullier, and Ricau (2015, 33)

[70] Production per cashew tree can reach up to 10 KG. Trees start producing cashew nuts three to five years after planting. The average yield per tree reaches circa 2 KG at 3-5 years, 4 kg at 6-10 years and increases to 5-10 kg at 11-15 years. Although trees can live up to 50-60 years, most trees are only productive for 15-20 years.

RCN Production in Mozambique has varied greatly over time. Cashew production decreased from 240.000 tons in 1973 to 20.399 tons in the harvest season of 1983/84 and recovered to almost 140.000 tons in 2016/17. Figure 5.5 indicates the production of RCN and yield quantities in Mozambique from 1961 to 2016. Due to changing climate conditions, the growth pattern of raw nut production in Mozambique is uneven with sudden peaks.

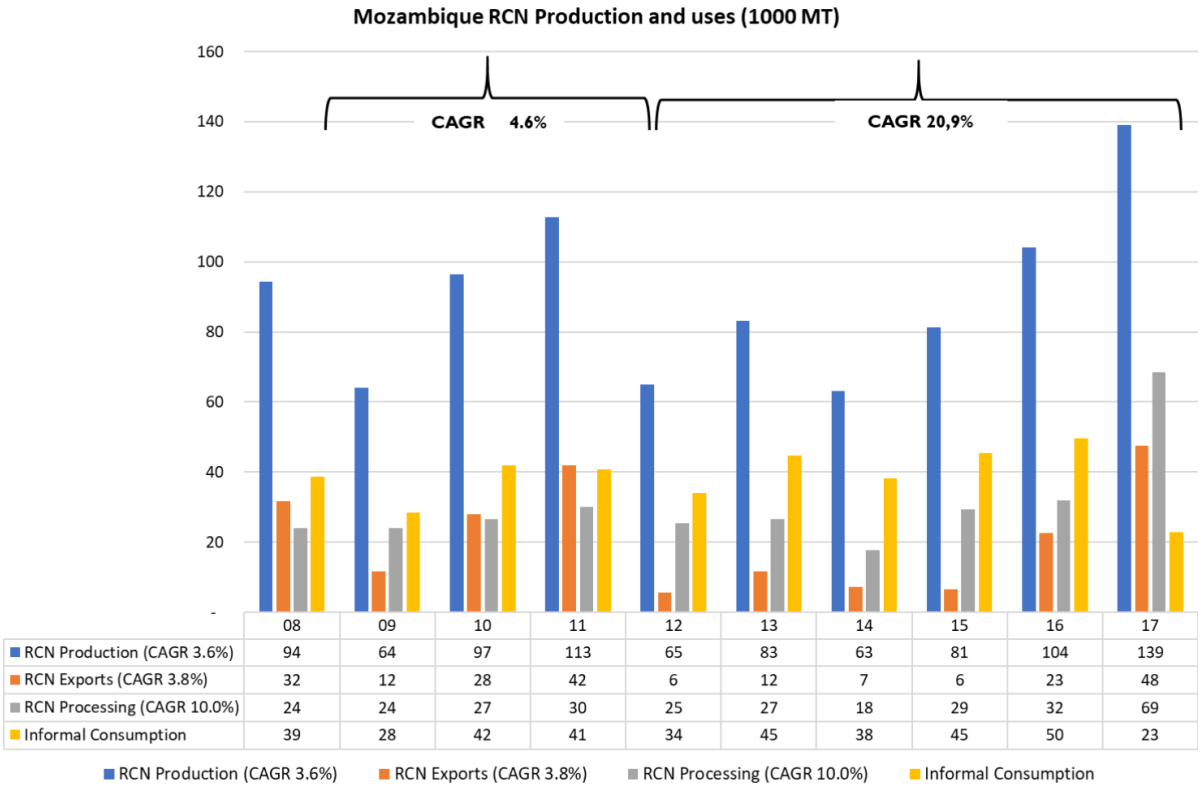
Figure 5.5. Production of Cashew Nuts and Yield Quantities in Mozambique 1961-2016



Source: FAO (2017a)

Available statistics on the production and use of cashew nuts in Mozambique are somewhat inconclusive. First, it is difficult to determine the total volume of production in a country where cashew nuts are grown by over one million families and data collection is weak. Second, a considerable amount of the total RCN production is not marketed at all. According to a study prepared for INCAJU, 47% of producers consume cashew nuts themselves, in particular if they only have few cashew trees (Neves João and Machava 2013, 63). Third, the volume of informal cashew nut trade within Mozambique and with neighbouring countries, in particular Tanzania, remains unknown (USAID 2018, 10). As indicated in Figure 5.6, a large share of cashew nuts is not traded on the formal market. According to a rough estimate by the Head of the Economy Department at the National Cashew Institute (INCAJU) only about 50% of RCN produced in Mozambique enter the formal market (interview with INCAJU/Head of Economic Department, 9 March 2018, Maputo).

Figure 5.6. RCN Production and Use in Mozambique 2008-2017



	08	09	10	11	12	13	14	15	16	17
RCN Production (CAGR 3.6%)	94	64	97	113	65	83	63	81	104	139
RCN Exports (CAGR 3.8%)	32	12	28	42	6	12	7	6	23	48
RCN Processing (CAGR 10.0%)	24	24	27	30	25	27	18	29	32	69
Informal Consumption	39	28	42	41	34	45	38	45	50	23

RCN Production (CAGR 3.6%) RCN Exports (CAGR 3.8%) RCN Processing (CAGR 10.0%) Informal Consumption

CAGR (compound annual growth rate) is a measure of growth over multiple time periods

Source: Costa (2019, 39)

Producer prices have increased significantly in the past ten years. While farmers received US$0,24 per KG of RCN in 2007, the average price in 2017 was US$0,88 per KG (INCAJU 2018). Cashew processors and traders indicated that they payed even higher producer prices in the 2017/2018 campaign, reaching up to US$1-US$1,40 per KG (interview with Emaju/Director, 16 March 2018, Nampula; interview with Sociedade Comercial Mesallo/Director, 16 March 2018, email interview). Nevertheless, producer prices in Mozambique are low compared to other Sub-Sahara African countries (USAID 2018, 25). This is due to the farmers' lack of knowledge on how to determine the quality of RCN and adequate farm gate prices, the high number and power of intermediary traders involved in the cashew value chain, and the 18% RCN export tax.

Overall, RCN production in Mozambique has increased since the mid-1980s, however, it remains far below pre-independence levels. The data related to RCN production and quality as well as to producer prices suggests that Mozambique is lagging behind compared to other Sub-Sahara African countries. Nevertheless, the cashew sector is of high significance for the rural

population, notably in the provinces of Nampula, Cabo Delgado and Zambezia in the centre and north of the country. The following section centres on cashew processing in Mozambique.

Cashew Processing in Mozambique

In 2018, 19 factories for primary cashew processing existed in Mozambique that were run by 12 local and foreign companies. 16 primary processing factories are located in Nampula Province, one in the Province of Cabo Delgado, one in Inhambane and one in Gaza. In addition to these factories, a small number of secondary processing units[71] were operating.

The cashew processing industry in Mozambique employs up to 17.000 workers[72] in its factories and has a capacity to processes approximately 70.000 tons of RCN per year (Costa 2019, 40). Annexes 9 to 11 provide an overview of all existing and planned primary and secondary processors in Mozambique, including their year of founding, location, processing capacity, ownership, number of employees and target markets. Map 5.1 underneath indicates the locations of primary and secondary processing facilities in Mozambique.

[71] Primary processing at the factory refers to separating the edible cashew kernel from its outer and inner shell. Secondary processing refers to roasting cashew kernels, adding flavours, such as salt or other spices, packing them into smaller units and labelling. Secondary processing can also refer to producing more complex cashew-based products, e.g. cashew milk or cashew butter. When talking about cashew processing in Mozambique, authors usually refer to primary processing.

[72] According to data from the National Cashew Institute (INCAJU) cashew processors employed 13.444 workers in 2017. The number of workers effectively working in the processing units indicated by cashew processors during my interviews is somewhat lower. A report published by USAID in 2019 indicated that up to 17.000 workers are employed in Mozambican cashew factories Costa (2019, 40). The report draws on data from AICAJU and the processor Condor Caju. The number of workers employed in factories fluctuates depending on the amount of RCN available for processing.

Map 5.1. Location of Primary and Secondary Processing Factories in Mozambique in 2018

▲ 1 primary processing unit

▲ 2 primary processing units

▲ 3 primary processing units

■ 1 secondary processing unit

■ 3 secondary processing units

Source: Club of Mozambique (2018b) and own data gained during field work in Mozambique from February to April 2018; Source of Map: Nations Online Project (2018)

Local ownership[73] in the cashew sector has decreased over time. There are currently only three locally-owned cashew processors left that sell globally – Condor, Caju Ilha and the company Indo Africa.[74] Most processing plants are operated by foreign firms, including two multi-nationals (Olam[75] and Export Trading Group ETG[76]), Chinese, Indian and South African investors. Five further processing plants were planning to open in 2018 or 2019 at the time of my field research. Of these future processing units, local entrepreneurs will run only one. The four other factories are Indian (one unit), Chinese (two units) and Vietnamese (one unit) investments.

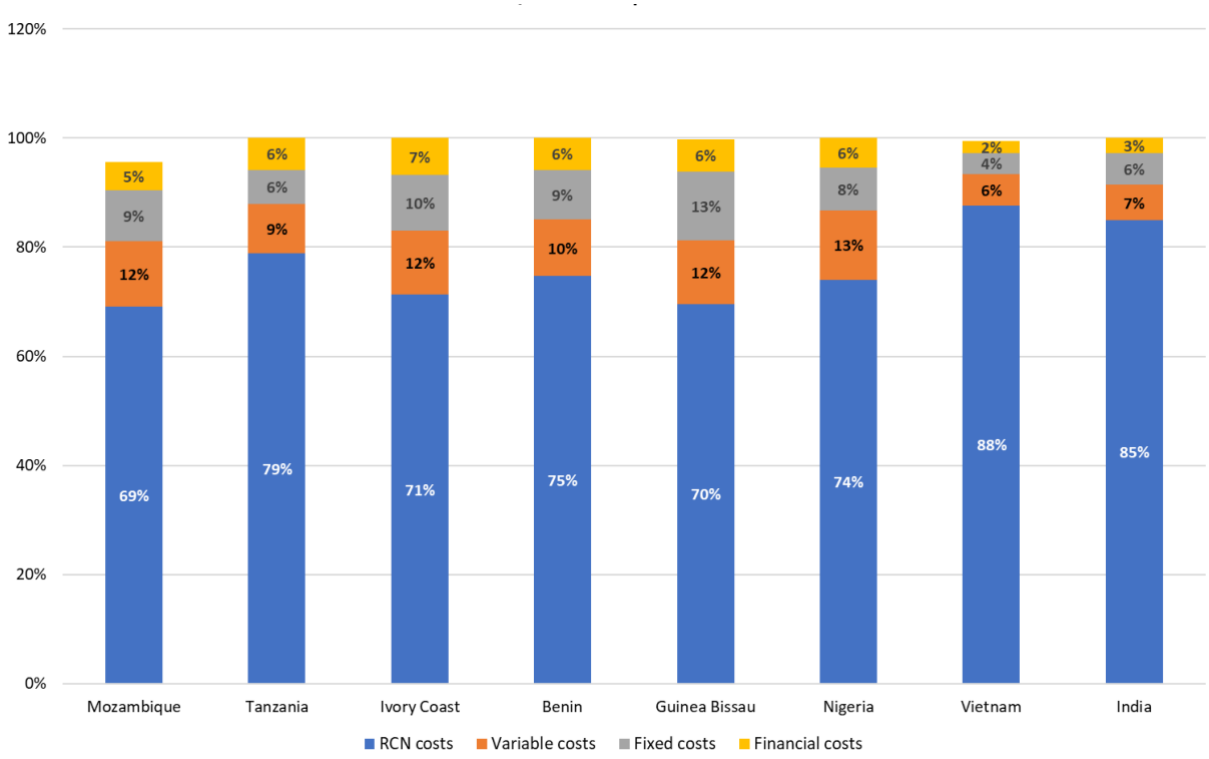
Local ownership in the cashew sector includes three types of owners: 1) local owners with Portuguese roots, e.g. the company Condor; 2) local owners with Indian roots that also export RCN, e.g. Caju Ilha and Indo Africa ; 3) local owners without foreign roots, e.g. the Cashew and Rural Development Centre of Itoculo[77], and the younger brother of former President Joaquim Chissano who owns a factory Madricil[78]. Cashew processing firms with foreign ownership also include three types of owners: 1) multi-national firms, such as Olam or ETG Korosho that export processed and raw cashews; 2) Foreign-owned processing firms whose owners also export RCN, e.g. Mocaju (India) and CA Company/Sunny (China); 3) foreign-owned processing firms whose owners only export cashew kernels, e.g. CN Caju (China), Jab Moz (South Africa) and DML Cashew Ltd. (India).

Although Mozambican cashew processors are not as efficient as their competitors in Vietnam or India and face high indirect processing costs, they are able to compete globally because of relatively low RCN costs. Figure 5.7 shows that the higher efficiency of Vietnam's and India's processing industry is able to compensate for higher RCN costs. Indirect processing costs in Mozambique refer to e.g. costs that arise due to bad infrastructure, inefficient customs

[73] Local firms include firms whose owner is an official citizen of Mozambique and firms whose owners have operated in Mozambique for a considerable amount of time and consider Mozambique their home – even if they do not hold a Mozambican passport (Staritz and Whitfield 2017, 3).
[74] The exports of Indo Africa are almost negligible.
[75] Olam is a Singapore-based, multinational food and agri-business involved in the production, processing, trade, and research and development. The company operates 180 processing facilities across the world, including several cashew processing factories in Sub-Saharan Africa (Olam 2020). Olam opened its first cashew processing unit in Mozambique in 2005.
[76] ETG is an integrated agricultural supply chain group that was founded in Kenya. It is one of the largest agricultural conglomerates in Africa and has operating entities in over 40 countries. The company is involved in procurement, warehousing, processing and manufacturing of finished goods (Export Trading Group 2020). ETG opened its first processing factory in Mozambique in 2005.
[77] Does not produce cashew kernels for export.
[78] This processing plant is currently not operational.

services, high import costs for spare parts, the customs clearing process at the port of Nacala or high interest rates for loans by local banks (Correia 2015, 20–21).

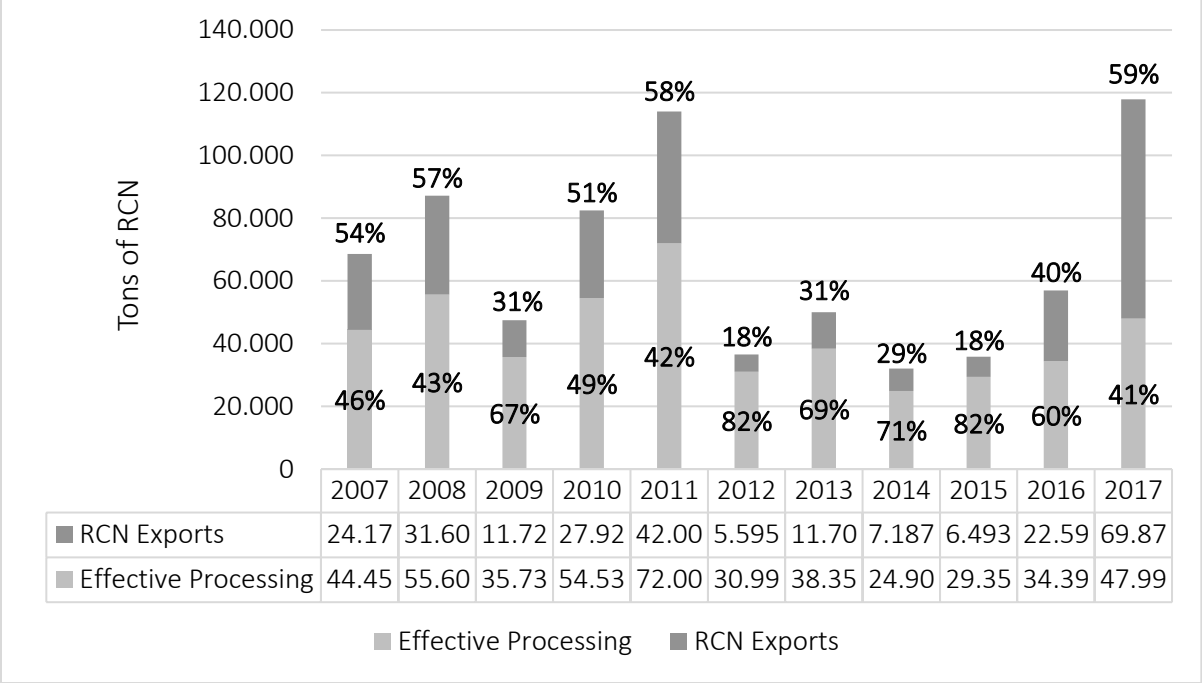
Figure 5.7. Compared Costs for Cashew Processors in African Countries, Vietnam and India



Source: (USAID 2018, 26)

Mozambique processes 60% of its cashew nuts locally (Rabany, Rullier, and Ricau 2015, 33). Compared to other Sub-Sahara African cashew-producing countries Mozambique's cashew processing ratio is high. According to data from INCAJU (2018), the average processing ratio in the past 10 years was 59%, however, it is not stable. The processing ratio of RCN that entered the formal market decreased from 82% in 2015 to 60% in 2016 and to 41% in 2017. Effective processing has increased in absolute terms due to higher levels of RCN production (see Figure 5.8).

Figure 5.8. RCN Processing and Export Ratios in Mozambique 2015-2017[79]



Source: own compilation based on INCAJU (2018)

Next to primary processors, a small number of secondary processing units exist in Mozambique. Three of these processing units are located in Maputo and one in Mueda in Cabo Delgado Province.[80] Domestic entrepreneurs run two of the secondary processing units, the other two are operated by a Portuguese and a U.S. entrepreneur. Only the foreign-owned secondary processors are currently exporting to Portugal and the U.S., respectively. Locally-owned secondary processors target the local market in southern Mozambique and South Africa. These processors together employ approximately 50 workers.

According to experts in the sector, there is a potential for in-country secondary processing, particularly due to the growing demand for traceability to source on behalf of consumers. Although these trends increase the potential for secondary processing in the Global South, gaining access to global markets is extremely difficult. Moreover, securing the supply of cashew kernels from local primary processors is not easy because they export near to all of their

[79] Figure 5.8 determines the RCN processing and export ratios for the available production in the formal market, i.e. RCN sold to the processing industry and official exports of RCN. Total production of RCN in Mozambique is higher than the sum of RCN exports and effective processing. Due to illegal exports of RCN and informal trade of RCN within Mozambique an across borders, it is difficult to determine the volume of total RCN production.

[80] During my research in Mozambique in spring 2018, I came across four secondary processing units out of which three were operational. It is likely that further, small-scale secondary processors exist.

product (Correia 2015, 8). Therefore, primary processors that invest in secondary processing probably have a higher chance of success because they are able to ensure the supply of RCN and decrease costs by cutting out a layer of the value chain.

To sum up, in 2019, 19 primary cashew processing plants existed in Mozambique, mainly located in Nampula Province. Most of the cashew processing factories in Mozambique are foreign owned. Cashew processors employ up to 17.000 workers and have a capacity to processes approximately 70.000 tons of RCN per year. The cashew processing ratio in Mozambique is high compared to other cashew-producing countries in Sub-Saharan Africa, however, the level of efficiency of the processing industry remains below the levels reached in India and Vietnam and other Sub-Sahara African countries. Secondary processing in Mozambique is still in its infancy. The following section provides data on the volume and destinations of Mozambican exports of cashew kernels.

Export of Cashew Kernels

The cashew industry processed between 18.000 tons and 34.000 tons of RCN between 2007 and 2016 but increased production significantly to 48.000 tons in 2017 (INCAJU 2018) and to 60.000 tons in 2018 (Club of Mozambique 2020). In 2019, kernel exports dropped to 52.000 tons and are expected to decrease further in 2020 (Club of Mozambique 2020) due to a lack of RCN for processing. Except for two processing units that sell small quantities to the local market or to secondary processors, all cashew kernels produced in Mozambique are exported. In 2017, the major export destinations for cashew kernels were the Americas (38% of total exports) and Asia (30% of total exports), followed by Africa (18%) and the EU (14%). Table 5.2 provides an overview of cashew kernel exports per continent in 2016 and 2017.

Table 5.2. Exports of Cashew Kernels per Continent in 2016 and 2017

	2016			2017		
	Exports in KG	Share of Exports in %	Average Price per KG in USD	Exports in KG	Share of Exports in %	Average Price per KG in USD
Africa	148.428,00	5%	$7,28	919.234,60	18%	$8,16
Asia	477.756,00	18%	$6,16	1.570.173,30	30%	$6,49
EU	365.268,00	13%	$7,90	714.420,00	14%	$6,70
Americas	1.722.264,00	63%	$7,78	1.945.261,00	38%	$8,41
Australia				14.400,00	0%	$8,54
	2.713.716,00	100%	$7,28	5.149.088,90	100%	$7,66

Source: own compilation based on Alfândega de Moçambique and Autoridade Tributária de Moçambique (2018)

At country level, the major export destinations for cashew kernels in 2017 were the United States of America with 37%, South Africa with 17%[81] and the United Arabic Emirates with 9% of total kernel exports (see Table 5.3).

Table 5.3. Share of Kernel Exports from Mozambique per Destination 2016-2017

#	Exports in KG	Destination	Export Share		#	Exports in KG	Destination	Export Share
1	1.918.044,00	U.S.A.	37%		11	118.152,00	Russia	2%
2	903.358,60	South Africa	17%		12	95.256,00	Portugal	2%
3	465.228,00	U.A.E.	9%		13	15.876,00	Canada	0%
4	324.545,30	Lebanon	6%		14	15.876,00	UK	0%
5	319.090,00	India	6%		15	15.876,00	Angola	0%
6	285.768,00	The Nether-lands	6%		16	14.400,00	Australia	0%
7	174.636,00	Vietnam	3%		17	11.340,00	Colombia	0%
8	167.522,00	Iran	3%		18	1.000,00	Turkey	0%
9	158.760,00	Norway	3%		19	1,00	Panama	0%
10	158.760,00	Italy	3%		Total:	5.163.488,90		100%

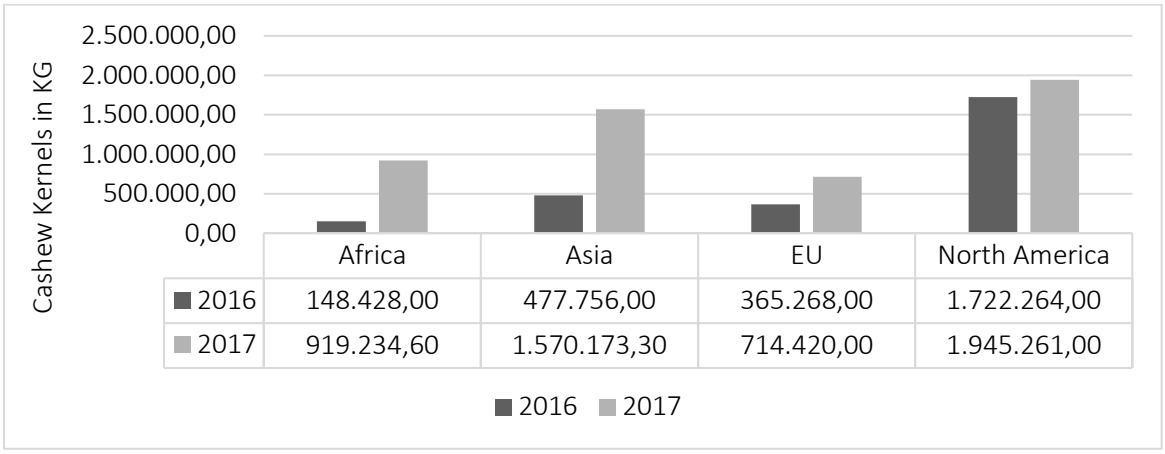
Source: own compilation based on Alfândega de Moçambique and Autoridade Tributária de Moçambique (2018)

Kernel exports have generally increased, particularly to Asia and Africa (see Figure 5.9). Kernel exports to Asia have jumped from approximately 0.5 million KG in 2016 to approximately 1.5

[81] South Africa is not a major consumer of cashew nuts or cashew-based products but some of the multi-national cashew processors have offices in South Africa and export their cashews through South Africa.

million KG in 2017. Kernel exports to African countries have increased from approximately 150.000 KG in 2016 to almost 1 million KG.

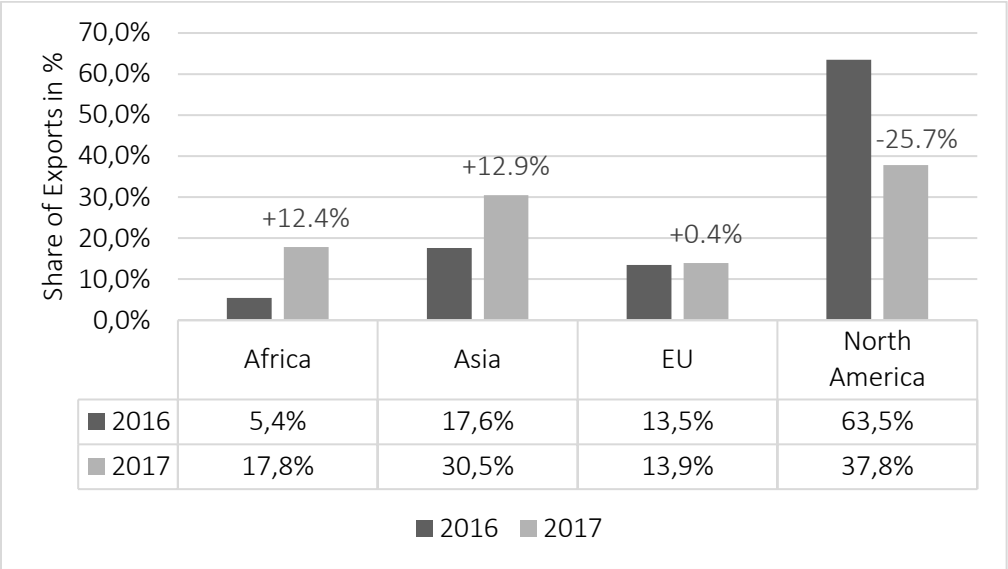
Figure 5.9. Increases in Mozambican Exports of Cashew Kernels by Continent in 2016 and 2017



Source: own compilation based on Alfândega de Moçambique and Autoridade Tributária de Moçambique (2018)

Figure 5.10 shows that the share of kernel exports to Asia has increased by 12.9% (from 17.6% in 2016 to 30.5% in 2017) and to Africa by 12.4% (from 5.4% in 2016 to 17.8% in 2017), respectively. North America remains the most important export destination for cashew kernels from Mozambique, however, its share of kernel exports has decreased by 25.7% from 63.5% in 2016 to 37.8% in 2017.

Figure 5.10. Share of Mozambican Exports of Cashew Kernels by Continent in 2016 and 2017



Source: own compilation based on Alfândega de Moçambique and Autoridade Tributária de Moçambique (2018)

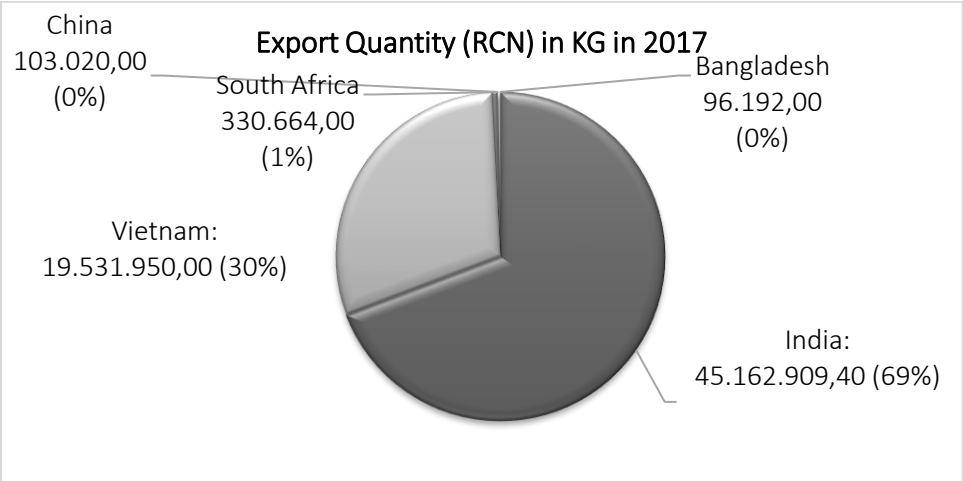
The buyers of Mozambican cashew kernels are international secondary processors, e.g. Caro Nut, Kraft Heinz Foods, and wholesalers (see analysis of the cashew value in Chapter 6). The value of cashew kernel exports (FOB price) in 2017 amounted to US$38.973.332,76 million (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018).

The data above shows that Mozambican cashew processors are selling their product to multiple end markets, including export destinations with high standards, such as the U.S. and the EU. The increasing global demand for cashew kernels in general, and in particularly a growing appetite for cashews in some Asian countries, e.g. China, has pushed the Mozambican cashew industry to increase production. The following section focuses on Mozambican exports of RCN.

Exports of Raw Cashew Nuts

Although the local processing industry is absorbing larger quantities of the local RCN production, declared exports of RCN from Mozambique are growing because of an overall increase in RCN production (INCAJU 2018). The end markets of RCN exports, however, are not as diverse as for the export of cashew kernels. RCN exports are absorbed by the primary processing industries in India (69%) and Vietnam (30%) and negligible shares are exported to South Africa, China and Bangladesh (see Figure 5.11).

Figure 5.11. Export Destinations of Mozambican RCN in KG in 2017



Source: own compilation based on Alfândega de Moçambique and Autoridade Tributária de Moçambique (2018)

To sum up, exports of cashew kernels and RCN have increased significantly in the past 15 years due to an increase in production and the in-country processing capacity. While virtually all RCN produced in Mozambique are exported to India and Vietnam, Mozambican cashew kernels are sold to all continents. Particularly, kernel exports to Asia have increased significantly. The increase in exports of RCN and cashew kernels augments the overall importance of the cashew sector for the Mozambican economy, as explained in the following section.

Importance of Cashew Exports for the Mozambican Economy

Exports related to the food, beverage and tobacco industries are Mozambique's most important exports, excluding the metal and extractives industries. In 2018, raw and processed cashew exports together were the sixth most important agricultural export after tobacco, sugar, bananas, prawns and wood (Instituto Nacional de Estatística 2018). The export value of processed cashew nuts increased significantly after the revival of the sector. It almost tripled in the past ten years from approximately US$12 million in 2007 to approximately US$30 million in 2017. The export value of RCN peaked in 2017 at US$109.031.871 million. However, this has been by far the highest value within the past ten years. Between 2007 and 2016, the export value of RCN oscillated between around US$8 million and US$55 million (see Annex 12) (INCAJU 2018).

According to official data, the average FOB price per ton for RCN exports was US$1.570 in 2017. The average FOB price per ton for cashew kernels was US$7.550. Revenues from the 18% RCN export tax amounted to approximately 288.3 million Meticais in 2016 or 0.18% of the taxes on international trade. In 2017, revenues from the RCN export surtax more than quadrupled to around 1.316 billion Meticais (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018). Annex 13 provides an overview of RCN exports per destination, average FOB prices and revenues from the export surtax in 2016 and 2017.

In sum, developments in the Mozambican cashew sector are closely linked to the global cashew market because Mozambique exports near to all RCN and cashew kernels it produces. Mozambique has a competitive advantage because its cashew harvesting season runs contrary to the harvesting seasons in the world's major cashew producing areas India, Vietnam and West Africa. Cashew production in Mozambique is scattered across the country and provides an income to more than one million households. The productivity and quality of RCN is low due to an overaged tree population and poor farming practices. Producer prices have increased in recent years but remain low compared to other Sub-Saharan African countries.

The cashew processing industry in Mozambique has re-emerged as a dynamic and growing sector with 19 processing plants operating in 2019. The fact that a number of new, mainly foreign investors seek to become involved in cashew processing is a sign that the sector has consolidated itself. Compared to other Sub-Saharan African countries, Mozambique's processing ratio is high (around 60%), making the cashew industry a considerable source of formal employment for low-skilled workers in rural areas, in particular for women. While up to 17.000 workers are officially employed in the factories, approximately 150.000 people benefit from the salaries paid by the processing industry (USAID 2018, 34). Secondary processing in Mozambique exists but is still in its infancy. The focus of this study therefore lies on the primary processing industry in Mozambique.

Both, exports of RCN and of cashew kernels have increased since 2012. While virtually all RCN exports are destined for primary processors in India and Vietnam, the end markets for cashew kernels are more diverse. North America is the most important export destination for Mozambican cashew kernels, but Asia/the Middle East has been catching up. The following

section provides a summary of the findings discussed in this chapter and highlights some of the challenges of the Mozambican cashew sector and its industrial policy framework.

5.4 Conclusion

This chapter provided extensive background information on the Mozambican cashew sector. The first section traced the sector's history and its industrial policy framework from the colonial era until 2019. It revealed how the levels of production, processing and export evolved over time and explained why the cashew sector broke down at the beginning of the 2000s. Section two discussed the sector's current industrial policy and institutional framework. Moreover, it discussed a range of shortcomings of the current policy framework. Section three provided current figures on the levels of production, processing and exports of RCN and cashew kernels.

Mozambique used to be the world's largest cashew nut producer with a strong processing industry in the 1970s. The industry started to decline in the 1980s and broke down completely between 1999 and 2002 after periods of nationalisation (1975-1990) and privatisation and liberalisation (1991-1999). In 1999, the Mozambican Government adopted a cashew law that put an end to these periods of perpetual policy change that had destabilised the sector. The law established several protective measures to support the sector, including an 18-22% tax on RCN exports. Since 2002, Mozambique has witnessed a recovery of the cashew processing industry. The revival of the industry resulted from a fruitful collaboration between the private sector and international donors, in particular TechnoServe. Cashew processing has re-emerged as a dynamic industry that creates up to 17.000 low-skilled jobs in rural areas and attracts foreign investments from Asia.

Although the levels of production and processing have increased since the mid-2000s, the implementation of the cashew law has several flaws. Mozambique is struggling to bring production and processing back to pre-independence levels, which are used as a point of reference by public and private actors. An underlying problem of the Mozambican cashew sector is the (too) slow increase of RCN production, and the low quality of cashews compared to other Sub-Sahara African countries. The Mozambican Government's efforts to promote RCN production in the past 20 years were not able to tackle these problems. INCAJU's programmes to increase the production and the quality of RCN through the subsidised provision of seedlings

and chemicals to spray trees suffer from severe implementation problems. In addition, the strong role of the state in the area of production discouraged private actors to become involved in the sector, e.g. private tree nurseries. INCAJU's focus on small-scale farmers excludes the agricultural private sector, i.e. commercial cashew plantations, as an alternative source of RCN.

The tax on RCN exports established by the 1999 cashew law is one of the highest among cashew producing countries in Sub-Saharan Africa. There is a controversial debate on the advantages and disadvantages of the tax on RCN exports for different value chain actors. On the one hand, the tax hurts nut-growers because it decreases farm-gate prices. Exporters of RCN exert downward pressure on producer prices to compensate for the extra costs caused by the 18% surtax on RCN exports (The Economist 2019). On the other hand, the cashew processing industry benefits from low RCN prices. Low producer prices compensate for the lower level of efficiency and high indirect processing costs of Mozambican cashew processors compared to other cashew processing countries. Due to the tax, the Mozambican cashew processing industry is able to (artificially) compete globally – and to create up to 17.000 jobs locally.

Finally, the right of first refusal for cashew processors in combination with the RCN export ban have created a breeding ground for corruption at the ports and for illegal RCN exports. Data by TechnoServe suggests that undeclared RCN exports are increasing, also during the yearly temporary RCN export ban, hinting at a sub-optimal enforcement of the ban by Mozambican customs. The ban hurts RCN exporters and the Mozambican treasury. On the one hand, exporters of RCN lose out on high prices for raw nuts from September to December when the cashew yield in the northern hemisphere has not yet started. On the other hand, the Mozambican treasury loses out on (higher) tax revenues which it could collect during the ban and due to undeclared exports.

Despite its inefficiencies, the cashew sector exhibits opportunities for economic and social upgrading for cashew producers and processors. Whether producers and processors in Mozambique are able to seize these opportunities depends to a large extent on the power relations between the different actors in the cashew value chain. The following chapter discusses how the cashew GVC is organised, its governance structure and which opportunities for upgrading exist for cashew producers and processors in Mozambique.

6 Governance and Upgrading in the Global Cashew Value Chain

Agricultural global value chains (GVCs) can offer upgrading opportunities for local agro-processors and producers in low-income countries if they manage to acquire the technological capabilities (TCs) needed to break into GVCs. This chapter aims to provide answers to three questions related to upgrading in the cashew GVC. First, which capabilities do cashew producers and processors require to access the cashew GVC and to upgrade? Second, how does upgrading play out in the cashew processing sector? Third, which opportunities for upgrading exist for Mozambican cashew producers and processors in the cashew GVC? The chapter focuses on the time period between 2002 and 2019. 2002 marks the beginning of the revival of the cashew industry in Mozambique.

Upgrading opportunities in agricultural GVCs are shaped by the characteristics of agricultural GVCs or chain segments and their governance structures. An analysis of the governance structures in the cashew GVC and its upgrading opportunities is therefore important to understand why Mozambican cashew processors follow(ed) specific upgrading paths and use(d) specific sources of learning to build their capabilities.

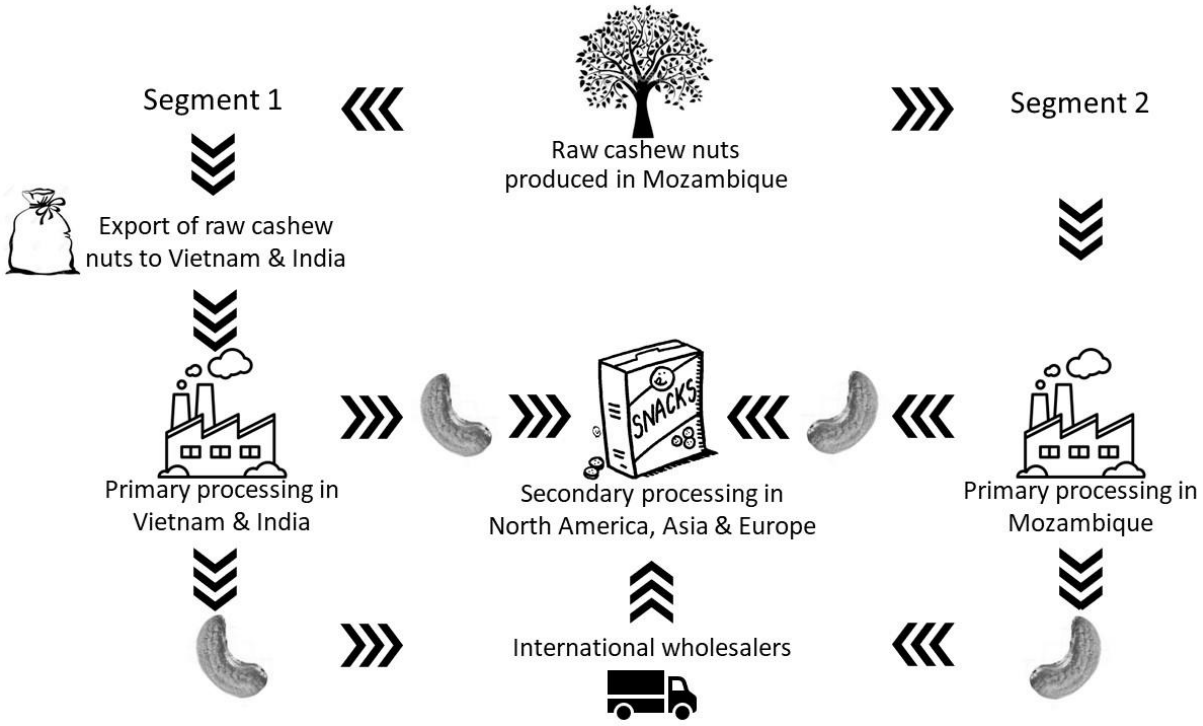
This chapter has four sections. The first section provides a detailed analysis of the cashew value chain in Mozambique and at global level. More particularly, it gives an overview of which actors it involves and with which functions. It also explains which actors hold powerful positions in the chain segments for RCN exports and cashew kernel exports and how they exert power. The second section of the chapter explores which capabilities Mozambican cashew producers require to break into the cashew GVC and which upgrading opportunities the cashew GVC offers them. The third section discusses which TCs cashew processors require to access the cashew GVC and to upgrade. This discussion builds on the technological capabilities matrix for the cashew industry presented in Chapter 4. The third section further lays out how different types of upgrading play out in the chain segment for cashew kernel exports and which channels of knowledge transfer it is likely to offer for processors in Mozambique. The fourth section concludes by discussing three important implications of the findings of this chapter.

6.1 Analysis of the Global Cashew Value Chain

The cashew GVC is an additive chain, i.e. it consists of various consecutive processing stages that each add value to the raw cashew nut. Production and primary processing of cashews (removing the cashew kernel from its outer shell) take place in the Global South, mainly in Vietnam, India and Brazil. Secondary processing (roasting cashew kernels, adding flavours, packing them into smaller packages and branding) takes place in the Global North, mainly in the U.S. and the EU.

The cashew value chain in Mozambique is a differentiated value chain with two segments, one for the export of raw cashew nuts (RCN) to Asia and one for the export of cashew kernels to North America, Europe and Asia. The first chain segment involves the export of RCN from Mozambique to Vietnam and India for primary processing. In the second chain segment, primary processing takes place in Mozambique. As illustrated in Figure 6.1, the two chain segments merge again at a later stage as both cater to international secondary processors and wholesalers.

Figure 6.1. Chain Segments of the Cashew Value Chain in Mozambique



Source: the author

The two chain segments of the Mozambican cashew value chain involve different actors and therefore exhibit different governance structures and opportunities (and limitations) for upgrading for cashew producers and primary processors in Mozambique. The remainder of this section first looks at the organisation of cashew production and trade in Mozambique. It then explores the two chain segments and their governance structures in more detail.[82]

Cashew Production and Trade in Mozambique

Cashews are grown and harvested almost exclusively by small rural farmers that grow cashew trees on their plot or by *apanhadores* (pickers) that harvest abandoned trees. Some producers are organised in associations which in turn form forums (groups of associations) and unions (groups of forums). However, the marketing of RCN at producer level is dominated by individual initiatives. Farmers are generally linked to the market through community leaders or local traditional powers that aggregate RCN and are in touch with traders outside the community. Aggregators are usually farmers themselves and are well informed about the volume of RCN produced in their community and the RCN prices paid in other communities.

Communities sell their RCN to informal or formal intermediary traders that come to remote and difficult to reach rural areas during harvesting time from October to February. These intermediary traders – there can be several layers – have an important function in the value chain because they link small-scale producers and pickers to the market. Informal traders, often with Asian origin, operate without a legal license and are based on the roadside or in strategic villages. Formal traders, e.g. local commercial companies, are registered and usually have more stable relations with local communities because they buy several crops and therefore come to communities various times a year. They usually work for large wholesalers/exporters or processors who finance them in advance. Some RCN producers also sell directly to industrial cashew processors or small-scale artisanal processors that sell cashew kernels on the informal market, for instance by the roadside or at mini-bus stations.

In recent years, a growing number of so-called *paraquedistas* (parachutists) has been recorded during harvest time. Parachutists are unlicensed foreign intermediary traders that work on

[82] The value chain overview is based on studies by USAID (2018), Correia for TechnoServe (2015), Große-Rüschkamp and Seelige for GTZ (2010), Jones and Webber for the World Bank (2010), the Centre for the Promotion of Imports from Developing Countries of the CBI (2017), and own observations gained during field work in Mozambique from February to April 2018.

behalf of Asian or, in the north of the country, Tanzanian RCN importers. They appear in cashew growing areas at the beginning of the Mozambican harvest season in September and October when the RCN production in other cashew-growing regions, such as Asia, has not yet started and disappear after some weeks.

Parachutists usually offer higher prices than local intermediary traders or processors (in 2018 approximately 5 Meticais or 0,07 EUR more). This increases competition and local producer prices. The clients of parachutists make profits by selling RCN for a higher price in their home countries. Parachutists are linked to the problem of illegal RCN exports during the official export ban from September until December or January. They operate through their foreign clients' networks, in many cases declaring RCN as other agricultural products at the ports to circumvent the export ban (interview with INCAJU/Employee, 13 March 2018, Pemba; interview with Sociedade Comercial Mesallo/Director, 16 March 2018, email interview).

The high number of licensed and unlicensed intermediary traders not only leads to an aggressive business environment during harvesting time, it also deregulates producer prices and promotes harmful activities, such as manipulating the quality of RCN, the weight of jute bags and the circulation of capital of dubious origin (USAID 2018, 30).

To sum up, cashews in Mozambique are mainly grown by small farmers in rural areas. Most farmers sell RCN to formal and informal intermediary traders or to parachutists. Intermediary traders link small-scale producers to the market. At this stage, the value chain splits up into the two segments mentioned above. Intermediary traders sell RCN either to primary processors in Mozambique or to wholesalers/exporters. The following section discusses the chain segment for RCN exports in more detail.

The Chain Segment for RCN Exports

Wholesalers/exporters are large trading companies, most of them with Asian origin, e.g. Indo Africa Import Export or Export Marketing Company, or multinational agribusiness companies such as Olam. They export most of the RCN to Vietnam and India. Wholesalers/exporters also sell smaller quantities of RCN to primary processors in Mozambique.

RCN exports are only officially permitted once the local processing industry is supplied with RCN for in-country processing (see right of first refusal for processors discussed in Chapter 5).

They are financed through their own funds, credit institutions or through Asian RCN importers and need an export license (*credencial*) that is issued by the National Cashew Institute (INCAJU), the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) and the Association of the Cashew Industry (AICAJU).

RCN wholesalers/exporters dominate the chain segment for RCN exports in Mozambique. They have a well-established purchasing network and focus on securing large quantities of RCN. They play an important role in organising the flow of RCN from small-scale farmers in Mozambique to primary processors in Vietnam and India.

The chain segment for RCN is characterised by a high level of concentration on the buyers' side and a low level of concentration on the sellers' side. While there are almost 30 RCN producing countries worldwide, virtually all RCN were absorbed by India (45 %) and Vietnam (53 %) in 2017, giving the two countries a high market power (International Nut and Dried Fruit Council 2019, 23; Yun 2018). Within Mozambique, six trading companies counted for approximately 77% of the country's RCN exports in 2017. In contrast, production is scattered across approximately 1.5 million households (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018).

RCN exporters are powerful because they play an important role in determining RCN prices further down the value chain. The Mozambican Tax Authority sets a monthly minimum Free on Board (FOB) reference price for RCN exports to ensure that RCN from Mozambique are not sold below value which would reduce the state's tax revenues. RCN exporters push the price pressure created by the FOB reference price and volatile world market prices on to intermediary traders and ultimately to cashew producers.

At international level, a small number of big trading companies, e.g. Olam or ECOM, that handle more than 50.000-100.000 tons of RCN per annum and that play an important role in financing trading have the power to swing the RCN market. If these big powerful players reduce their interest in RCN for some time, prices decrease (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht).

In sum, the chain segment for RCN exports is dominated by large trading companies that mainly export RCN from Mozambique to Vietnam and India for further processing. These companies exert power by pushing the price pressure created by the fixed FOB reference price for RCN

exports further down the value chain – with negative effects on producer prices. The following section discusses the governance structure of the chain segment for cashew kernel exports.

The Chain Segment for Cashew Kernel Exports

In the chain segment for the export of cashew kernels, primary processors in Mozambique establish a link between international secondary processors that perform higher value-added activities outside Mozambique and local, small-scale producers. Mozambican processors export virtually all their product either directly to international secondary processors or to international wholesalers. Primary processors separate the edible cashew kernel from the raw nut. Secondary processing may include roasting and baking, blanching, flavouring, dicing, sieving and grinding as well as packaging and branding. Box 6.1 provides background information on primary cashew processing in Mozambique.

Box 6.1 From Nut to Kernel: Primary Cashew Processing in Mozambique

Cashew Products

Cashew trees produce the cashew apple and the cashew seed (nut). The cashew nut is attached to the bottom end of the cashew apple (s. picture 6.1). The upper end of the cashew apple is attached to the tree. The cashew apple can be eaten fresh, used for cooking, to make juice or alcoholic drinks, preserves, chutneys and jams. The Mozambican cashew industry only processes the cashew nut. However, informal selling and processing of cashew fruits is widespread. The cashew shell is of pliable nature, making it impossible to open manually or mechanically without previous heating. Heating the raw nut hardens the shell and makes it brittle. It is then possible to crack open or split the shell.

Picture 6.1. Cashew Apple and Nut

Source: the author

The tissue of the middle shell layer of the cashew nut contains a dark viscous liquid called cashew nut shell liquid (CNSL). This liquid contains skin allergens and therefore damages the skin of workers during manual cashew processing. CNSL is a natural resin that can be used in developing drugs, antioxidants, fungicides and biomaterials. Only one Mozambican cashew processor (Condor) currently extracts and markets this cashew by-product.

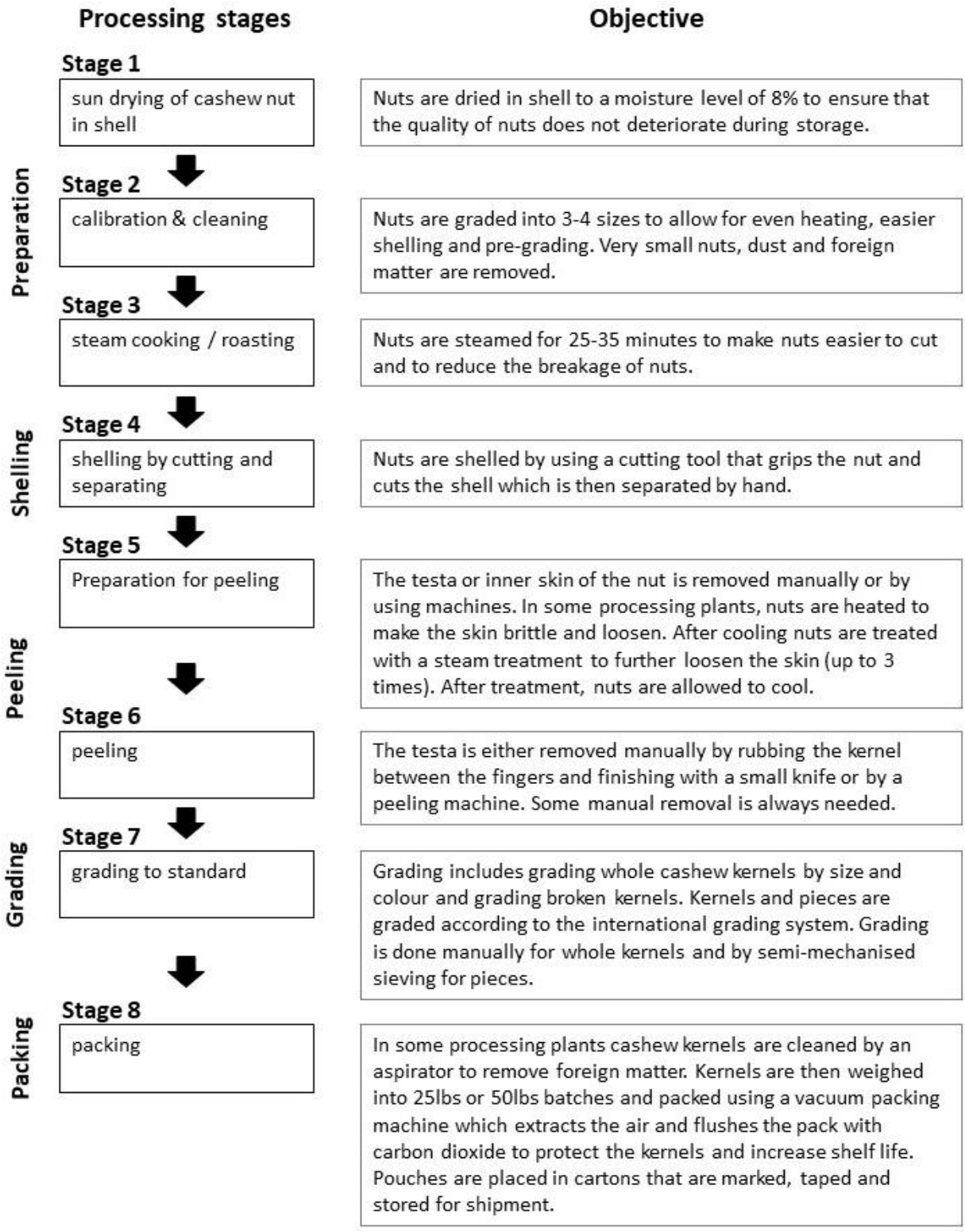
Measuring Processing Efficiency

Quantity and quality losses can occur at each of the processing stages described above. Quantitative efficiency refers to the yield of packaged kernels per unit of raw nuts. Qualitative efficiency relates to several criteria, such as the rate of whole and broken kernels and the colour and smell of kernels and is therefore more difficult to measure. Taken together, quantitative and qualitative efficiency determine the revenue per unit of raw cashew nuts.

The yield of packaged kernels (quantitative efficiency) primarily depends on the quality of raw cashew nuts. There is no difference in costs for processing a ton of high-quality cashew nuts and a ton of poor quality cashew nuts, therefore quality control prior to processing and access to finance to secure decent quality raw cashew nuts are important. Among others, the quality of raw cashew nuts is a function of its moisture content, fractions of defective nuts and foreign matter, and size. Qualitative efficiency is determined by the quality of processing which is a function of how a processing plant is managed. Factors that create potential quality losses during processes include excessive moisture in the storage of raw nuts, off-taste due to excessive time between shelling and drying, scorching and breakage in the drying oven, and carelessness in manual operations and handling (Abt Associates Inc. 1999, 8–9).

Cashew processing in Mozambique involves eight stages. Stage one, drying RCN in the sun, is completed by cashew producers. Stages two to eight take place at the factory. Figure 6.2 provides an overview of the individual processing stages of the steam and cut processing technique used in Mozambique.

Figure 6.2. Eight Stages of Cashew Processing in Mozambique



Source: the author, adapted from Fitzpatrick (2011a, 12)

International wholesalers that import cashew kernels from the Global South often take over several roles in the chain. Next to being wholesalers, some act as wholesale distributors, processors and packers. Wholesalers that import cashew kernels either sell to another layer of wholesalers with roasting and packing facilities, to secondary processors, or – if they run processing and packing facilities themselves – directly to end consumers. End consumers of cashew kernels include street markets, the food service industry, online sellers and – most importantly – retailers, e.g. supermarkets (CBI 2017).

In 2017, Mozambican processors (excluding the multinational companies Olam and ETG Korosho) exported approximately 40% of the cashew kernels they produced to wholesalers from the U.S., Portugal, the United Arabic Emirates, Lebanon, and Iran. Approximately 22% of cashew kernels from Mozambique were sold to secondary processors in the U.S., South Africa, and Norway. Processors earn between 1.5% and 3% more if they sell directly to secondary processors. Generally, the room for negotiation on kernel prices is small. According to one processor, the company was able to negotiate a US$5 price increase per pound of cashew kernels (interview with Condor Cajú/Manager, 20 March 2018, Nampula).

Thirty-three percent of the total kernel exports from Mozambique were bought by the two multinational trading companies Olam and ETG Korosho that also operate as primary processors and exporters of RCN in Mozambique. Olam is by far the largest buyer of Mozambican cashew kernels (around 1.509 tons in 2017).[83] The company exports all the cashew kernels it processes in Mozambique to its branches in the Netherlands, Italy, South Africa, Vietnam, India, the U.S., and Canada (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018).

Mozambican primary processors also sell very small quantities of processed cashew kernels to the domestic market for direct consumption or to secondary processors in Mozambique. Two of these secondary processors have accessed the U.S. and the Portuguese market, respectively, the others distribute cashews locally, mainly to hotels, restaurants, and small retailers, e.g. convenience stores (but not to large supermarkets).

The world market for processed cashew nuts shows less asymmetry between buyers and sellers, i.e. the levels of concentration on the buyers' and sellers' side are similar (McMillan,

[83] Total kernel exports in 2017 were ca. 5.163,50 tons (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018).

Rodrik, and Horn Welch 2002, 18). This is because primary processors in the Global South sell cashew kernels to secondary processors and to wholesalers. Both groups of actors have powerful positions in the chain segment for cashew kernels.

Secondary processors from the Global North, such as Caro Nut, Kraft Heinz or Intersnack, link primary processors to end consumers that demand high quality, safe foods. This creates high pressure for all value chain actors and has promoted the dissemination of standards. Not only do products from the Global South need to comply with public standards set by e.g. the EU or the U.S. Government. They also need to meet the private standards of food industry giants (Harilal et al. 2006, 19).

Large supermarket chains play a particularly important role when it comes to setting standards related to product quality and safety as well as production processes. In doing so, they pass the pressure at the consumer end of the chain on to international secondary processors. The latter in turn transfer parts of the responsibility for guaranteeing food and safety standards on to primary processors in the Global South.

The level of concentration among large international food processors is increasing and so is their power to determine the division of labour within the chain. In other words, they take over those processing steps in the cashew GVC that add higher value and make sure that processors from the Global South remain 'locked in' primary processing.

A study by USAID revealed that primary processors in Mozambique captured 8.2% of the value added in the chain in 2016 while international secondary processors captured the largest share of the value added in the chain with 34.65%. The second largest share of the value in the chain was captured by distributors and retailers at international level (33.08%). Only 29.68% of the total value added in the chain for cashew kernels was captured in Mozambique in 2016 (18.25% by cashew producers, 1.5% by intermediary traders, 1.74% by informal processors and 8.2% by primary processors) (USAID 2017).[84] International secondary processors have an interest in outsourcing primary processing to the Global South because removing the cashew kernel from

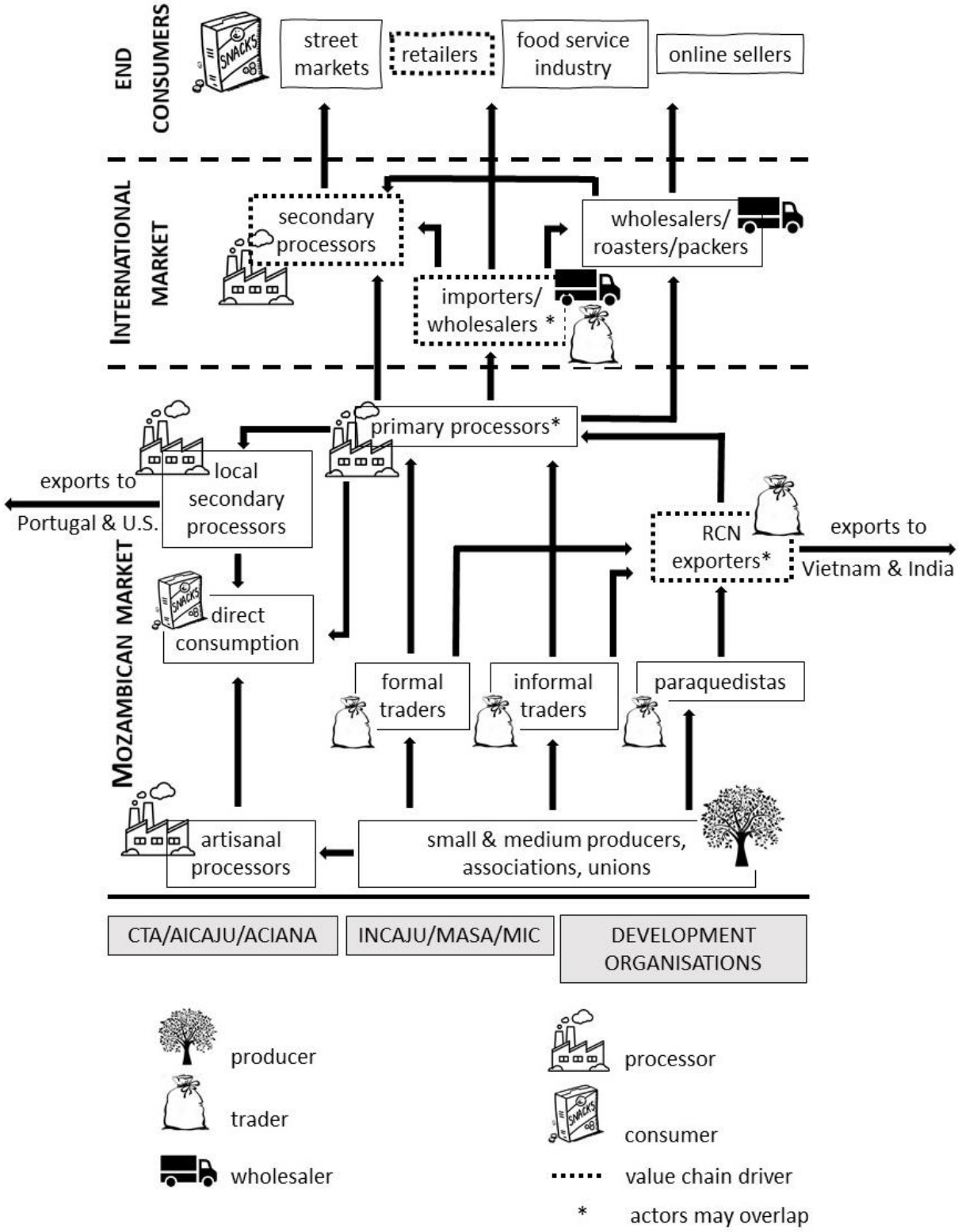
[84] The percentage of the value captured in Mozambique varies each harvesting seasons. In 2015, 49% of the value in the chain was captured domestically: 24% by producers, 4% by intermediary traders, 21% by primary processors, 7% by importers, 20% by roasters and packers (secondary processors) and 23% by retailers (Mishra and Martin 2016, 26).

its shell is a labour intensive task and it saves transport costs because the cashew kernel only makes up about one third of the total weight of the cashew nut.

International wholesalers/importers that import cashew kernels from the Global South are powerful actors in the kernel chain segment because they impact prices. Some multinational companies, such as Olam, are vertically integrated and take over several roles in the value chain. For instance, they are involved in local trade of RCN, are primary processors, export RCN and cashew kernels and are importers of RCN and kernels. Together with large secondary processors, they influence kernel prices through their buying behaviour.

The main driving force in the cashew kernel chain are large supermarket chains. They set food safety standards and dictate the terms of supply contracts, including prices, to secondary processors and wholesalers that do roasting and packing. The latter have few other opportunities to gain access to final consumers and are therefore at the mercy of supermarkets. As a consequence, they seek to increase their power vis-à-vis big retailers through mergers and acquisitions of smaller companies and new entrants (Harilal et al. 2006, 19). Figure 6.3 provides an illustration of the cashew value chain at Mozambican and global level.

Figure 6.3. Illustration of the Cashew Value Chain at Mozambican and Global Level



Source: the author, based on own observations, USAID (2018, 28) and CBI (2017)

As illustrated in Figure 6.2 above, several further organisations are involved in the cashew value chain in Mozambique. On the private side, they include the Association of the Cashew Industry (AICAJU), the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) and the Confederation of Industry Associations (CTA). On the public side, the National Cashew Institute (INCAJU), the Ministry of Agriculture (MASA), the Ministry of Industry and Trade (MIC) and to a lesser extent the Ministry of Labour are involved in the cashew sector. A number of international organisations, such as TechnoServe, the World Bank, GIZ or USAID, are implementing programmes to support the cashew sector and cooperate with public institutions and private actors along the value chain.

To sum up, this section explained how the cashew value chain functions at Mozambican and at global level and which actors exert power in the two segments of the chain and how. The chain segment for RCN exports is dominated by trading companies/wholesalers with well-established purchasing networks in Mozambique that focus on securing large volumes of RCN, rather than capturing quality-related margins. The main driving force in the chain segment for the export of cashew kernels are large supermarket chains that set product and production-related standards and dictate the terms of supply contracts to international secondary processors. The latter pass the pressure to guarantee specific food quality and safety standards on to primary processors in the Global South. Although secondary processors do not drive the chain segment, they have a powerful position because they determine the division of labour further down the chain and lock firms in the Global South into primary processing.

The following section discusses which capabilities cashew producers in Mozambique require to gain access to the global cashew value chain and which upgrading opportunities the chain potentially offers for cashew-growers in Mozambique.

6.2 Minimum GVC Requirements and Upgrading Opportunities for Cashew Producers in Mozambique

The capabilities required to enter the cashew value chain as an RCN producer are low because planting and harvesting cashew trees is not complex and the quality of cashew nuts is not checked at the farm gate. Producers' tasks are limited to (ideally) spraying and pruning trees, planting seedlings to replace old trees, harvesting RCN at the correct time of the year, letting

the nuts dry in the sun, and packing them into jute bags to avoid a too high level of moisture.[85] In fact, only the three latter activities are mandatory to be able to sell RCN in Mozambique.

RCN exporters and primary processors focus on securing large volumes of RCN and do not set and control specific product specifications. Potential upgrading paths for cashew producers centre on product upgrading, i.e. increasing RCN production and improving the quality of RCN (the kernel outturn ratio KOR) through improved agricultural practices. While higher producer prices may motivate farmers to increase production, incentives to improve the quality of RCN are missing. On the one hand, buyers do not check the quality of RCN at the farm gate and producers lack the capacity to measure the quality of the RCN they produce. On the other hand, as the global demand for cashews is growing, so is the competition for RCN during harvesting time in Mozambique. Cashew growers know that they will sell their crop, no matter the quality.

This disconnect between quality and price affects the upgrading opportunities for producers. RCN quality is only checked at the processing factories or by RCN exporters at the ports. While it is in the interest of processors and exporters that farmers increase the quality of cashews, their motivation to invest in training producers to measure nut quality is limited because this would empower producers to demand higher prices. A study by Basset et al. (2018, 1240–41) on the link between quality and prices in the value chain for RCN exports in Côte d'Ivoire argues that the lack of transparency related to RCN quality at different nodes in the value chain inhibits producers to benefit from product upgrading by adopting good agricultural practices. Instead, processors and exporters capture the benefits by paying relatively low prices for higher quality nuts. Much the same can be argued for the cashew value chain in Mozambique, which exhibits similar governance patterns as in Côte d'Ivoire.

Primary processors and RCN exporters generally do not provide support to cashew producers, e.g. extension services or providing chemicals. On the one hand, processors and RCN exporters have little incentives to invest in producers' capabilities because they have no guarantee that their investments will pay off. The relations between cashew producers and intermediary traders are loose and indirect. Exporters of RCN and primary processors are usually linked to cashew farmers through intermediary traders, hence there are few direct relations. Producers

[85] Individual farmers are too small and do not have the capacity to conduct agricultural research. Research is conducted at the Mozambique Institute of Agricultural Research (IIAM), financed through the RCN export tax.

sell their cashews to whoever comes first and/or offers the best price and not necessarily to agents who provided them with inputs to increase the quantity and quality of their yield.

On the other hand, INCAJU's support programme for cashew producers thwarts private initiatives that provide agricultural inputs to farmers because it distributes seedlings for free or at a low price and subsidises the spraying of trees. This reduced the willingness of cashew growers to invest in seedlings and chemicals because they expect to receive inputs for free or at a reduced price. Due to the programme's limited scope and success the levels of RCN production and quality remain far below their full potential.

A general problem of INCAJU's support programme as well as of the efforts by processors and RCN exporters is that they focus on supplying inputs rather than building capabilities among producers. However, integrating cashew farmers in capacity-building programmes (by processors, exporters, public institutions or donors) carries the risk of locking farmers into dependent out-grower relations that ensure a steady RCN supply for primary processors and/or RCN exporters but fail to remunerate farmers for improved farming practices that yield higher quality nuts due to the quality-price disconnect (Bassett, Koné, and Pavlovic 2018, 1244).

In sum, the capabilities required to gain access to the cashew GVC for Mozambican cashew growers are low, making it possible for small farmers with little crop-specific knowledge to participate in the chain. However, producers' upgrading opportunities are limited. While higher prices may motivate farmers to increase production, a disconnect between quality and price discourages them to invest in and to benefit from product upgrading. Neither private nor public actors are viable sources of knowledge transfer for producers. Primary processors and RCN exporters do not invest in improving agricultural practices among farmers because their relationships with producers are loose and indirect and they have an interest in keeping RCN prices low. INCAJU's support programme for producers has failed to increase farmers' capabilities due to its focus on supplying agricultural inputs and implementation problems.

The following section discusses which capabilities Mozambican cashew processors require to break into the cashew GVC and to upgrade.

6.3 What Does it Take to Produce and Export Cashew Kernels?

The level of technological capabilities that primary processors require to set up a cashew processing factory and to upgrade in the GVC for cashew kernels is considerably higher than for RCN producers. This section discusses which TCs cashew processors in Mozambique need to access the global cashew value chain and to upgrade. It particularly highlights which hurdles cashew processing firms face in the Sub-Sahara African context. The section develops a technological capabilities matrix for the cashew processing industry. The matrix provides an overview of the capabilities that firms require related to the categories investment, product and production process, and linkages. Based on the capability matrix, this section also explores how different types of upgrading play out in the cashew processing sector and which learning channels the cashew GVC is likely to offer for cashew processors in Mozambique.

Technological Capabilities Matrix for the Cashew Processing Industry

The technological capabilities matrix presented in this section aims to provide a more detailed overview of the capabilities that cashew processors in Mozambique require to access the cashew GVC and to upgrade (see Table 6.1 underneath). The vertical axis contains three levels of complexity of TCs: basic production capabilities, advanced production capabilities, and strategic diversification and secondary processing. The horizontal axis provides an overview of the investment, production and linkage capabilities at each level. Cashew processors may acquire new value chain functions by moving from basic or advanced production capabilities to strategic diversification and secondary processing. Processors may also deepen their capabilities by upgrading products, production processes, end markets, or supply chains.

The first row of the matrix summarises which capabilities entrepreneurs need to set up a basic, small- to medium-scale primary processing unit that uses a manual or semi-mechanised processing system and depends on a large, low-skilled workforce. Processors with basic production capabilities are only able to compete globally if they are able to purchase RCN at a low cost and have access to a cheap workforce. They tend to operate in countries in which the cashew processing industry is protected.

The second row adds capabilities that entrepreneurs need to run a predominantly mechanised factory that depends on a small number of higher-skilled workers, complies with international

food safety standards and caters to several end markets, including end markets with high food safety standards, e.g. the U.S. and the EU markets. There is currently a clear trend towards mechanisation among Asian and African cashew processors that is spearheaded by technological innovations from Vietnam that ensure a low kernel breakage rate.[86] Profitability of cashew processing is closely linked to extracting cashew kernels without breaking or damaging them because prices for broken or damaged cashew kernels are much lower (Fitzpatrick 2011a, 4). The industry is moving towards an integrated use of machines and automation to decrease dependence on manual labour. Replacing the traditional labour-intensive manual or semi-mechanised processing system by a capital-intensive, largely mechanised system increases the production capacity and efficiency of cashew processing plants. Although the final product remains the same and moving from the first to the second level of matrix does not involve functional upgrading, this shift requires ample capabilities.

The third row of the matrix focuses on capabilities needed for strategic diversification, i.e. engaging in secondary processing to produce cashew-based snacks for the local and regional markets. Exporting cashew-based products to northern markets is unlikely for cashew processors in Mozambique due to the powerful position of international secondary processors. However, the expansion of regional supermarkets in Sub-Sahara African countries creates new opportunities for primary processors in the Global South. The technologies needed to produce simple cashew-based snacks, e.g. salted roasted cashews, is not complex and the requirements by regional retailers may be less demanding in terms of food safety. Lower transport costs and costs for complying with international standards may outweigh lower net prices offered by regional supermarkets (Barrientos et al. 2015, 1272).

[86] For many years, machines were not able to achieve comparable breakage rates to manual or semi-mechanised processing systems.

Table 6.1. Technological Capabilities Matrix for the Cashew Processing Industry

		Investment	Product and Production Process			Linkages		
		Investment	Product	Production Process	Post-harvest Process	Logistics, Finance and Services	Input Supply Chain	End Markets
Complexity of Technological Capabilities	Basic Production Capacity: Primary processing	• access to capital for initial investments (e.g. production plant and processing equipment) • access to capital to buy RCN • choosing a location for the processing plant • choosing processing equipment • selecting and hiring staff	• meeting minimum quality required for target market(s) (e.g. in Asia) • meeting volume requirements of buyers	• training managers and workers • managing staff • maintaining manual processing equipment and production plant • monitoring labour productivity and quality control • managing stock keeping of RCN • complying with national regulations, e.g. related to hygiene • monitoring compliance with international and standards (optional)*	• transport to processing facility • calibration and cleaning • steam cooking and cooling • shelling/cutting (manual) • heating • steam treatment, cooling • peeling • grading • cleaning • weighing • packaging • transport to port	• negotiating contracts and managing relations with utility and service providers, e.g. water, electricity, transport • access to cargo booking and handling services • negotiating loans and managing relations with credit institutions	• establishing and managing relationships with RCN suppliers • sourcing quality packing materials • sourcing processsing equipment and managing relations with equipment suppliers • collaborating with other firms, e.g. to meet volume requirements of buyers, arranging transport logistics and handling (if firm cannot meet volume requirements from buyers)	• establishing and managing relations with international buyers (e.g. communication, account management, price negotiations, audits) • gathering market information

	Advanced Production Capacity: Primary Processing	• access to capital to buy new processing technology (mechanised) • choosing new processing equipment • access to finance to buy larger volumes of RCN • access to capital to buy food safety certificates and to implement required changes (e.g. factory layout, staff trainings)	• increasing the quality of cashew kernels by complying with international food safety standards (e.g. HACCP, BRC, ACA Seal) • reducing the kernel breakage rate	• increasing the production capacity • increasing efficiency • monitoring compliance with international standards • maintaining mechanised processing equipment and production plant • training managers and workers to use new machines and comply with food safety requirements	• see above but using fully mechanised processing technology	• establishing relations with training institutes and (international) consultants to gain knowledge (optional)** • establishing links to state support institutions and participating in public support programmes (optional)** • engaging in industry associations (optional)**	• broadening the supplier network to source more RCN • establishing relations with external engineers or training in-house engineers for equipment maintenance • negotiating contracts and managing relations with suppliers of processing equipment	• diversifying buyers and end markets and meeting requirements of new buyers • investing in market and buyer research

Complexity of Technological Capabilities	**Strategic Diversifi-cation: Secondary Processing**	• access to capital to buy processing equip-ment for secondary processing • choosing a location for the processing plant • choosing processing equipment for secon-dary processing • selecting and hiring staff • access to capital to source cashew kernels for further processing (optional)*** • access to capital to buy food safety certi-ficates and implement requirements at the factory (depending on buyer requirements)	• product development (e.g. snacks, cashew butter) • establishing a brand • packaging design	• complying with national regula-tions • maintaining processing equipment and production plant • complying with international food safety standards (optional) • training mana-gers and workers	depending on the type of product: • transport to processing facility • roasting/frying • seasoning • dicing • sieving • grinding • packaging and labelling • cooling • transport to retailers	• access to cargo booking and handling services for regional exports	• establishing and managing relationships with suppliers of cashew kernels (optional)*** • sourcing quality packing materials for new products • negotiating contracts and managing relations with suppliers of equipment for secondary processing	• finding and building relations with new buyers in the regional and domestic markets • managing own marke-ting • investing in market and buyer research

* Not mandatory to gain access to the global cashew value chain but some firms with basic production capacities comply with international standards

** Not mandatory but can be a potential channel of knowledge transfer and lobbying

*** Only relevant if firm sources additional kernels for secondary processing from other primary processors

Source: the author, based on data gathered through standardised questionnaires with managers and owners of local and foreign cashew processing plants in Mozambique, factory visits and expert interviews in 2018

The three levels of the capabilities matrix are not consecutive, i.e. cashew processors can move to a higher level even if they have not achieved the previous level of capabilities. It is possible that cashew processors set up fully mechanised factories that comply with international food safety standards from the beginning. In the same vein, primary processors may move towards secondary processing even if they have not reached advanced production capacities for primary processing.

The technologies used to process RCN vary in the main cashew-processing regions Brazil, Sub-Saharan Africa and Asia. Depending on the processing system, the capabilities that firms need to enter the cashew GVC and to upgrade may vary.[87] The Brazilian processing industry is an outlier with few capital-intensive, large-scale, fully mechanised factories with higher running costs and wage levels than in other processing regions (Fitzpatrick 2011a, 4). Only around 4% of the world RCN production are processed in Brazil (International Nut and Dried Fruit Council 2019, 22). The processing industries in Sub-Saharan Africa and Asia took a similar course. When the processing industry in East Africa was revived, processors installed the Indian manual or semi-mechanised steam and cut processing system suitable for smaller factories. This system spread across the African continent (Fitzpatrick 2011a, 11). The capabilities matrix therefore includes the capabilities needed for the processing system used in Asia and Africa.

The cashew capabilities matrix presented in this chapter is a simplified, static snapshot of the cashew industry today. Global competitiveness is a moving target because consumer tastes, technologies, prices, and the level of competition are constantly changing. Firm-level upgrading is a complex process and firms do not jump from one capability level to the next. Instead, they continuously invest in their capabilities to remain globally competitive. In doing so, they follow unique upgrading paths.

The following section discusses which technological capabilities cashew processors in Mozambique require to access the global cashew value chain.

Breaking into the Global Cashew Value Chain

Cashew processors that seek to break into the cashew GVC face four major hurdles. Firstly, cashew processors need large investment capabilities to purchase enough RCN to supply their

[87] For a detailed overview of the cashew processing systems used in Brazil, Vietnam, India and Sub-Saharan Africa see Fitzpatrick (2011a).

factories throughout the year. This is particularly challenging for cashew processors in Sub-Saharan Africa. While Indian and Vietnamese processors source RCN from several countries with varying harvesting seasons, Sub-Sahara African processors source all RCN they process locally. In other words, they need to buy enough RCN for a whole year within two to three months and need considerable stock-keeping capacities (Krause and Kaufmann 2011, 41). The costs for purchasing RCN account for 85-95% of total processing costs (USAID 2017, 24). A Mozambican processor with a capacity to process 2.000 tons of RCN per year needs to be able to spend approximately US$2 million during the cashew harvesting season to secure enough RCN for the whole year.

Compared to this, the initial costs for setting up a basic factory with a semi-manual processing system are relatively low. Cashew processing does not necessarily require complex technologies but rather relies on low labour costs. According to a sector expert who used to own a cashew processing plant the costs to set up a basic factory with a capacity to process 2.000 tons of RCN per annum are around US$400.000 (interview with Independent Consultant, 6 March 2018, Maputo). However, the required initial investment capabilities for cashew processors are increasing substantially due to the increasing mechanisation of cashew processing in Sub-Saharan Africa and the growing importance of compliance with international food safety standards (Fitzpatrick 2011a, 19). For instance, the Mozambican cashew processor Condor invested US$7.5 million to set up a new cashew factory with top of the line processing equipment in the south of Mozambique that complies with international food safety standards and has a relatively high level of mechanisation (although not fully mechanised) (interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

Acquiring new capabilities and accessing industry-specific knowledge is costly for firms. Installing international food safety standards requires making changes to the factory layout and paying for audits and certificates. Increasing efficiency and productivity requires investments in new machines and trainings of workers. Even if processors receive financial support by international donors, they need to come up for considerable costs. Given that the costs of finance in Mozambique are extremely high, processors need to be able to finance investments through other means. Processors either need to have access to foreign money or credit from their trade partners or manage diversified companies in order to cross-finance cashew processing with other business lines. All locally-owned cashew processors in Mozambique

combine cashew processing with other businesses, e.g. construction or raw commodity trade, in order to subsidise their cashew business, particularly investments in RCN during the harvest season and in new technologies or food safety certificates.[88] Many Indian businessmen in Mozambique are part of family firms with *transnational connections*, i.e. transnational networks of family members that are dispersed across the globe and involved in different types of businesses that support each other (Pereira Bastos 2005).

The second big hurdle for cashew processors is to meet the volume requirements of international buyers. Kernel buyers usually order whole containers full of one type of cashew kernel grade and not mixed containers of different grades[89]. Cashew kernels are usually shipped in containers of 700 or 750 carboard boxes of 50lbs (Abt Associates Inc. 1999, 11). During the initial phase of building up production capacity, investors might have to link up with other primary processors to be able to export their product. The challenge of meeting volume requirements is closely linked to processors' investment and linkage capabilities. Not only do they need enough capital to source sufficient RCN, they also have to establish and manage relations with RCN suppliers. In some countries, e.g. in Mozambique, processors need to be able to manage a broad network of RCN suppliers because production is scattered across thousands of small farms.

Finding buyers for cashew kernels from Mozambique is currently not a hurdle for Mozambican processors because of the growing global demand for cashew kernels. Many processors receive inquiries from international buyers and do not have to look for buyers themselves. Processors with Asian origin that exported RCN before they became involved in cashew processing, e.g. Mocaju Lda, drew on their contacts to international buyers to sell kernels. TechnoServe also played a role in linking Mozambican processors to international buyers (TechnoServe 2017; interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

The third hurdle relates to sourcing processing equipment. Many processors in Sub-Saharan Africa lack information on equipment suppliers and skills in procurement strategies. There are very few African manufacturers of processing equipment and firms rely on imports from Asian

[88] Research on the Ethiopian apparel sector reveals similar findings. Local apparel firms that are part of diversified businesses used other business lines to subsidise their apparel export business (Staritz and Whitfield 2018, 21).
[89] Cashews are graded into three categories: white wholes, white pieces and scorched. White wholes are graded according to size, white pieces according to the way in which kernels broke and scorched according to colouring and blemishing (Red River Foods 2012). Factory workers in Mozambique sort whole white kernels by hand into the different grades.

countries with limited or no maintenance service (Fitzpatrick 2011a, 3). This issue becomes more important once processors replace manual processing technologies with technologically more complex mechanised systems as discussed in the following section.

The fourth hurdle for Mozambican cashew processors relates to finding and managing workers. Work at the cashew factories does not require high skills but some processing steps, particularly cutting and deshelling, are unpleasant and damage the health of workers if they come in contact with cashew nut shell liquid (CNSL). The corrosive and toxic CNSL is a by-product of the cashew industry that harms workers' hands. Processors need strategies to cope with high absenteeism rates and high labour turnover due to alternative wage employment, agricultural work and unattractive working conditions in the factories. This requires good management. However, finding experienced managers can be a challenge in Sub-Saharan Africa and hiring high-skilled foreign staff is expensive.

To sum up, Mozambican cashew processors that seek to access the cashew GVC face four major hurdles: 1) raising investment capabilities to purchase RCN for processing and processing equipment; 2) meeting the volume requirements of buyers; 3) gaining access to processing equipment and choosing the right equipment; and 4) finding and managing workers. The next section discusses which TCs cashew processors in Mozambique require to upgrade within the cashew GVC.

Technological Capabilities Needed to Upgrade in the Cashew GVC

The TCs that cashew processors in Mozambique require to upgrade in the cashew GVC mainly relate to four factors: 1) mechanising the production process; 2) complying with international food safety standards; 3) meeting the requirements of buyers from various end markets; and 4) managing strategic diversification.

First, moving from basic to advanced capabilities is primarily about increasing mechanisation. Mechanising the production process requires investing in new machines, notably in automated cutting, peeling, grading and packing machines. An important skill for processors is to choose the right processing equipment. Many processors in Sub-Saharan Africa lack information on which equipment is suitable for their specific processing environment. Equipment manufacturers are based in Asia or Brazil and have a limited understanding of the local conditions of cashew processing in Sub-Sahara African countries. There are only few

international cashew equipment suppliers that cater to the African market. Due to the lack of competition these suppliers are able to decide on prices and buyers are usually not in the position to demand modifications (Fitzpatrick 2011a, 17–18).

In short, processors need access to finance to be able to purchase new equipment, they need to be able to choose the right equipment for their factory, they need to have a good understanding of the machines they purchase, and they need to be able to service these machines as most equipment suppliers do not provide maintenance service in African countries.

Second, upgrading in the cashew sector is closely linked to complying with international food safety standards.[90] Firms with basic capabilities may be able to gain access to the global cashew value chain without meeting international standards as long as the demand for cashew kernels remains high and buyers are willing to buy uncertified product. If firms want to remain competitive in the future and want to sell to more demanding markets, compliance with international food safety standards becomes crucial. Especially buyers from the EU and the U.S. expect processors to comply with international standards. Buyers from the Middle East and Asia are less strict (interview with Mocaju/METL Group/Director, 19 March 2018, Nampula), however, compliance with Hazard Analysis and Critical Control Points (HACCP) or similar risk control systems is becoming essential for entering major markets in Asia too. Implementing food safety standards requires adapting production processes, training workers, and changing the factory layout and infrastructure. Firms need substantial investment capabilities to buy certificates and to finance modifications of factory buildings.

Third, upgrading in the cashew GVC relates to meeting the requirements of a broader range of buyers from different end markets, e.g. related to food safety, communication channels or payment terms.

Finally, processors that seek to engage in strategic diversification, i.e. engaging in secondary processing to produce cashew-based snacks for the local and regional markets, need to develop a range of new capabilities that they did not require before. These include gaining information

[90] International food safety standards encompass a range of procedures, practices, controls, and documentation that increase food safety. They affect the whole production process, from the warehouse to the packing section (TechnoServe 2017, 17). The most important standards for the cashew processing industry are Hazard Analysis and Critical Control Points (HACCP), the African Cashew Alliance Quality and Sustainability Seal (ACA Seal), the seal of the British Retail Consortium (BRC) and the ISO 22000 standard. Compliance with international food safety standards in the Mozambican cashew sector is discussed in more detail in Chapter 8.

on the local and regional markets, developing products, establishing a brand, marketing, and establishing relations with end consumers, e.g. regional supermarket chains or the food service industry, e.g. restaurants or catering firms.

Based on the capabilities matrix for the cashew industry presented above, the following section explains in more detail how different types of upgrading (product, process, supply chain, end market, functional, and social upgrading) play out in the cashew sector and which learning channels are available for Mozambican cashew processors in the cashew GVC.

Potential Upgrading Opportunities and Learning Channels within the cashew GVC

The cashew GVC offers potential for all upgrading types, however only the move towards strategic diversification involves functional upgrading, i.e. taking over new functions with higher skill content. Moving from basic to advanced capabilities involves product, process, and supply chain upgrading and possibly end-market upgrading.

Product upgrading in the cashew sector may refer to producing more cashew kernels or to increasing product quality through improved production processes and compliance with international standards. This type of product upgrading does not necessarily lead to higher prices. It may also refer to engaging in secondary processing. By producing cashew-based snacks, processors add higher value to the cashew kernel.

Process upgrading in the cashew sector primarily refers to increasing productivity and efficiency by installing and mastering mechanised processing systems, reducing the kernel breakage rate, and adapting production processes to the requirements of international food safety standards. This also involves managing a factory's workforce more efficiently and training managers and workers, e.g. how to use new machines correctly or how to improve safety and hygiene at work. Upgrading production processes to comply with international standards may not improve efficiency but is a necessary step to comply with buyers' changing requirements (see Melese's (2018) study on upgrading in the Ethiopian floriculture GVC).

Supply chain upgrading centres on broadening the network of RCN suppliers to be able to source more RCN because mechanisation increases processors' production capacity. It also involves establishing and managing relations with suppliers of processing equipment from Asia.

End market upgrading refers to diversifying buyers and end markets. While the U.S. remains the world's main consumer of cashew kernels, consumption in Asian countries and in the Middle East is increasing. This opens up new opportunities for cashew processors. Strategic diversification includes a shift from the global market to the regional and local markets.

Strategic diversification also offers opportunities for functional upgrading. Producing cashew-based products, such as snacks, cashew milk or cashew butter, requires processors to take over a range of new functions, such as product development, establishing a brand, marketing in the regional and local markets, and distribution to retailers.

Finally, the cashew GVC also offers opportunities for social upgrading. Social upgrading in the cashew industry may refer to enhancing working conditions in the factories, e.g. by improving hygiene and a better protection of workers' hands. It may also involve increasing workers' real wages, strengthening contractual arrangements and workers' rights, e.g. to holidays and sick days. Providing meals, e.g. breakfast and/or lunch, and day care facilities further improve the working conditions at the factories, particularly for women.

As discussed in the theoretical framework of the thesis, the governance type of a GVC may affect the learning channels that firms within the GVC use. The type of GVC governance determines the complexity of transactions between GVC actors, the ability to codify transaction, and the capabilities of suppliers.

The governance type in the chain segment for cashew kernel exports is currently market-based but likely to move towards modular governance as the compliance with international food safety standards gains importance. This will have effects on the complexity of product specifications. Currently, product specifications are relatively simple. However, they will become more complex once compliance with international standards becomes mandatory. As long as this is not the case, transactions between buyers and suppliers are not complex and the level of coordination in the chain segment as well as switching costs for buyers remain low. Product and process specifications in the GVC for cashew kernels related to food safety, documentation, the environment, or working conditions are easily codifiable.

The level of capabilities required by cashew processors is relatively high, especially if they sell to buyers in end markets with high food safety standards. Cashew processors in Mozambique need to build the TCs needed to meet the minimum requirements of the cashew GVC without the assistance from international kernel buyers. Knowledge transfers in the chain segment for

cashew kernel exports are limited to knowledge spillovers. By participating in the cashew GVC, cashew processors in Mozambique obtain information on the requirements, e.g. related to product and process standards, that the global market demands. Due to the market-based governance structure in the chain segment, a deliberate transfer of tacit knowledge or technical assistance from international buyers to processors in Mozambique is unlikely (Pietrobelli and Rabellotti 2011, 1263). Cashew processors in Mozambique that sell kernels to buyers that demand compliance with international food safety standards, e.g. HACCP, are likely to learn through the pressure to meet these standards. However, buyers are unlikely to support Mozambican processors to develop the capabilities needed to comply with standards

To sum up, cashew processors require a relatively high level of capabilities to gain access to the global cashew kernel value chain. The main hurdles for cashew processors are establishing a broad network of RCN suppliers and raising the capital to purchase enough RCN to supply a factory throughout the year, meeting the volume requirements of international buyers, and finding and managing workers. The capabilities needed to upgrade include investment capabilities to buy new processing machines and to acquire international food safety certificates, choosing the right machines and being able to service them, adapting production processes to comply with standards, meeting the requirements of a broader range of buyers from different end markets, and developing new capabilities needed for strategic diversification.

The cashew GVC potentially offers ample opportunities for upgrading for cashew processors in Mozambique, particularly for product, process, end-market, supply chain upgrading and social upgrading. Governance in the value chain segment for the export of cashew kernels is market based but will move towards modular governance once compliance with international food safety standards gains importance. This type of governance favours knowledge spillovers and learning through the pressure to accomplish international standards. Deliberate knowledge transfers or technical assistance from buyers to cashew processors in Mozambique are unlikely because the switching costs for buyers are low and buyers seek to minimise coordination costs.

The following section summarises the findings of this chapter and discusses three important implications of the findings on firm-level upgrading in Mozambique's cashew processing sector.

6.4 Conclusion

This chapter provided a detailed analysis of the global cashew value chain. The first section of the chapter gave an overview of how the cashew value chain is organised, i.e. which actors it involves at which levels and with which functions in the chain. It further discussed which actors in the chain segment for the export of RCN and the chain segment for the export of cashew kernels exert power and how. The second section of the chapter laid out which TCs cashew producers in Mozambique require to break into the cashew GVC and which upgrading opportunities the chain offers for producers. The third section discussed which TCs cashew processors require to access the cashew GVC and/or to upgrade using a technological capabilities matrix for the cashew industry. It particularly highlighted major hurdles that cashew processors in Mozambique face at different stages of their business. The third section further set out how different types of upgrading play out in the cashew processing sector and which types of knowledge transfer are likely to occur in the chain segment for cashew kernel exports.

The analysis of the global cashew value chain and the upgrading opportunities for cashew producers and processors in Mozambique revealed three important insights. First, the upgrading opportunities for cashew producers and cashew processors in Mozambique vary substantially. The upgrading opportunities of producers are extremely limited due to a disconnect between quality and price in the local value chain. In contrast, the cashew GVC offers ample upgrading opportunities for cashew processors in Mozambique. However, the possibility to capture more value (functional upgrading) and higher rewards is small, unless processors target local and regional markets.

Second, some types of upgrading are becoming a minimum requirement for cashew processors in Mozambique to remain in the GVC but do not increase financial rewards. For instance, compliance with international food safety standards improves the product quality, hygiene and production processes in the factories but does not yield higher prices. Increasing efficiency and productivity (process upgrading) may increase the profits of processors and their global competitiveness but requires firms to make substantial investments in new processing technologies. Firms therefore require high investment capabilities to finance upgrading, particularly if there are few (or no) financial rewards from upgrading. The reward from upgrading may be to remain in the global cashew value chain.

Third, the analysis of the cashew GVC revealed that knowledge transfers within the chain segment for cashew kernel exports are limited. The GVC Governance is currently moving between market based and modular. Transactions between international buyers and local suppliers are relatively simple, product specifications are becoming more complex but can easily be codified, and local suppliers need to build the capabilities that are required to break into the chain by their own efforts. Low switching costs and buyers' efforts to minimise coordination costs within the chain reduce the likeliness that buyers will actively transfer tacit knowledge to cashew processors in Mozambique and/or support capability building among processors. Cashew processors in Mozambique therefore need to draw on other sources of learning and/or develop endogenous strategies to enhance their capabilities as discussed in Chapter 9 of the thesis.

A good understanding of the governance structure in the cashew GVC and the upgrading opportunities it offers for cashew processors is important to understand the upgrading paths of Mozambican cashew processors that are traced in Chapter 8 of the thesis. The next chapter revisits the history of the Mozambican cashew sector with the aim to explore why the cashew sector received political support and which value chain actors benefit from the sector's industrial policy framework.

7 The Political Economy of Promoting the Cashew Sector in Mozambique

Starting in 1987, the Mozambican Government implemented a range of liberal economic reforms. In 1990, it entered into a process of privatising state-owned enterprises, among others its cashew processing factories. The liberalisation of the cashew sector, which came to a halt with the adoption of a protectionist cashew law in 1999, was part of this wave of liberal reforms.

The 1999 cashew law was the first law that the ruling Government of the Mozambique Liberation Front (FRELIMO) and the opposition party Mozambican National Resistance (RENAMO) adopted unanimously in parliament. It was adopted shortly before the second multiparty general elections in Mozambique which took place in December 1999. The law explicitly opposed the 'neo-liberal' policy recommendations of the international financial institutions (IFIs) that the Mozambican Government was to implement in exchange for financial assistance. The unanimous vote of the two political adversaries, who had fought against each other in a 16-year brutal civil war (1977-1992) and were now finding common ground in the midst of an intense electoral campaign, seems puzzling. So does the Government's decision to abandon the liberalisation of the cashew sector, given its high dependency on financial assistance from international donors.

This chapter focuses on two questions: First, why did the Mozambican Government support the cashew sector at the end of the 1990s? Second, why did the Mozambican Government adopt a specific set of industrial policies and which actors benefitted from these policies?

To answer these two questions, the chapter provides an in-depth political analysis of the distribution of power within the Mozambican society, and in particular the cashew sector. These power relations shaped the debate on the reform of the cashew sector and the 1999 cashew law. The analysis mainly centres on the period between 1991 and 2002. In 1991, the Mozambican Government started to privatise and liberalise the cashew sector. 2002 marks the breakdown of the cashew sector. During this period, Mozambique was at a critical juncture which was characterised by intense changes within the Mozambican society and the cashew sector. On the one hand, Mozambique was in the process of a transition from war to peace and from a one-party, socialist state with a centrally planned economy to a multi-party state with a free-market economy. On the other hand, the cashew processing sector underwent a shift from heavy protection towards liberalisation that coincided with a breakdown of the processing

industry. This chapter argues that this critical juncture broadened the range of feasible policy choices for the FRELIMO Government.

The political analysis of the distribution of power in Mozambique and the cashew sector is structured along four dimensions drawn from the analytical framework presented in Chapter 3. The first dimension centres on the relative power of groups within and outside the ruling coalition. It looks at the relations between the ruling FRELIMO elites and the opposition party RENAMO, as well as factions within FRELIMO that contested the Government's liberalisation policies.

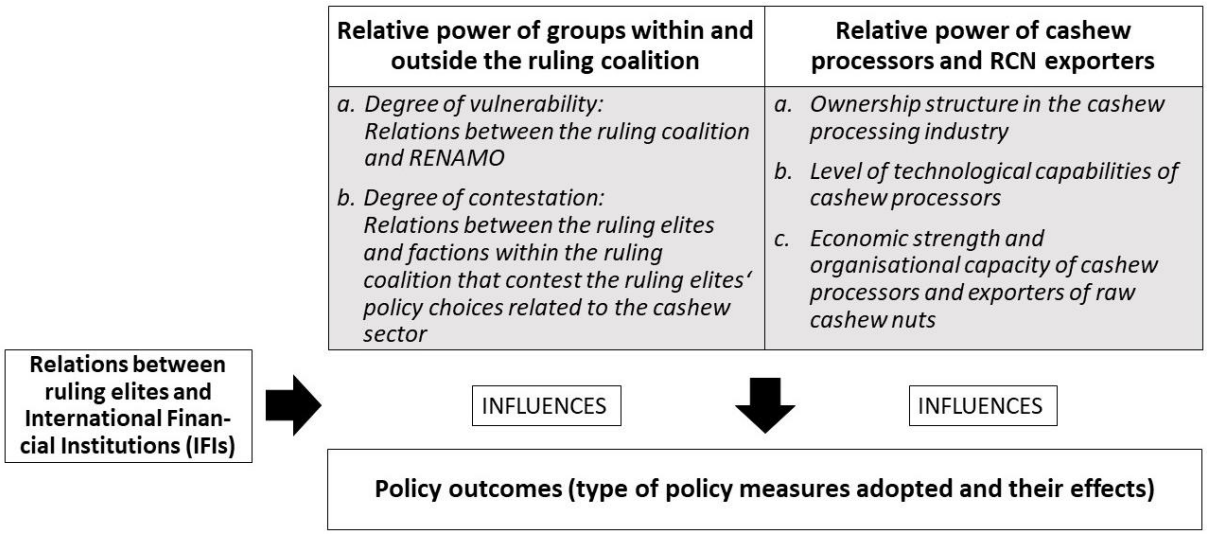
The second dimension focuses on the relative power of cashew processors and exporters of raw cashew nuts (RCN) vis-à-vis the Mozambican Government using three indicators: 1) the changing ownership structure within the cashew processing industry over time; 2) the technological capabilities of cashew processors and the state of the physical infrastructure of the processing industry, e.g. production plants and machines, in the 1990s; and 3) the holding power of the cashew processing industry and RCN exporters.

The third dimension looks at the relations between the ruling FRELIMO elites and the IFIs. The World Bank and the International Monetary Fund (IMF) influenced why and how the Mozambican Government promoted the cashew sector and shaped the Government's decision-making context. The holding power of the opposition party RENAMO, the economic actors in the cashew sector and the IFIs varied, but all three were able to inflict costs on the ruling coalition with the potential to change its political course.

The fourth dimension focuses on the policy outcomes of the reform of the cashew sector, i.e. the 1999 cashew law. Policy outcomes are important indicators for the relative power of actors in the cashew value chain in Mozambique. Studying outcomes includes looking at the policy measures of the cashew law, the beneficiaries of the law, and its implementation.

Figure 7.1 illustrates the analytical framework for studying the distribution of power in the Mozambican society and the cashew sector.

Figure 7.1. Analytical Framework for Studying Societal Power Relations



Source: the author, based on Whitfield et al. (2015)

The remainder of this chapter is structured as follows. The first section looks at how the IFIs shaped the parameters in which ruling elites in Mozambique took decisions related to the cashew sector. This section further studies the relations between the ruling FRELIMO elites and RENAMO, as well as between factions within FREILMO that contested the liberalisation of the cashew sector and factions that promoted its liberalisation. Section two centres on the power relations between the ruling elites and actors in the cashew value chain, particularly cashew processors and RCN exporters. Section three focuses on the policy outcomes of the reform of the cashew sector and discusses who benefitted from the 1999 cashew law. The final section summarises the arguments made in this chapter and provides a discussion of its findings.

7.1 Vulnerability, Contestation and Aid Dependency: Dealing with Powerful Groups Within and Outside the Ruling Coalition and International Donors

The national political settlement in Mozambique during the 1990s was characterised by four factors. First, a high level of vulnerability of the ruling FRELIMO coalition. RENAMO emerged as a powerful political actor after the civil war (running from 1977 to the General Peace Accord in 1992). In the first multiparty national elections in 1994 RENAMO won the countries' two most populous provinces Nampula and Zambézia, as well as the three central provinces Manica, Niassa and Tête (EISA 2007; Macuane, Buur, and Monjane 2018, 426; Whitfield et al. 2015,

123–24). Although FRELIMO had always presented itself as the party of national unity it was increasingly perceived as (and had in fact become) a party of the South and extreme north of Cabo Delgado, where many of its generals and soldiers came from (Buur and Salimo 2018, 7–8; Macuane, Buur, and Monjane 2018; Newitt 2017, 154–55).

Second, the ruling FRELIMO coalition faced a severe lack of resources and a high dependence on donor aid due to the Mozambican Government's failed economic strategy and the civil war. This undermined FRELIMO´s space for pursuing economic policies, such as the protection of specific productive sectors. During the Chissano era (1986-2004), development aid accounted for approximately 50% of the state budget (Macuane, Buur, and Monjane 2018, 427).

Third, the ruling Government's level of legitimacy within society was low. The party's support base in rural areas in the populous central and northern provinces was fragile and relations between the party and urban workers deteriorated as the nationalised industries declined. Justifying liberal reforms to workers who had become unemployed because factories closed and small-scale farmers in the centre and north of the country was a challenge.

Fourth, the national political settlement was characterised by internal struggles between ideological hardliners and supporters of liberal market reforms within FRELIMO. These struggles resulted from the Government's ideological shift from a socialist, centrally planned economy to a free-market, capitalist economy in the mid-1980s (Whitfield et al. 2015, 122). They increased the level of contestation within FRELIMO, making it difficult for the ruling Chissano elite to enforce liberal reforms that opposed the ideologies of pro-socialist factions.

Against this backdrop, the following three sections analyse why the reform of the cashew sector became a question of political survival for the FRELIMO ruling coalition. The first section begins with looking at the role of the IFIs in Mozambique's cashew controversy in the second half of the 1990s.

Risking Bankruptcy or Risking Legitimacy? The Government's Fight with the World Bank

In 1987, Mozambique entered into its first economic rehabilitation programme (PRE I, 1987-1990) with the World Bank. PRE I aimed to decrease overall administrative controls and led to the establishment of a minimum producer price system in the cashew sector in the early

1990s.[91] At first, the cashew sector had not been a focus of the programme. This changed with the publication of a report by World Bank consultant Hilmar Hilmarsson in 1995, just after the formerly state-owned processing factories had been privatised. The report concluded that the Mozambican processing industry was not viable, and that Mozambique was losing foreign exchange earnings by processing cashews. Primarily concerned with low producer prices, the report suggested to liberalise the cashew sector. Despite heavy criticism by the Mozambican Government, the cashew industry as well as domestic and foreign civil society actors, the World Bank adopted the report as policy. The liberalisation of the cashew sector was made a core condition in the World Bank's 1995 Country Assistance Strategy for Mozambique to qualify for a loan assistance of around US$400 million (McMillan, Rodrik, and Horn Welch 2002, 5–6).

The Bank's recommendations included eliminating the export tax by the harvest season of 2000/2001 and introducing licenses for wholesalers. This advice rested on the assumption that increased competition among RCN traders and exporters would raise the share of the export price for small-scale cashew farmers and boost production as well as exports (ideally to pre-independence levels) (Pitcher 2002, 226). Cashews were among the few cash crops for smallholder farmers after the end of the civil war in 1992. Increasing producer prices was to incentivise farmers to return to agricultural production (Aksoy and Yagci 2012, 6).

The World Bank suggested a transition period of five years during which the export tax should gradually decrease from 20% to 0%. This transition period was supposed to give the recently privatised processing industry time to adjust to higher producer prices and competition for RCN and to make their factories more efficient (Pitcher 2002, 226–27). While the World Bank pushed for a complete elimination of the export surtax, the processing industry proposed to reduce the tax to 8%. The Mozambican Government only followed the World Bank's schedule for eliminating the surtax in the first year (Aksoy and Yagci 2012, 6). Due to a stalemate between

[91] In the 1980s, it became evident that the development strategy of the Mozambican Government had failed. The country depended heavily on foreign aid. After a drought at the beginning of the 1980s, more than half of the Mozambican population depended on international food aid. Bilateral creditors demanded that Mozambique should become a member of the Bretton Woods Institutions and formulate an economic adjustment programme as a condition for further credits. Negotiations between the Government of Mozambique, the IMF and the World Bank started in 1984. The Government implemented two economic rehabilitation programmes, PRE I from 1987-1990 and PRE II from 1991-1993. PRE II put a greater focus on the social dimensions of economic transition and, inter alia, aimed to ensure a minimum income and level of consumption for the rural population. The measures of PRE II included the restructuring and privatisation of state enterprises, trade liberalisation, abolishing the fixed price system and devaluating the Metical to stimulate exports. The overall intention of PRE II was to deregulate the economy and to gradually establish a market economy (Abrahamsson and Nilsson 1995, 103-112).

the Bank and the Government, the surtax ultimately stayed above the Bank's schedule as well as the industry's proposal.

Table 7.1 compares the schedules for reducing/eliminating the export surtax of the processing industry (column 1) and the World Bank (column 2) with the actual development of the surtax between the campaigns of 1995/1996 and 2000/2001 (column 3).

Table 7.1. Proposed and Actual Development of the Surtax on RCN Exports between 1995-2001

Year	Industry Proposal	World Bank/Industry Negotiated Schedule	Actual Tax
1995/96	25%	20%	20%
1996/97	20%	12%	14%
1998/99	16%	7%	14%
1999/00	12%	5%	18%
2000/01 and continuing	8%	0%	18%

Source: McMillan, Rodrik, and Horn Welch (2002, annex)

The Mozambican position on the RCN export tax was difficult to maintain as pressures from the IFIs increased. At the same time that the Mozambican Government negotiated a Country Assistance Strategy with the World Bank, it was in the process of applying for debt relief through the Heavily Indebted Poor Countries (HIPC) Initiative. Both forms of assistance were needed. In the mid-1990s, Mozambique was one of the poorest countries in the world and depended heavily on foreign aid (Aksoy and Yagci 2012, 6).

The FRELIMO Government needed financial support from donors to avoid an economic collapse. In addition, donor aid created opportunities for rent creation for members of the ruling coalition, mainly in the form of corruption and state capture, that helped to keep the coalition intact. For instance, donor money was used to set up a fund that gave loans to party officials and a development project for small and medium enterprises that provided loans to the owners of newly privatised businesses, among them many party officials and their families and allies. Most of these loans were never repaid (Hanlon 2004, 750).

Hence, the pressure to follow the IFI's instructions to secure continued financial assistance was high and limited the ruling elite's room for manoeuvre. Mozambique succeeded in becoming

eligible for the HIPC Initiative in April 1998 and was granted debt relief worth US$3.7 billion in 1999. In 2000, Mozambique received another debt reduction package worth US$600 million (IMF and IDA 1999). However, the Government's acceptance of the IFI's instructions provoked a huge outcry by the processing industry, labour unions, civil society organisations and the media (Hanlon 2000, 36; Pitcher 2002, 227).

In short, the IFI's ability to inflict costs on the Mozambican Government in the second half of the 1990s was high. Due to severe budget constraints, non-acceptance of the Bank's policy would have let to an economic collapse. On the other hand, compliance jeopardised the Government's legitimacy. The latter was crumbling due to a series of corruption scandals in the 1990s (Boys 2014, 32), the party's overall weak support base, and a feeling among voters that the benefits of *'savage capitalism'* (Hanlon and Mosse, 4) did not trickle down but remained concentrated among FRELIMO elites. The overall perception that the Government had given in to the World Bank certainly did not help. In fact, President Chissano admitted in 2001 that poverty forced his Government to 'sacrifice' the cashew sector in order to ensure World Bank and IMF support for Mozambique's access to the HIPC Initiative (Hanlon 2001).

However, with elections coming up in 1999, the Government had to think not only about its economic survival strategies, but also about its political survival. The following section centres on the relations between the ruling FRELIMO coalition and the opposition party RENAMO in the period between 1994 and 1999.

RENAMO and the Threat of Elections

In the 1994 parliamentary elections, RENAMO had won almost 38% of the votes and the five populous central and northern Provinces Sofala, Manica, Tête, Zambézia and Nampula (IESE 2016a). Especially Nampula was politically important because it is Mozambique's most populous province (around 20% of the total population). President Chissano as well as his successors in office promoted several politicians from Nampula and helped them to gain ground in Mozambique's most populous province.

In the 1994 presidential elections, FRELIMO's candidate Chissano received 53% of the votes and RENAMO candidate Dhlakama 33% (IESE 2016b). RENAMO's strong results despite the devastating civil war came as a surprise and posed a threat to the ruling FRELIMO coalition. Due to the 'winner takes all' system, President Chissano had the power to appoint all province

governors, district administrators and other political administrative positions, effectively excluding RENAMO elites from power.

To consolidate its power, the ruling FRELIMO coalition also made use of patronage and revived certain productive sectors, e.g. the sugar industry, to broaden its political support base and its legitimacy within the population (Buur, Mondlane, and Baloi 2011, 241–44; Buur and Whitfield 2011, 14–16; Macuane, Buur, and Monjane 2018, 425–26). The FRELIMO Government made sure that its measures to consolidate power only benefitted key constituencies in the south as well as urban populations in the central and north of the country where FRELIMO expected to have support. Policies generally excluded transfers to RENAMO strongholds in the centre and north, to RENAMO elites that were not part of the demobilisation programme after the civil war, and to the RENAMO parliamentary group (basically trying to make a disconnect between RENAMO leaders that were increasingly based in Maputo and their rural constituencies). FRELIMO also limited RENAMO's access to state resources in order to diminish the opposition's organisational and mobilisation capabilities (Whitfield et al. 2015, 124–27).

The cashew sector had been among the productive sectors that received political support due to its potential to generate foreign capital and employment. However, the decline of the cashew processing industry in Mozambique, which was concentrated in Nampula, put the FRELIMO Government under pressure. In 1997, the industry employed approximately 10.000 workers, mainly in urban areas, and provided an income to hundred thousands of farmers in rural areas. Within the next two years, all large-scale processing factories stopped operating. According to a World Bank report (2006, 52) around 90% of the jobs in the cashew factories were lost in the course of liberalisation. The total number of lost jobs varies: the World Bank report states 11.000 workers without jobs, while Anne Pitcher (2002, 232) speaks of 3.000 to 10.000 unemployed workers. The unemployment of thousands of factory workers had negative impacts on the economies of several cities and small towns, notably in Nampula Province, such as Angoche, Monapo, Nacala and Lupo.

In the legislative term from 1994 to 1999 FRELIMO only held a majority of eight seats in parliament. The ruling FRELIMO elites knew that the upcoming elections would be a close call. They feared that the votes of the former cashew workers and their families and friends could be enough to swing the election. Moreover, RENAMO tried to make political capital over FRELIMO's decision to liberalise the RCN trade. It stressed the fact that some members of the

FRELIMO elite opposed the protection of the cashew industry because they were benefitting from RCN exports (Hanlon 2000, 40–41).

To sum up, despite a range of legal and illegal measures to starve political competition in the second half of the 1990s, the strength of RENAMO posed a threat to FRELIMO's political survival. The liberalisation of the cashew sector and the decline of the cashew processing industry became highly contested themes in the run-up to the 1999 elections. In order to stay in power, the FRELIMO Government was eager to secure the votes of thousands of cashew factory workers and their families by promising support for the declining industry.

Next to pressure from the IFIs and RENAMO, ideological intra-party struggles related to the reform of the cashew sector affected the policy choices of the ruling FRELIMO coalition as discussed in the following section.

Contestation from Within FRELIMO's Own Ranks: Dealing with Intra-Party Opposition

The ruling coalition's change of course from heavy industry protection of the cashew sector during the socialist era to liberalisation gave rise to ideological struggles within FRELIMO. When the implementation of liberal reforms took off in the late 1980s, two blocs within FRELIMO emerged. The first bloc included socialist 'hardliners' that opposed liberal reforms and disentangling the state from the FRELIMO party. The second bloc were 'soft hardliners', including President Chissano, who were in favour of promoting a private sector and a free market, but sought to maintain the predominance of FRELIMO, as well as active state involvement in the economy (Buur, Mondlane, and Baloi 2011, 240).[92] The socialist ideology promoted by FRELIMO members of the first bloc clashed with the pragmatic liberalisation policies pursued by President Chissano and the second bloc. These policies were required to secure financial assistance from international donors and foreign investments. At the same time, the ideological stances of both blocs within FRELIMO clashed with the rampant neoliberal ideology of Western donors, particularly promoted by the IFIs.

FRELIMO factions from the 'soft hardliners' bloc that benefitted from the liberalisation of agricultural exports opposed a faction from the 'hardliner' bloc that wanted to maintain state

[92] Pitcher (2002) speaks of a third, 'neoliberal bloc' that included high-ranking state and government officials from the finance and trade and industry ministries, Western donors and members of the private sector. This bloc strongly promoted liberal reforms. According to Buur et al. (2011) there is no empirical evidence for this bloc.

protection of productive industries, by ideological conviction or out of economic reasons (Buur, Balói, and Tembe 2012, 28). In fact, *'the Chissano faction's leadership of the ruling elites resulted in more of a balance of power on a knife edge after 1994 until 2004, than one of domination'* (Whitfield et al. 2015, 127). These struggles within FRELIMO became particularly apparent in the debate on the cashew reform.

In February 1999, a group of left-wing FRELIMO members of parliament (MPs) produced a proposal for a cashew law in parliament that suggested to ban the export of RCN. The proposal opposed the Government's and the IFI's liberal reforms that were a core condition for debt relief and financial assistance. In a framework policy paper that had been approved by the IMF, the Government had ensured that it would not adopt new or increase existing export surtaxes or restrictions. Government ministers therefore put pressure on the FRELIMO MPs who had drafted the protectionist draft law. A group of moderate FRELIMO parliamentarians then produced a less radical proposal for a cashew law that proposed an increase of the export surtax on RCN to 18-22% instead of a ban on RCN exports. Parliament approved this law on 30 September 1999. It was the first law that FRELIMO and RENAMO parliamentarians voted on unanimously. The Government had already announced beforehand that it would not veto the cashew law, assuming that the IMF would accept an increase of the surtax but not an export ban (Hanlon 2000, 40).

Most of Mozambique's donors were in favour of liberalising the cashew sector because they considered it to be pro-poor, i.e. to increase prices for cashew producers. However, the Parliament's unanimous vote for the cashew law made it difficult for the IFIs and bilateral donors to move against it. Denying support was also difficult because liberalisation, in particular the decision to abolish RCN export restrictions and to reduce the export surtax, had not produced the expected results. While the prices for producers did increase in the beginning after the sector was liberalised, price agreements among RCN exporters kept producer prices lower than donors had hoped for (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo). Increasing pressure from national and international civil society groups that protested against the IFI's policy prescriptions, thousands of unemployed cashew workers and the unanimous vote for protective measures of FRELIMO and RENAMO MPs in Parliament pushed the IFIs to sustain their support to the Mozambican Government despite the introduction of protectionist policies in the cashew sector.

The 1999 cashew law provided incentives for the cashew processing industry, increased the export tax on RCN and established support measures to cashew farmers, mostly located in the north of Mozambique. Whether this played a role for voters in the 1999 general elections remains unclear but it did send a clear signal to the population and to opponents of liberalisation within FRELIMO: the Government was not a puppet of the IFIs but had the sovereignty to make political choices that opposed the will of the Bretton Woods Institutions. The protection of the national cashew industry and domestic entrepreneurs was a priority. FRELIMO managed to win the 1999 elections with a very close 52% of the votes – most certainly by rigging the elections (Macuane, Buur, and Monjane 2018, 427; Weimer, Macuane, and Buur 2012, 43; Whitfield et al. 2015, 124). Throughout the 2000s, it consolidated its power and re-emerged as a strong dominant party under the rule of President Guebuza.

To sum up, the Mozambican Government was facing a dilemma. On the one hand, it was under pressure from the Bretton Woods Institutions to liberalise the cashew sector. On the other hand, the cashew processing industry, labour unions, civil society actors, the media, RENAMO and some factions within FRELIMO blamed liberalisation for the breakdown of the cashew processing industry. Sacrificing the industry in exchange for international donor support and access to much needed loans therefore jeopardised the Government's legitimacy as a sovereign actor. RENAMO had achieved an unexpected success in the 1994 elections and was eager to make political capital over the liberalisation of the cashew sector in the 1999 elections, particularly in the most populous province Nampula where the cashew processing industry was concentrated. Next to a strong opposition party, FRELIMO ruling elites were facing intra-party opposition related to the liberalisation of the cashew sector. In the light of these factors, supporting the cashew industry by adopting a protectionist cashew law became important for the political survival of the ruling coalition at the end of the 1990s.

The following section centres on the second dimension of the analytical framework, i.e. the relative power of cashew processors and RCN exporters vis-à-vis the Mozambican Government.

7.2 Exporters of RCN Versus Cashew Processors: A Question of Holding Power

This section seeks to explain why the Mozambican Government adopted a specific set of policy measures with benefits for some actors in the cashew sector but not for others. It considers three factors: 1) the changing ownership structure in the cashew industry; 2) the state of the processing industry and the level of technological capabilities of cashew processors; and 3) the economic and organisational holding power of cashew processors and exporters of raw nuts.

The Changing Ownership Structure in the Cashew Processing Industry

The ownership structure of the cashew industry varied significantly during colonialism (before 1975), after independence with nationalisations (1975-1991), during the privatisation of cashew factories, liberalisation and the industry breakdown (1991-2001), rehabilitation (2002-2009), and during the present phase of consolidation (2010-today) (see Table 7.2).

Table 7.2. Changing Ownership Structure in the Cashew Industry

Period	Ownership Structure
Colonialism (before 1975)	• 14 foreign-owned large mechanised factories (from Portugal, South Africa and Switzerland) with close ties to the colonial government
Nationalisation (1975-1990)	• the state holding company *Cajú de Moçambique* takes over 7 large mechanised factories • 5 foreign-owned private factories (Portuguese and South African owners)
Privatisation/ Liberalisation/ (1991-1999)	• established traders and domestic investors with close ties to the political elite buy 7 former state-owned factories • 5 foreign-owned private processing factories remain operational • 6 new processing factories established between 1995 and 1998 (mix of foreign and local owners)
Breakdown (1999-2002)	• all former state-owned cashew factories and most of the other factories close down • all local investors who bought state factories during privatisation leave the sector
Rehabilitation (2002-2009)	• a new group of local entrepreneurs invest in 24 small-scale factories in rural areas in northern Mozambique in the course of TechnoServe's rehabilitation programme • all but one investor (Condor Caju) leave the sector again • 2 foreign-owned factories open in 2005 (run by the multi-national companies Olam & ETG Korosho)

Consolidation (2010-today)	• 3 locally- and 6 foreign-owned medium-scale processing firms that export to the global market in 2018 • 6 new processing plants planned (5 foreign and 1 locally owned)

Source: compiled by the author, based on McMillan, Rodrik, and Horn Welch (2002); Aksoy and Yagci (2012); Pitcher (2002); Abt Associates Inc. (1999); Leite (2000) and information gained through field work in Mozambique from February to April 2018.

Before independence, cashew factories were owned by foreign companies from Portugal, South Africa and Switzerland. A bit over half of the factories were given up by their owners after independence in 1975 and declared abandoned by the newly installed FRELIMO Government. These factories were subject to state intervention and were eventually incorporated into the state company *Caju de Moçambique*. Out of the 14 cashew processing plants that were operating in Mozambique before independence, seven were incorporated into *Caju de Moçambique*, five remained in private hands[93] and the others closed down. Although *Cajú de Moçambique* temporarily also administered some of the private plants, their ownership remained private. Tables 7.3 and 7.4 provide an overview of the ownership structure of these factories before and after privatisation.

[93] The factories that remained private were operated by the Portuguese-Mozambican Entreposto Group (Companhia de Caju do Monapo in Monapo, Nampula), the Anglo American Corporation of South Africa (two factories, one in Mocita, Gaza and one in Angoche, Nampula), the Portuguese Group Companhia União Fabril (CUF) (Socaju in Nacala, Nampula) and by the company Indústrias de Caju Gordhandas Valabhdas, SARL (Inducaju in Lumbo, Nampula). The foreign-owned factory in Angoche run by the Companhia de Culturas de Angoche also remained private but closed down in 1983 and was abandoned (Leite 2000, footnote 6, Quadro VI). Cashew processing was not the main activity of these companies. For instance, the Entreposto Group was involved in various industrial and commercial areas, Anglo-American is a British/South African mining company and Companhia de Culturas de Angoche was also involved in processing sisal Abt Associates Inc. (1999, 3–4).

Table 7.3. Changing Ownership Structure of Intervened Cashew Processing Plants

#	Location	Former factory name	Factory name after privatisation	Capacity (tons/year)	Year esta-blished	Year priva-tised	Owners before privatisation	Owners after priva-tisation	Deshelling technology	Comments
1	Maputo	Procaju	Oficina de Construção de Equipamento e Auto*	3.500	1971	1994	Caju de Moçambique/ Empresa Estatal	Grupo Has-Nur	roasting + mechanical impact shelling	Old, established Indian company; traders in agricultural commodities, including raw cashew nuts
2	Maputo	Caju Industrial	Polycaju	15.000	1950	1994	Caju de Moçambique/ Empresa Estatal	Mr. Cassamo (95%)/ State (5%)	roasting + mechanical impact shelling	Trader in agricultural commodities, including raw cashew nuts
3	Maputo	Cajuca	Mocaju	15.000	1966	1994	Caju de Moçambique/ Empresa Estatal	Grupo Has-Nur (85%)/ State (15%)	roasting + mechanical impact shelling	Old, established Indian company; traders in agricultural commodities, including raw cashew nuts
4	Manjacaze, Gaza	Indústrias do Caju de Manjacaze	Procaju Manjacaze	4.500	1963	1994	Caju de Moçambique/ Empresa Estatal	Sara Daúde (80%)/ State (20%)	roasting + mechanical impact shelling	Wife of a former minister of agriculture
5	Inhambane, Inhambane	Spence & Pierce	Procaju Inhambane	4.500	1962	1994	Caju de Moçambique/ Empresa Estatal	Sara Daúde (90%)/ State (10%)	roasting + mechanical impact shelling	Wife of a former minister of agriculture

#	Location	Former factory name	Factory name after privatisation	Capacity (tons/year)	Year esta-blished	Year priva-tised	Owners before privatisation	Owners after priva-tisation	Deshelling technology	Comments
6	Beira, Sofala	Incabel	Companhia do Caju da Beira	3.000	1976	1994	Caju de Moçambique/ Empresa Estatal	Eurocaju	roasting + mechanical impact shelling	Companhia do Caju da Beira was among the privatised plants but ceased to exist shortly after privatisation.
7	Angoche, Nampula	Cajuca	Angocaju	15.000	1971	1994	Caju de Moçambique/ Empresa Estatal	Gani/Grupo AGT & ENAMOCO (70%)/ State (30%)	roasting + mechanical impact shelling	Gani is an old, established Indian trading company in agricultural commodities, including raw cashew nuts; ENAMOCO is a former state company that the government sold to Mozambican nationals

* Factory closed down and was turned into a repair shop for equipment

Source: Abt Associates Inc. (1999); Leite (2000); McMillan, Rodrik, and Verduzco-Gallo (2014)

Table 7.4. Changing Ownership Structure of Non-Intervened Cashew Processing Plants

#	Province	Former factory name	Factory name after privatisation	Capacity (tons of RCN/year)	Year esta-blished	Founding company	Owners during Nationalisation/ Privatisation	Country of Origin	Deshelling Technology	Comments
1	Xai-Xai, Gaza	Mocita	Mocita	19.000	1965/ 1966*	Anglo-American	Anglo-American (60%)/ Oltremare (15%)/E.D. & F. Man (15%)	South Africa	Mechanic cutting	Anglo-American is a South-African mining company. The company set up the Mocita plant in 1965 and the Antenes plant in Nacala in 1969. Oltremare is a manufacturer of mechanical cutting equipment from Bologna, Italy. E.D. & F. Man was a prominent international cashew broker from Rotterdam.
2	Lumbo, Nampula	Inducaju	Inducaju	3.000	1976/ 1973**	Indústrias de Caju Gordhan-das Valabhdas	Gani/Grupo AGT (95%)/ others (5%)	India/ Mozam-bique	semi-mechanical	Indústrias de Caju Gordhandas Valabhdas was owned by Mahendra Singh, a prominent local cashew trader and processor. Gani is an old, established Indian trading company in agricultural commodities, including raw cashew nuts that is well connected to the political elites. Gani is also involved in the intervened Angocaju processing plant.

#	Province	Former factory name	Factory name after privatisation	Capacity (tons of RCN/year)	Year esta-blished	Founding company	Owners during Nationalisation/ Privatisation	Country of Origin	Deshelling Technology	Comments
3	Monapo, Nampula	Companhia do Caju do Monapo	Companhia do Caju do Monapo	15.000	1971	Entreposto Group	Entreposto Group (100%)	Portugal	Mechanic cutting	Entreposto Group is a Portuguese firm that is engaged in numerous inudstrial and commercial areas.
4	Angoche, Nampula	Socaju	Companhia do Caju de Nacala (Angoche)	23.500	1968	Entreposto Group	Entreposto Group (43%)/ State (31%)/ others	Portugal	Mechanic cutting	
5	Nacala, Nampula	Antenes	Companhia do Caju de Nacala (Nacala)	15.000	1969	Anglo-American	Entreposto Group	Portugal	Oltremare (hand)	Entreposto Group bought the Antenes factory from Anglo-American in the early 1990s.
6	Angoche, Nampula	CCA Culturas do Caju de Angoche	CCA Culturas do Caju de Angoche	11.000	1968	CCA	CCA	Switzer-land	?	The plant closed down in 1983 and was left abandoned. CCA was also involved in processing sisal.

* According to Leite (2000) the factory was established in 1966; according to Abt Associates Inc. (1999) the factory was established in 1965
** According to Leite (2000) the factory was established in 1976; according to Abt Associates Inc. (1999) the factory was established in 1973

Source: Abt Associates Inc. (1999); Leite (2000); McMillan, Rodrik, and Verduzco-Gallo (2014); (Jornal Notícias online 2014)

All factories run by *Cajú de Moçambique* were located in the south and centre of Mozambique, except the Cajuca/Angocaju plant in the northern Province of Nampula. Three were located in Maputo, one in the town of Manjacaze in Gaza Province, one in the City of Inhambane, one in the City of Beira in Sofala Province and one in the town of Angoche in Nampula (Leite 2000, footnote 6, Quadro VI). In contrast, all of the non-intervened processing plants were located in the north with the exception of the Mocita factory in Gaza.

The FRELIMO one-party Government focused on nationalising factories that were located in larger cities in the south and centre of Mozambique. The Angoche factory in Nampula was an exception. Although a small town, Angoche had emerged as a major processing and export centre for cashew nuts towards the end of the 20th century. This focus had three important political reasons. First, many of FRELIMO's top leaders came from the south of Mozambique (and from the extreme north of Cabo Delgado) and sought to cater to the needs of their constituencies. Second, the party wanted to build support among urban workers. It established day care facilities, introduced maternity leave and offered literacy classes at the state-run cashew processing factories. It improved working conditions for female workers who made up half of the workforce at the factories (Hanlon 2000, 32; Whitfield et al. 2015, 119-121). Third, the promotion of the cashew sector after independence was to benefit the rural population in the populous province of Nampula.

However, FRELIMO's support base among urban workers crumbled as industries and infrastructure declined. According to Leite (2000, 298-299, footnote 10) all cashew processing factories operated by the state-owned company *Caju de Moçambique* were closed at the beginning of the 1990s when the Government adopted the first measures to liberalise and privatise the cashew sector.

Privatising the state-owned cashew factories turned out to be more difficult than expected. Many people in Mozambique perceived cashews as a national symbol (Pitcher 2002). Cashew stood for a successful industry that created jobs and income to farmers, an important source of foreign exchange and for something truly Mozambican that the country was good at. The Government therefore aimed to sell its cashew factories to Mozambican nationals and wanted the public to perceive the privatisation of the state cashew plants as a success story.

However, neither domestic nor foreign investors showed any big interest in buying the run-down state processing plants. The Government had to convince domestic investors using

nationalistic arguments and promise state support to find buyers. Although it managed to sell all factories by 1994, it had to make considerable financial sacrifices to privatise factories that closed their gates only a couple of years later. Local investors bought the state-run processing factories far below asking price. Investors' payments totalled US$850.000 while the Mozambican Government had asked for US$13.5 million (McMillan, Rodrik, and Horn Welch 2002, 7). Four investors were only able to make down payments of approximately 17% of the purchase price. On top of this, investors were allowed to start payments one year after they had purchased the factories and the Government took over US$12 million in debt that the state-run factories had accumulated (Pitcher 2002, 226). In short, the Government partly financed the privatisation of the formerly state-owned cashew processing factories.

At the end of the privatisation process, Mozambican nationals with close ties to members of the ruling elite had the majority of shares in the seven former state factories (Pitcher 2002, 226, 231) (see Table 7.3 above). Two of the factories were purchased by Sara Daúde, the wife of a former minister of agriculture (Procaju Manjacaze and Procaju Inhambane). One factory was sold to a Mozambican trader in agricultural commodities, including RCN (Polycaju in Maputo). Two factories were purchased by the Has Nur trading group (Mocaju and Procaju in Maputo) and one by the AGT Group/Gani trading group (Angocaju in Angoche). Has Nur and AGT Group/Gani are old-established trading companies of Indian origin that also exported RCN.[94] The former state company ENAMOCO that the Government had sold to Mozambicans also held shares in AGT group/Gani's factory in Angocaju. The Procaju factory in Maputo closed down. Finally, one factory was sold to the Mozambican-owned company Eurocaju (Companhia do Caju da Beira). This factory ceased to exist shortly after privatisation. The Government of

[94] Trade of RCN from Mozambique to India began in the early 20th century by Indian import-export firms who had settled in Mozambique in the 19th century. Pioneers in the export/import of RCN from Mozambique were mainly located in northern Mozambique. Import/export firms had warehouses in urban areas and were connected to various Indian-owned *cantinas* (small shops) in rural areas that supplied the rural population with imported goods and accumulated produce for export. The relations between the Portuguese colonial authorities and Indians in Mozambique were ambivalent. At first, Indian firms maintained positive relations with the Portuguese colonial administration but they became subjects of repressive measures starting in 1932 (Pereira Bastos 2005, 282, 288). Pereira Bastos (2005, 295) argues that the Portuguese authorities granted Indian firms '*protection when they had political, economic and social advantages to offer in exchange, while using them as scapegoats in times of crisis and nationalistic exacerbation*'. Harmful political measures, the nationalisation of factories and properties, the civil war, and the risks of trading on the black market led to an exodus of Indians from Mozambique in the 1970s. Those who stayed in Mozambique had to develop creative strategies to survive in the socialist economic system. With economic liberalisation in the mid-1980s, many Indian traders were able to restore their economic status and became economic elites (Pereira Bastos 2005, 301–2). Many successful Indian businessmen developed close ties with the new capitalist political elites and supported the Mozambican Government in exchange for protection (Pitcher 2002, 231).

Mozambique remained a minority shareholder in most plants. By law it was able to keep a share of up to 30% of privatised firms (Abt Associates Inc. 1999, 3).

Hence, of the seven state-owned factories only five remained operational, three large factories with a processing capacity of 15.000 tons of RCN per year each and two smaller factories with a processing capacity of 4.500 tons of RCN per year each. The new owners of the three large factories were traders, i.e. they exported and processed RCN at the same time. In the controversial debate that accompanied the liberalisation of the cashew sector in the 1990s they played an ambiguous role because they were wearing two hats. As processors they claimed support for the processing industry. As traders they benefitted from the liberalisation of the cashew sector and contributed to the lack of RCN for processing by exporting RCN.

The five foreign-owned private factories that had never been nationalised remained operational. In addition, six new factories opened between 1995 and 1998 that included foreign and local ownership.[95] By 2002, all but four factories had closed down, including all of the formerly state-owned factories. The local investors who had bought state factories during privatisation left the sector once processing came to a halt. Only Gani trading group returned to cashew processing 15 years later. It founded the company Caju Ilha and re-opened the processing plants in Angoche and Lumbo in 2012.

As discussed in more detail in Chapter 5, a new wave of local entrepreneurs invested in cashew processing during a rehabilitation programme by the U.S. NGO TechnoServe from 2002-2009. Among them were traders of RCN that now engaged in both cashew processing and RCN trade. Most entrepreneurs had no prior experience in the cashew business. In contrast to the local entrepreneurs who invested in cashew processing during privatisation, this new generation of investors did not have particularly close ties to the political elites.

Only one entrepreneur of the new generation of cashew processors supported by TechnoServe, Silvino Martins, is still in the cashew sector today. Silvino Martins owns the company Condor Cajú Lda and runs three cashew processing factories in Nampula and Gaza. His factories are currently the most competitive in Mozambique. The other entrepreneurs that were trained by TechnoServe left the sector and sold their factories mainly due to a lack of access to finance

[95] Cabo Caju in Pemba, Cabo Delgado owned by Jurg Reiser, a Swiss businessman; Cajeba in Geba, Cabo Delgado owned by the Portuguese/Mozambican JFS Group; Adil IC in Maxixe, Inhambane owned by a local investor; Socaju in Jangamo, Inhambane included foreign ownership; Invape in Manjacaze, Gaza included foreign ownership; and Madecaju in Maputo owned by a local investor with Portuguese roots.

and experience in managing industrial plants (interview with IKURU/General Manager, 19 March 2018, Nampula).

Two foreign cashew processors entered the cashew sector during the phase of rehabilitation (in 2005) without the support of TechnoServe. Olam (founded in Nigeria and today based in Singapore) and ETG Korosho (founded in Kenya and today based in Dubai) were the first large foreign investors that invested in cashew processing in Mozambique after the industry breakdown. Both are multinational companies that do not depend on local financing and had previous experience in cashew processing in other countries.

Starting in 2010, a second wave of mainly foreign firms invested in cashew processing. Some of these firms re-opened closed-down cashew processing factories, e.g. Mocaju/METL in Murrupula, Nampula, others built new factories, e.g. CA Company in Nampula. Olam and ETG Korosho also invested in further processing plants. The local firms that opened processing plants after 2010 are large trading firms that also export RCN.

To conclude, after independence, the socialist FRELIMO Government nationalised half of the country's cashew processing plants located in larger cities in the south and centre of Mozambique as well as in the economically important town of Angoche in Nampula. The other half remained in private hands or closed down. The Government sought to use these factories to build its political support base among urban workers, however, all factories stopped operating in the 1990s due to a lack of RCN and mismanagement. The state had to make considerable (financial) efforts to sell its factories at the beginning of the 1990s. At the end of the privatisation process in 1994, Mozambican nationals with close ties to members of the ruling elite had the majority of shares in the seven former state factories. Among these investors were large agricultural trading groups that also exported RCN. The state stayed a minority shareholder in most of the privatised plants (between 5% and 30% of shares). When the cashew processing industry broke down in 2001, all of the local investors who had bought the former state factories left the cashew sector. A new wave of local and foreign entrepreneurs became involved in cashew processing starting from 2002, partly with the support of the U.S. organisation TechnoServe.

The following section focuses on the state of the cashew processing industry and the level of technological capabilities of cashew processors in the second half of the 1990s.

State of the Cashew Industry and Level of Technological Capabilities of Cashew Processors

A look at the state of the cashew processing industry in the second half of the 1990s and the level of TCs of the local investors who bought the state firms during privatisation shows mixed results.[96] The level of competitiveness of the previously state-owned processing plants was low due to a lack of investments in state-of-the-art technology and maintenance, the exodus of skilled personnel after independence, and a lack of experience and know-how of the factory managers of the nationalised factories. Mechanical impact shelling – the technology used in the state-owned processing plants – was outdated and machines were in a bad state.

Keeping these factories running would have required a change of the entire technology. In addition, the location of some of these processing plants was not ideal. While the nationalisation of processing plants in the south and in urban areas matched the Government's aim to build support among urban workers at the time of nationalisation, it was not strategic from an industrial point of view because the production of RCN is concentrated in rural areas in the north.

Local investors who had bought cashew factories during privatisation could draw on a base of experienced factory workers and an established RCN marketing system. However, they lacked the investment capabilities to modernise the run-down factories, the processing-related technical know-how and the linkage capabilities to secure enough RCN for processing.

In contrast, the technological equipment in the factories that had remained private was reasonably well maintained. Unlike in the formerly state-owned factories, these plants used mechanical cutting, a more capital intensive technology, which required higher investments in maintenance but also yielded better product quality (Abt Associates Inc. 1999, 3). The new, small-scale processing plants that were established between 1995 and 1998 in rural areas mainly used the Indian processing system. This system suited the Mozambican context better because it was not capital intensive, depended on a large low-skilled workforce in rural areas and consumed less electricity.

Overall, the cashew processing industry in Mozambique was far from being globally competitive. The privatised cashew factories were in a bad state and the technological capabilities of the local investors who had bought the former state factories were low. They did

[96] Chapter 8 provides a detailed analysis of how the technological capabilities of cashew processors in Mozambique have evolved after the industry's breakdown.

not have the investment and production capabilities to modernise the run-down factories. Those that were both, involved in processing and in exporting RCN probably did not have an interest in doing so because they had a back-up option to cashew processing that was more economically lucrative. Nevertheless, large parts of the population and probably also the political elites perceived cashew processing as something genuinely Mozambican that the country was good at (Pitcher 2002, 225). This perception was mainly based on the country's history as a major producer and processor of cashew nuts and not on the current state of the industry. However, it created expectations that the cashew industry could re-emerge as a successful industry and that supporting it would pay off in the future.

The following section discusses the holding power of cashew processors and RCN exporters in the period between 1995 and 1999. This discussion takes the ownership structure of the cashew industry and the level of TCs of cashew processors into account.

Holding Power of Cashew Processors and Exporters of Raw Cashew Nuts

As defined in the theoretical framework of the thesis, holding power refers to the ability of individuals or groups to engage and survive in conflicts over resources and opportunities, e.g. a contested policy reform, with the aim to maintain or secure a desired result (Khan 2010, 6). The ability to survive in conflict is shaped by the capacity of actors to absorb costs and impose costs on others based on their economic strength and organisational capacity.

The economic strength of cashew processors and RCN exporters in Mozambique is linked to three factors: 1) providing income for the population; 2) contributing to government revenues; and 3) financing the ruling coalition. The organisational capacity of economic actors depends on their ability to mobilise support, e.g. among factory workers or civil society organisations, to act in cohort, e.g. through business associations, and to exert political influence through links into political circles. It is also shaped by their ability to mobilise ideologies and to make use of historically rooted narratives that increase their legitimacy to forward claims for state support vis-à-vis the Government and the population. The level of holding power of economic actors influences if and how governments choose to promote a sector.

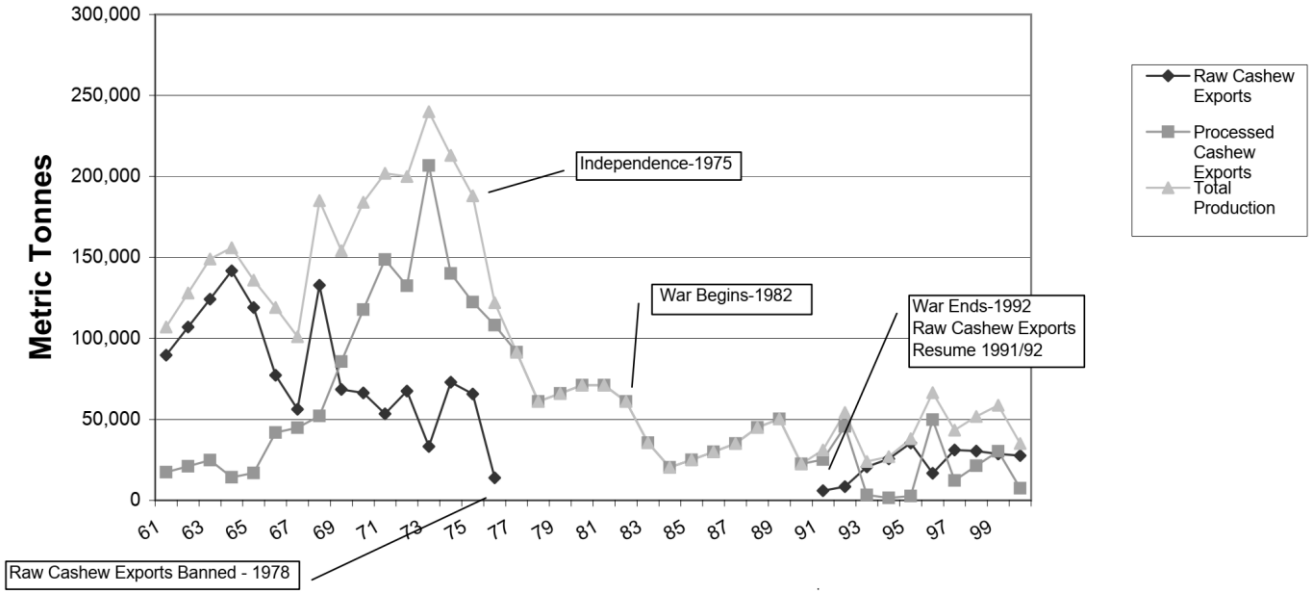
Economic Strength of Cashew Processors and Exporters of Raw Cashew Nuts

RCN Exporters, many of them wholesale traders with Indian origin, had dominated the trade of RCN for decades. They had great financial power, had historically supported the Government through political financing and pushed for liberalisation. They were well organised in the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) and had a high lobbying capacity due to their close ties with political elites. In addition to Asian trading houses, a company closely affiliated with the FRELIMO party called Saba received an export license during the period of liberalisation. Members of the FRELIMO Government helped this company to tap into the profitable trade in RCN and in turn benefitted from the company's activities (Buur, Balói, and Tembe 2012, 27; Pitcher 2002, 231).

Between 1978 and 1991, the export of RCN was banned. Hence, exporters neither created income to cashew farmers, nor did they generate state revenues. With the beginning of liberalisation in 1991, the Government allowed the export of 10.000 tons of RCN per campaign and established an export surtax of 60% that was lowered to 30% in the harvesting campaign of 1992/1993. Despite the high export tax, exporters' contribution to Government revenues remained small due to the quantitative restrictions of RCN exports.

From 1994, the Government lifted export restrictions and reduced the RCN export tax to 14%. Exports of processed cashew nuts (cashew kernels) had declined sharply at the beginning of the 1990s and hit rock bottom in 1993/1994. As a consequence, exports of RCN increased to approximately 30.000 to 40.000 tons per year in the mid-1990s. In fact, virtually all cashews that were traded on the formal market between 1993 and 1996 were exported. The processing industry resumed in the campaign of 1996/1997 but started to decline again one year later and broke down altogether in the campaign of 2001/2002. Figure 7.5 provides an overview of the volumes of RCN production, RCN exports and exports of processed cashews between 1961 and 2001.

Figure 7.2. Production, Export and Processing Volumes of Raw Cashew Nuts 1961-2001



Source: (McMillan, Rodrik, and Horn Welch 2002, annex, figure 1)

At the beginning of the 1990s, RCN exporters neither contributed to providing income to the population nor to government revenues. However, in the course of liberalisation, RCN exports started to outweigh exports of processed cashews. Due to the 14% export tax RCN exporters now created more revenues than the processing industry. In contrast, the economic strength of cashew processors diminished in the course of the 1990s.

The processing industry had been a source of income to small-scale cashew farmers and factory workers after independence and throughout the civil war. Through the state holding company *Cajú de Moçambique* that took over seven formerly foreign-owned processing plants in 1979, the one-party state gained access to revenues generated through cashew processing which it used to fund the centralised state project. In the process of privatisation, the Government lost direct control over rent creation in the processing industry but tried to retain some influence by selling its factories to its allies and by keeping between 5% and 20% shares in five out of seven privatised plants.

Cashew kernels used to be Mozambique's most important export and source of foreign exchange. Although the export of cashew kernels decreased considerably after independence, it still made up a significant part of the country's non-mineral exports at the beginning of the

1990s. The cashew industry had been an important formal employer in rural areas in the past. At the end of the 1990s, it still employed around 10.000 workers (Aksoy and Yagci 2012, 5).

Due to the continuous decline of the industry the holding power of cashew processors was dwindling. Processors assumed that they could draw on their close ties with political elites who had convinced them to invest in state factories during privatisation. The ruling elites had promised the new factory owners support. An agreement between RCN exporters and the cashew processing industry had been negotiated through the Governor of Nampula in October 1994. This agreement provided that the processing industry had to be supplied with RCN first before exports of RCN could start (Aksoy and Yagci 2012, 2; interview with CTA/President of the Working Group on Tax Policy, 26 February 2018, Maputo; Sjaastad et al. 2007, 36). However, the government abolished this provision between 1996 and 1997 and reduced the export tax on RCN in order to satisfy the World Bank's demands – and those of RCN exporters (Pitcher 2002, 227–28).

In sum, RCN exporters had financial power which they had used to finance the ruling coalition in the past and which increased their ability to engage and survive in the cashew controversy. The ban on RCN exports and the overall low levels of RCN production imposed costs on exporters. However, RCN exporters were able to absorb these costs because they traded a range of agricultural products and did not depend solely on the export of cashews. Exports of RCN resumed during liberalisation and eventually outweighed the exports of cashew kernels. The World Bank's liberalisation course matched the interests of RCN exporters and the latter successfully used their traditionally close ties to political elites to push for the liberalisation of the cashew sector.

In contrast, the processing industry's economic strength weakened after independence and particularly in the 1990s as factories closed down and exports of cashew kernels stopped. The industry ceased to be a source of foreign exchange and employment. The Mozambican Government's decision to reduce the tax on RCN exports and abolish the provision that cashew processors had to be supplied first before RCN exports could start is an expression of the industry's dwindling holding power.

These measures imposed considerable costs on cashew processors. On the one hand, the liberalisation of the cashew sector increased the competition for RCN and – at least temporarily – producer prices. Processors were not able to secure enough RCN for their factories because

their linkages with intermediary cashew traders and producers were not as strong as those of RCN exporters and due to the general lack of RCN production. On the other hand, they lacked the financial means to modernise the factories they had bought from the state to make them profitable. In addition, processors were struggling with labour costs because they had to compensate workers for periods during which factory gates remained closed due to a lack of supply if workers had not been formally informed of a factory closure. In short, despite its links to political elites, the processing industry was not able to absorb these costs due to its economic weakness.

The following section assesses the organisational capacity of processors and RCN exporters.

Organisational Capacity of RCN Exporters and Cashew Processors

A look at the organisational capacity of cashew processors and RCN exporters shows a different picture. The breakdown of the processing industry at the end of the 1990s provoked a societal outcry, notably the loss of up to 10.000 jobs in cities and in urban centres in rural areas. The local investors who had bought the formerly state-owned processing plants protested that they had not had enough time to upgrade their factories and pushed for some protection of the industry (Hanlon 2000, 39).[97]

Cashew processors forged coalitions with a range of civil society actors and drew on historically rooted narratives to increase their legitimacy. They formed the Association of the Cashew Industry (AICAJU) in 1995 to aggregate and consolidate the industry's interests. AICAJU linked up with the National Cashew Workers Union (SINTIC) that had been created in 1987. It also had the national media on its side and was backed by international civil society organisations that portrayed the breakdown of the Mozambican cashew sector as a worst-case scenario of the World Bank's liberalisation course.

The historically rooted narrative of the cashew industry as a national symbol of prosperity mismatched the World Bank's argument that it was not profitable for Mozambique to pursue cashew processing. For many citizens and members of the ruling elites, cashew processing in

[97] According to Hanlon (2000, 34), an informal agreement between the Government and the new owners of the privatised factories promised the latter a period of protection during which they could modernise their factories. A former Minister of Foreign Affairs and Cooperation emphasised that the Government had only promised local investors some assistance to buy RCN for processing (interview with Fundaçao Chissano/Executive Director, 28 February 2018, Maputo).

Mozambique was (and should stay) a success story they were proud of. They felt that the IFIs were forcing the country to destroy something it was good at (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo) and neglected the fact that the processing factories were in a bad state and the TCs of local cashew processors were low. Nevertheless, the processing industry used this narrative strategically to legitimise its demands for protection while it portrayed RCN exporters as the 'bad guys' who had ruined Mozambique's processing industry and misused their privileged access to the Government. The debate neglected that in some instances processors and exporters were the same people.

In addition, there was an ideological fit between the demands of cashew processors – some protection instead of full liberalisation – and the interests of ruling elites when the cashew law was adopted in 1999. The Government had promoted the sector's liberalisation between 1991 and 1998 in exchange for financial assistance and debt relief. However, in the run up to the elections in 1999, saving the cashew processing industry fitted FRELIMO's electoral strategy and became a way to keep FRELIMO factions united. Protecting the cashew industry was in line with the ideological stance of the 'soft hardliner' bloc within FRELIMO.

In short, FRELIMO had an interest in controlling the protests against the liberalisation of the cashew sector and in supporting coalitions between different societal actors, such as the cashew processing industry, workers in the cashew factories, civil society organisations that supported the processing industry, and the media. These actors were pushing the Government to rescue the industry against the IFI's recommendations. Table 7.6 provides a summary of the economic strength and organisational capacity of cashew processors and RCN exporters at the end of the 1990s.

Table 7.5. Economic Strength and Organisational Capacity of Cashew Processors and Exporters

	Economic Strength	*Organisational Capacity*
RCN Exporters	High: ✓ Source of foreign exchange once RCN export ban was lifted ✓ Provided income to RCN producers ✓ Increasingly contributed to government revenues through RCN export tax once the RCN	Low: ✓ Lobbying through ACIANA ✓ Political influence through links to political elites ✓ Ideological fit between exporters' demands for liberalising the processing industry and the

	export ban was lifted and the industry declined ✓ Supported the government through political financing ✓ High ability to absorb costs due to economic strength	interests of ruling elites between 1990 and 1998 ✗ Weak ability to mobilise support ✗ Weak ability to draw on historically rooted narratives
Cashew Processors	Low: ✓ Source of foreign exchange but only as long as factories were operating ✓ Provided income to RCN producers and factory workers but only as long as factories were operating ✗ No ability to contribute to government revenues ✗ No ability to finance the ruling coalition once factories had closed ✗ Low ability to absorb costs due to economic weakness	High: ✓ Creation of AICAJU in 1995 ✓ Political influence through links to political elites ✓ Ideological fit between processors' demands for protection of processing industry and the interests of ruling elites in 1999 when the cashew law was adopted ✓ Strong ability to mobilise support: forged coalitions with SINTIC, civil society organisations and the media ✓ Strong ability to draw on historically rooted narratives and ideologies: cashew industry as a national symbol of prosperity

Source: the author

To sum up, the economic strength and ability to absorb costs of RCN exporters outweighed the economic strength of the processing industry by far. This increased the relative holding power of RCN exporters. Local investors that had bought the former state cashew factories were economically too weak to absorb the costs of liberalisation and did not receive enough political support to survive in business.

However, the analysis in this section also shows that the organisational capacity of cashew processors, notably the ideologies and narratives they used to mobilise support from political and civil society actors and to legitimise their claims for protecting the cashew industry, had an important impact (Lavers 2018, 9). Supporting the cashew industry became important for the ruling elite's political survival in the face of the upcoming elections. While the organisational strength of cashew processors did not save the industry, it paved the way for the 1999 cashew law and the revival of the cashew industry in the 2000s.

In a nutshell, the cashew law that was adopted in 1999 had to protect the processing industry out of ideological and political reasons and at the same time cater to the interests of RCN exporters out of economic reasons. The following section takes a closer look at which actors benefitted from the cashew law.

7.3 Picking a Winner: Beneficiaries of the 1999 Cashew Law

This section teases out who the beneficiaries of the 1999 cashew law were by looking at the law's policy measures and their effects. The outcomes of policy decisions are important indicators for the relative power of economic actors.

At first glance, the winners of the reform of the cashew sector were cashew producers and the cashew processing industry. 80% of the income generated by the RCN export surtax was to be used to support small-scale producers of cashew nuts in rural areas. The supportive measures included agricultural research, a large-scale spraying programme of trees and the distribution of seedlings.[98] An increase in production was to boost the income of farmers and to provide more raw material for the processing industry.

This decision was strategic in two ways: First, cashew producers were the main group of concern of international donors and the FRELIMO Government assumed that donors were more likely to accept protective measure if they benefitted cashew growers. Second, a lack of RCN was the main reason for the breakdown of the cashew processing industry. Supporting producers to increase RCN production was crucial to revive the industry and at the same time keep RCN exporters happy by increasing the RCN volumes they could trade.

The 18% surtax on RCN exports, the temporary ban on RCN exports from October to December, the right of first refusal for cashew processors as well as the guarantee fund for cashew processors aimed to increase the competitiveness of the Mozambican cashew processing industry and to make sure that the industry had enough cashews for processing. Due to the export tax, Mozambican cashew processors were able to buy RCN at a lower cost than their international competitors in Vietnam and India who relied on the import of RCN from other countries because production in India and Vietnam was not high enough (USAID 2018, 39). The

[98] Chapter 5 discusses the individual policy measures that were adopted in the 1999 cashew law in more detail.

aim of the tax was to enable Mozambican processors to re-access the global cashew value chain, despite comparatively low levels of efficiency.

On top of the protection provided through the cashew law, the cashew processing industry, with the support from international donors, had negotiated a special deal with the Government regarding the wages for factory workers. The industry was exempted from paying the industrial minimum wage because it was in the process of rehabilitation. Instead, workers in the cashew factories received the agricultural minimum wage, which was significantly lower (interview with SINTIC/General Secretary, 10 March 2018, Maputo). In 2000, the agricultural minimum wage was at US$25,30 while the non-agricultural minimum wage was at US$37,6 (Hanlon 2018).[99]

A second glance at the cashew law, and in particular its effects, paints a more ambiguous picture. While the cashew law did put a focus on providing support to producers, the benefits for farmers remained limited due to the mediocre implementation of the supportive measures for cashew producers. In addition, the reform did not tackle three fundamental problems related to increasing producer prices. First, producer prices are not negotiated on the basis of quality because quality control mechanisms to determine an adequate farm gate price are lacking (and most farmers are not able to determine the kernel outturn ratio of their cashews). Second, it is difficult to determine production costs because cashew trees are dispersed all over the country and cashew production only makes up a small part of the total production per household in rural areas. Cashew producers therefore lack the knowledge and possibilities to negotiate prices with intermediary traders and have little incentives to increase the quality of their cashews (interview with Aga Khan Foundation/Employee, 14 February 2018, Maputo; USAID 2018, 34–35). Third, cashew growers were (and still are) not as well organised as the processing industry or RCN exporters. While all other major actors – INCAJU, AICAJU and ACIANA – claim to fight for the interests of cashew-growers to increase the legitimacy of their own demands, the voice of producers remains weak.

While the reform created strong incentives to invest in cashew processing, it came too late for those investors who had bought the formerly state-owned cashew factories when the sector was privatised. As discussed above, all of them left the sector after the industry broke down

[99] Until 1999, there was a single minimum wage in Mozambique. In 2000, two separate minimum wages were introduced, an agricultural and a non-agricultural minimum wage. In 2008, the Government adopted 11 different minimum wages for different sectors. The categories for the different minimum wages vary slightly each year. In 2018, there were 16 minimum wages (Hanlon 2018).

and a new wave of investors was involved in reviving it. In an analysis of the cashew controversy in 2002, Anne Pitcher (2002, 233) argued that the new law manifested a power shift in the cashew sector. According to Picher, within the Mozambican Government, the political influence of RCN exporters now shifted to producers and the cashew industry. This conclusion neglects the fact that – intended or not – those who initially profited most from the decline of the cashew industry were RCN exporters because they could export all RCN in the period between the breakdown of the processing industry and its revival. In 2001, Mozambique exported 98% of the RCN it produced to India and only 2% remained for in-country processing (Piper 2007).

The gradual rehabilitation of the cashew processing industry starting in 2002 created competition for RCN exporters and a threat to the RCN price cartel which they had established during the period of liberalisation (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo). RCN exporters had to arrange themselves with the new law in a way that allowed them to benefit from the favourable conditions for cashew processing that it established. They therefore started to invest in cashew processing too.[100] Exporters already had well-established networks of intermediary traders in place to source RCN. The simultaneous involvement in the export of RCN and cashew kernels allowed them to adapt to price fluctuations in a flexible way. Depending on the FOB reference price for RCN (set by INCAJU each month), exporters could decide to process cashew nuts if prices were low or to export RCN directly if prices were high:

> *'[…] in any given year, they [cashew processors that also export RCN] would do their buying and then they would make a decision 'do I export this or do I process it?'. And in some cases […] it makes more sense to export, so they export and in other years it makes more sense to process, so they process. But that's a very difficult way to maintain a factory in terms of labour, in terms of training, in terms of management and staff.'* (interview with TechnoServe/Programme Director, 12 March 2018, Pemba)

Some of the exporters became members of both, the Association of the Cashew Industry (AICAJU) and the Commercial, Industrial and Agricultural Association of Nampula (ACIANA) that represents traders. They increased their lobbying capacity by making use of two channels to

[100] By law, firms that export RCN are not allowed to process cashew nuts. Some exporters therefore set up separate companies for cashew processing.

exert political influence. In short, RCN exporters absorbed the costs that the 1999 cashew law inflicted on them by engaging in cashew processing, next to exporting RCN. In addition, they used their links to lower level officials at the ports to export RCN during the temporary RCN export ban and/or to declare RCN exports as cashew kernels to circumvent the export tax.

To sum up, a closer analysis of the cashew reform shows that the Mozambican Government declared the cashew processing industry and cashew farmers as the official beneficiaries of the cashew law but – intentionally or not – made exporters of RCN its unofficial winners. The local investors that took over the state-owned factories during privatisation did not get enough political support to survive in business and the revival of the industry was mainly driven by donors, not the state. In contrast, RCN exporters benefitted from the decline of the industry by increasing exports. On top of that, some RCN exporters captured the incentives for cashew processing that the new law established by becoming processors themselves.

Cashew farmers did not benefit from the reform as much as the new law promised. Production increased but at a slow pace and the quality of Mozambican cashews remains low because farming practices have not improved. The level of organisation among cashew farmers remains limited until today, reducing their political leverage. It certainly did and does not help that most farmers come from RENAMO-dominated regions. Despite these implementation problems, the situation for cashew-growers has improved – however not directly as a result of public support measures. RCN producers currently benefit from high world market prices and the high level of competition for RCN within Mozambique.

The group that probably lost out most in the reform process were factory workers. The Mozambican Government used the necessity to save thousands of jobs in cashew factories as an argument to legitimise the protective measures of the cashew law vis-à-vis the IFIs. After adopting the reform, it strategically portrayed itself as the saviour of the industry – and of more than 10.000 jobs – with the aim to secure votes in the upcoming elections. However, the Government did not prevent the breakdown of the industry. On top, it took the decision to exempt the cashew sector from the industrial minimum wage during the phase of rehabilitation, limiting the income of factory workers substantially. Cashew processors formed a coalition with the labour union of cashew workers in the run-up to the reform but turned against them when they negotiated the deal with the Government.

The following section provides a summary of the chapter and a discussion of its core findings.

7.4 Summary and Discussion

This chapter explained why supporting the cashew sector became important for the political survival of the ruling coalition in Mozambique at the end of the 1990s and why the Mozambican Government adopted a specific set of policy measures to support the cashew sector. The first section of the chapter centred on the relations between the ruling elites and the IFIs, as well as the opposition party RENAMO. It further discussed ideological struggles within FRELIMO between factions that promoted the protection of the cashew sector and factions that pushed for its liberalisation. The second section assessed the relative holding power of cashew processors and exporters of RCN using three indicators: a) the ownership structure in the cashew processing industry, b) the level of capabilities of cashew processors and the state of the physical infrastructure, e.g. production plants and machines, and c) the economic strength and organisational capacity of cashew processors and exporters of RCN. The third section teased out who benefitted from the 1999 cashew law.

The period from 1991 to 2002 was a period of intense societal change in Mozambique. The country recovered from a devastating civil war, it had recently completed the transition from a one-party to a multi-party state and economic liberalisation replaced a centrally planned economy. These developments included a change of the ownership structure in many economic sectors, including the cashew sector. Severe budget constraints made the IFIs influential actors that were able to inflict high costs on the newly elected FRELIMO Government. The opposition party RENAMO emerged as a strong political party outside the ruling coalition that received a considerable number of votes in the first multi-party elections in 1994. The ideological shift from socialism to a free market economy triggered ideological intra-party struggles that further increased the vulnerability of the ruling FRELIMO coalition.

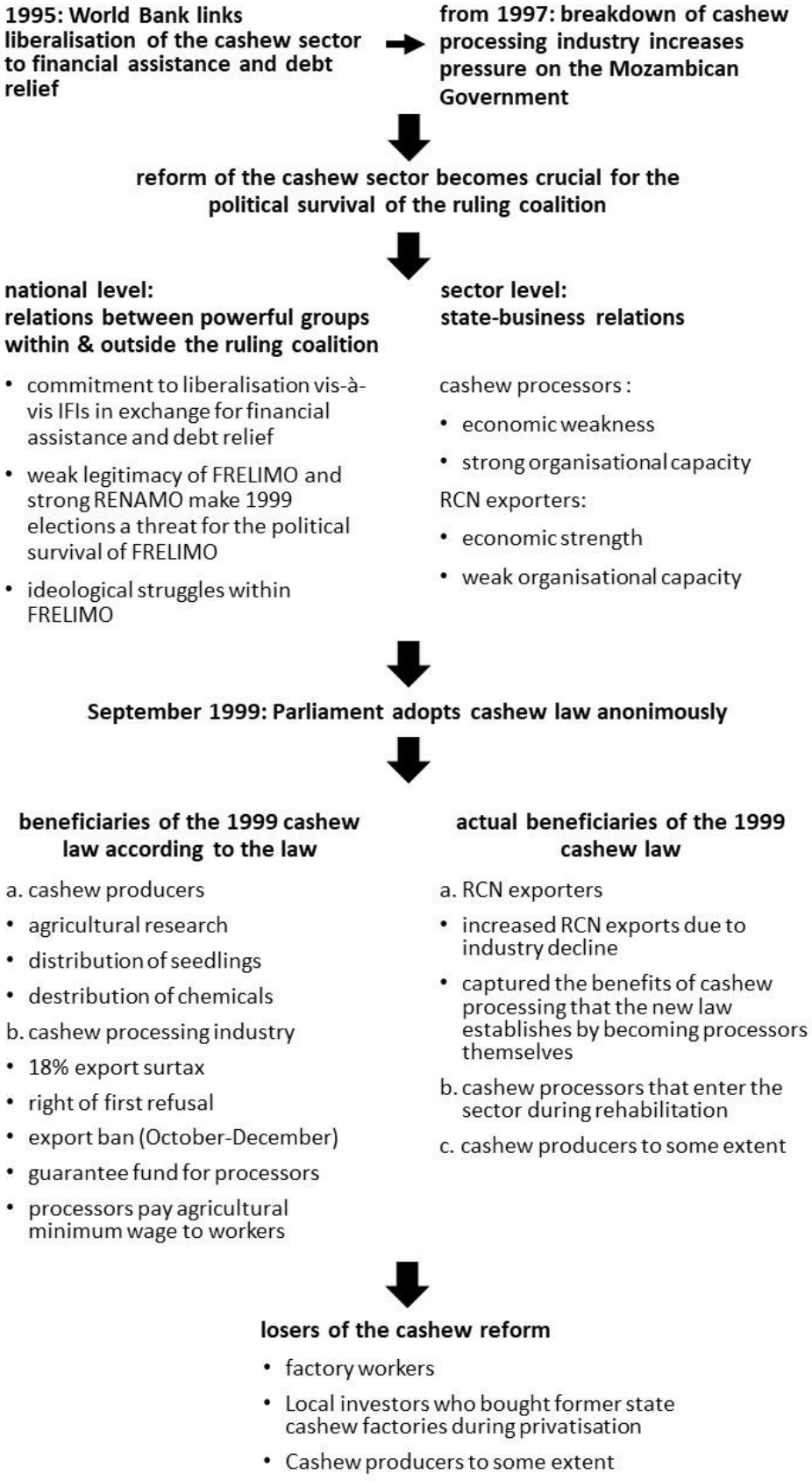
The World Bank made the reform of the cashew sector a threat for the political survival of the ruling coalition by linking it to financial assistance in its 1995 Country Assistance Strategy for Mozambique and to debt relief through the HIPC Initiative. The Mozambican Government's initial commitment to the full liberalisation of the cashew sector satisfied international donors and important factions of the political and economic elite who benefitted from liberalisation, including RCN traders. However, the decline of the cashew industry, which left thousands of factory workers in populous constituencies without jobs, increased the pressure from labour unions, national and international civil society organisations, the media, FRELIMO factions that

were in favour of protection and from RENAMO. The FRELIMO Government had to find a way to make political capital over the cashew controversy in the run up to the 1999 elections.

The analysis of the cashew controversy in Mozambique confirms the argument of the literature on critical junctures that moments of intense societal change broaden the range of feasible policy choices for ruling coalitions (Capoccia and Kelemen 2007, 348). The concurrence of the factors described above opened a window for further policy options that the Government initially did not deem feasible.

At first, full liberalisation of the cashew sector in exchange for financial assistance from the IFIs seemed to be the only possible path. However, the threat of losing elections and contestation within FRELIMO forced top ruling elites to weigh their options again to secure their political survival. In effect, closing factories and the protests of workers, labour unions, media and civil society groups as well as the unanimous vote of RENAMO and FRELIMO for the new cashew law in 1999 enlarged the ruling elite's political room for manoeuvre. On the one hand, the government could argue in front of international donors that the Mozambican population as well as FRELIMO and RENAMO parliamentarians were in favour of protecting the cashew sector. In addition, the 1999 cashew law provided support to cashew farmers – the donor's main group of concern. On the other hand, the threat of an economic collapse and of losing the upcoming elections pressured left-wing FRELIMO factions that pushed for a ban on RCN exports to defuse their demands. Hence, the political stalemate increased FRELIMO's win set and enabled the Government to adopt a protectionist law. Figure 7.3 summarises the evolution of the political settlement in the Mozambican cashew sector.

Figure 7.3. Evolution of the Political Settlement in the Mozambican Cashew Sector 1995-1999



Source: the author

The cashew law had to strike a delicate balance: FRELIMO had to provide support to the processing industry to show that it was not willing to sacrifice one of the country's most successful economic sectors – historically speaking – and thousands of jobs in the factories. However, it also had to cater to the interests of exporters of agricultural commodities whose economic strength outweighed the economic strength of cashew processors. While the holding power of cashew processors had declined together with the decline of the industry, RCN exporters benefitted from its breakdown because they could export more RCN. In the end, they were able to engage and survive in the cashew controversy of the 1990s while cashew processors did not survive in business.

The 1999 cashew law neither saved the cashew industry, nor the jobs of thousands of factory workers. By 2001, virtually all cashew factories had closed. The benefits for cashew producers that the new law established remained limited due to implementation problems on the part of INCAJU and the overall weak position of cashew growers in the value chain. However, the law created favourable conditions for cashew processing in Mozambique, primarily through the 18% tax on RCN exports, that laid the ground for the revival of the industry. Hence, next to RCN exporters, the winners of the cashew law were future cashew processors.[101]

In a 2001 article on the Mozambican cashew sector Cramer (2001, 1262) argued that

> *'[i]n Mozambique, all the evidence suggests that the state is in disarray, confused by a half-hearted ideological transformation and by being pulled constantly in different directions by donor interests […], and lacks the capacity or will to produce a coherent and emphatic analysis and policy package for industrial sectors; that the state and the domestic capitalist class is overwhelmed by the power of the international financial institutions […], of neighboring South Africa, and of large multinationals.'*

While this judgement holds some truth, it neglects the active role that political and economic elites played in the process of liberalisation and privatisation and in promoting specific

[101] In fact, once cashew processing took up again in Mozambique in the mid-2000s the Government explicitly supported the comeback of the industry. President Chissano himself arranged a meeting with one of the large Asian trading houses involved in the export of RCN, Gani Comercial Lda., to negotiate a deal that raw cashew nuts stayed in Mozambique for further processing (Buur et al., 2012, p. 28). In June 2005, President Guebuza travelled to the U.S. to unveil the Mozambican cashew brand '*Zambique*' at an event with U.S. buyer Suntree and U.S. government officials organised by TechnoServe.

economic sectors, such as the cashew or the sugar sector (Buur, Mondlane, and Baloi 2011; Macuane, Buur, and Monjane 2018; Pitcher 2002). The privatisation process gave FRELIMO the opportunity to control who gained access to the former state cashew processing plants – and to exclude allies of RENAMO from accumulation. Once the FRELIMO regime had lifted the ban on RCN exports, it also helped some of its members to enter the export of RCN which was tightly controlled by large trading houses of Indian origin (Buur, Balói, and Tembe 2012, 28). Supporting the cashew sector was an electoral strategy for the ruling FRELIMO coalition and a means to keep FRELIMO factions united.

The following chapter traces how the technological capabilities of the cashew processing industry have evolved since its revival in 2002 and which economic and social effects this had.

8 Grading Up or Down? The Economic and Social Effects of Upgrading in the Mozambican Cashew Industry

When the cashew law was adopted in 1999, almost all cashew processing factories had stopped operating. The domestic investors that had purchased the formerly state-owned factories during privatisation left the sector. Exporters of raw cashew nuts (RCN) quickly filled the vacuum that the breakdown of the industry created by increasing the volume of RCN exports. What remained was a number of run-down factories with outdated and in many cases badly maintained machines, many of them far away from cashew producing areas, and a group of disillusioned investors that claimed that they had lost all the money they had invested.

In 2004, the first of a number of small-scale cashew processing plants opened in the north of Mozambique with the support of the U.S. organisation TechnoServe which had launched a programme that aimed to revive the Mozambican cashew industry. This programme marked the comeback of the cashew industry after its breakdown at the beginning of the 20th century. In 2020, 15 years later, cashew processing ranks among Mozambique's most successful agro-processing sectors again with a capacity to process up to 70.000 tons of RCN per annum.

The revival of cashew processing in Mozambique was accompanied by a transformation of the industry which is traced in this chapter. The chapter centres on three central questions: First, how did the technological capabilities (TCs) of Mozambican cashew processors evolve since the revival of the industry in 2002 until 2019? Second, what is the current level of capabilities of the Mozambican processing industry? Third, what are the economic and social effects of upgrading in the Mozambican cashew industry?

As highlighted by Staritz and Whitfield (2019, 396) and as discussed in the theoretical framework, firms that seek to operate in global value chains (GVCs) need two types of TCs. First, they need capabilities to meet the minimum requirements of a GVC. These requirements may include price, quality, reliability, lead times, flexibility, logistics, stock holding, access to finance and linkages with suppliers and buyers. Second, firms need capabilities to upgrade once they have accessed a GVC. By continuously investing in their TCs, firms respond to changes at sector level, e.g. related to technological advances or consumer and buyer demands, with the aim to remain competitive.

This chapter draws on the more recent literature on upgrading in low-income countries (Barrientos et al. 2015; e.g. Ponte and Ewert 2009; Rossi 2011; Staritz and Whitfield 2017; Tokatli 2013) that understands upgrading as a multi-directional process that may include processes of upgrading, downgrading and deepening, as well as varying outcomes at firm and sector/country level.

Table 8.1 provides an overview of the key developments at firm level that were required for Mozambican cashew processors to gain access to the cashew GVC again and to upgrade. These developments are discussed in sections 1 and 2 of this chapter. The discussion is based on field work conducted in Mozambique in 2017 and 2018 and on secondary literature.

Table 8.1. Key Developments in Mozambique's Cashew Processing Industry

Major Developments		Activities at firm level
Restoring competitiveness to re-access the cashew GVC		
1	Going rural and scaling down	• Moving factories to cashew producing (rural) areas • Reducing the scale of processing units
2	De-mechanising cashew processing	• Shifting from mechanic to manual processing of RCN by introducing the 'Indian system' to deshell RCN
3	Forming an association to meet volume requirements	• Establishing the association of cashew processors *Agro Industriais Associados (AIA)* • Establishing the *Zambique* brand
Grading up to remain globally competitive		
4	Re-mechanising cashew processing	• Installing new processing technologies for de-shelling RCN, peeling kernels, sorting and packaging
5	Managing and increasing workforce	• Ensuring enough workforce at the processing units and managing the growing workforce efficiently • Reducing dependence on manual labour • Improving working conditions and worker skills
6	Investing in compliance with international food safety standards	• Changing the factory infrastructure & layout • Installing batch-processing • Introducing hazard control and risk mitigation and ensuring correct documentation • Investing in audits, training of workers and certificates
7	Increasing firm linkages	• Diversifying suppliers, buyers and end markets • Fostering inter-firm linkages and lobbying capacities • Fostering linkages with public entities and donors to gain access to support services

Source: the author

The left column of Table 8.1 indicates how cashew processors in Mozambique adapted their technological capabilities to restore global competitiveness and to upgrade. The right column of the table summarises the activities at firm level that each development entailed. Rows 1 to 3 list the developments that were necessary to re-access the cashew GVC in the early 2000s. Rows 4 to 7 list processes of upgrading in the Mozambican cashew industry that were required for firms to maintain globally competitive.

This chapter argues that the Mozambican cashew industry had to change the location and scale of cashew processing factories, adapt the technology used to process RCN, and form an association in order to gain access to the cashew GVC again after its breakdown. Once it had restored competitiveness, the industry had to upgrade to remain competitive and/or to become more efficient. Processes of upgrading included re-mechanising cashew processing, managing an increasing workforce, investing in compliance with international food safety standards, and increasing firm linkages. The current level of TCs of the cashew industry is moving between basic and advanced capabilities. The chapter illustrates that the economic and social effects of upgrading in the Mozambican cashew industry were largely positive at firm level and mixed at sector/country level.

The remainder of this chapter is presented along five sections. Section one traces major developments in the Mozambican cashew industry that were required to re-access the cashew GVC in the early 2000s. Section two centres on processes of upgrading that were required to remain competitive. It further discusses which factors drove upgrading in the cashew industry. Section three takes stock of the current level of capabilities of the Mozambican cashew industry using the capabilities matrix developed in Chapter 6. Section four discusses the economic and social effects of upgrading at firm level and at sector/country level. It draws on the operationalisation of the concept of upgrading in GVCs developed in the theoretical framework. Section five summarises the findings of the chapter and discusses important theoretical implications of these findings.

8.1 Restoring Competitiveness to Re-Access the Cashew GVC

Development 1: Going Rural and Scaling Down

Most of the large-scale processing units that were established during the colonial era were located in large cities, such as Maputo, Nacala or Beira, or in medium-sized towns, such as Xai-Xai. This increased the costs for transporting RCN over long distances from cashew producing areas to factories. Cashew kernels only make up 20% to 30% of the weight of RCN. Most of the processing units that were established in the early 2000s were therefore located in villages or towns close to cashew trees and orchards.

Reviving the cashew industry not only involved relocating processing plants to rural areas but also reducing their processing capacity and workforce. The installed processing capacity of factories established before independence ranged from 3.000 to 23.500 tons of RCN per year. The total installed processing capacity of the 19 operational factories in 1998 was approximately 160.000 tons of RCN. However, the volume of RCN available for processing at the end of the 1990s ranged between 3.000 and 8.000 tons of RCN (Leite 2000, Quadro VI).

The processing capacity of the newly established plants was much lower. In 2008, the total installed processing capacity of the 23 processing plants in operation reached approximately 40.000 tons of RCN. The installed processing capacity of the individual factories ranged between 500 to 5.000 tons of RCN per year (da Silva Francisco, Antonio A. and Barrneho 2008, 52). For this reason, the workforce employed in the cashew industry was significantly lower.

While sizing down had been an important step towards competitiveness, it soon turned out that factories that processed below 1.000 tons of RCN per year were not able to survive. According to one interviewee, only factories that processed above the threshold of 1.000 tons of RCN per year were able to justify a full-time manager. Cashew processing is management intensive, notably the management of production processes and workers at the factories. Factories without a full-time manager were not efficient enough. Some also had difficulties to produce kernels the whole year round (interview with Independent Consultant, 6 March 2018, Maputo; interview with TechnoServe/former Programme Director, 21 February 2018, Maputo). Today, processors have medium-scale units with a capacity to process up to 10.000 tons of RCN per year in order meet market requirements. In addition to scaling down, Mozambican cashew processors also had to change the processing technologies used to cut open RCN as discussed in the following section.

Development 2: De-Mechanising Cashew Processing

Restoring global competitiveness in the early 2000s also involved changing the processing technology used in most Mozambican factories. De-mechanising the shelling of raw cashew nuts was at the core of this change.

From the colonial era until the breakdown of the sector, most cashew processors used mechanical technologies, i.e. mechanical impact shelling, to cut open the shells of RCN. Impact shelling involved roasting raw nuts to extract the cashew nut shell liquid (CNSL) and to make the cashew shell brittle for shelling. CNSL was used for heating the frying pan. Nuts were then opened by an impact on the brittle shell to (ideally) split the nut into halves. Mozambican processors installed machines for impact shelling that used a centrifugal impeller that hurled the nuts against the inside wall of a metal impact cylinder. To reduce kernel breakage, the speed of the impeller was adjusted to the nut size.

This system had significant flaws. First, is was very capital-intensive, increasing the companies' fixed costs and reducing the financial means available for the procurement of RCN. Second, the breakage rate of impact shelling was relatively high, reducing the sales revenues per unit of raw nut processed. In the 1990s, the price difference between whole and broken kernels reached up to 50% per unit (McMillan, Rodrik, and Verduzco-Gallo 2014, 23). Third, roasting raw nuts in a 200°C CNSL bath sometimes scorched cashew kernels, jeopardising their uniform appearance. Due to these flaws, unit revenues per ton were too low to cover the costs of raw materials and to make reasonable profit (Abt Associates Inc. 1999, 8–9). Finally, the factories' dependence on a constant high supply of high quality raw nuts to meet their processing capacity became increasingly problematic (McMillan, Rodrik, and Verduzco-Gallo 2014, 24).

When the cashew processing sector was revived at the beginning of the 2000s, cashew processors switched to a different processing technology, the so-called Indian system. This system was used in rural India and suited the country-specific conditions in Mozambique, i.e. a large available low-skilled workforce in rural areas and limited access to electricity, far better. The Indian system was brought to Mozambique by Shakti Pal, an Indian national who had previously developed IT systems for cashew factories in India. Pal had managed a processing factory in the north of Mozambique and was hired by the U.S. organisation TechnoServe as an expert for a cashew rehabilitation programme (interview with TechnoServe/former

Programme Director, 21 February 2018, Maputo). In the course of this programme, the Indian system was adapted to the Mozambican context.

This system was a labour-intensive, artisanal technology. To cut open the cashew shell, workers used pedal-activated cutters (see Picture 8.1) that clamped two converging blades into the nut along its seam. Workers then opened the nut by opening one of the blades. Instead of roasting raw nuts to make them brittle, the new factories used steam heating (see Picture 8.2). During steam heating, the CNSL remained in the shell tissue and could be extracted at a later stage.

Picture 8.1. Pedal-Activated Cutter

Source: the author, courtesy of Emaju

Picture 8.2. Ovens Used for Steam Heating

Source: the author, courtesy of Condor Caju

The adapted Indian system increased the quality of kernels and the margins of processors. First, the breakage rate was significantly lower than the rate achieved with impact shelling. Second, the Indian technology is better suited for processing raw nuts of varying size (McMillan, Rodrik, and Verduzco-Gallo 2014, 24). Third, the pedal-activated cutters used for de-shelling were not capital-intensive. This increased the fraction of variable costs. The sales revenues per unit of RCN processed were higher and the new plants were more cost effective. This was crucial to cover the costs for purchasing RCN during the harvest season (Abt Associates Inc. 1999, 7). Fourth, the newly established factories depended less on electricity. This was a major advantage given the lack of electrification in rural areas at the beginning of the 2000s. For instance, the Condor factory in Namentil operated without electricity during its first 18 months (Paul 2008, 12).

Development 3: Forming an Industry Association to Meet Volume Requirements

When cashew processing took up again in the early 2000s, cashew processors were not able to meet the volume requirements of kernel buyers. Scale was a big hurdle for global market access. Kernel traders usually order whole containers full of one type of cashew kernel grade and not mixed containers of different grades.[102] In order to acquire access to global markets, small-scale cashew processors in Nampula – with the assistance of TechnoServe – created the Association *Agro Industriais Associados (AIA)* that jointly exported the processed kernels of its members under a brand called *Zambique* (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo).[103]

At the beginning, AIA sold everything its members produced to the Dutch kernel broker Global Trading and Agency (GTA), including broken kernels and smaller kernel pieces. The group of cashew processors that formed AIA began to disintegrate because most processors left the sector at the end of the 2000s (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht). Condor Caju is currently the only cashew processor that still exports under the *Zambique* brand. Today, Mozambican cashew processors have medium-scale processing units and are able to meet the volume requirements of buyers. The following section summarises the core arguments made in this section.

Summary and Discussion

To sum up, to restore global competitiveness, the Mozambican cashew industry evolved from an industry characterised by large-scale mechanised factories, mostly located in larger cities or towns, to small-scale artisanal processing plants in rural areas. Increasing competitiveness also involved reducing the number of commercial outputs of factories to cashew kernels only. Cashew processors no longer extracted CNSL because it was not used for the roasting process and its economic value had declined. Forming the Association *Agro Industriais Associados (AIA)* and establishing the *Zambique* brand was essential for small-scale processors to find international buyers and meet their volume requirements.

[102] Cashews are graded into three categories: white wholes, white pieces and scorched. White wholes are graded according to size, white pieces according to the way in which kernels broke and scorched according to colouring and blemishing (Red River Foods 2012).

[103] This is a common way to proceed for small-scale processors across Sub-Saharan Africa in the period of industry set-up (see Whitfield's (2012) work on Ghana's pineapple sector).

The entrepreneurs involved in reviving the industry were not the first generation of cashew processors in Mozambique and could partly draw on existing infrastructure. However, they required substantial investment, production and linkage capabilities as well as industry-specific knowledge to set up or rebuild factories, buy machines, set up a production line using the Indian system, hire, train and pay workers, link up with other processors and establish a brand.

Some cashew processors viewed the shift from a fully mechanised to a predominantly manual processing system as a step towards deindustrialisation. Workers who had experience in working in large-scale mechanised processing factories perceived the shift from machine to manual cutting as a loss of status (Paul 2008, 16). However, the newly established processing factories had lower material costs, a balance between manpower and technology that matched the conditions in Mozambique, and they re-created employment for low-skilled rural workers.

De-mechanising was crucial to revive the Mozambican cashew industry in the early 2000s. Starting in 2012, cashew processors have re-mechanised cashew processing to remain globally competitive. This turnaround is driven by changes in the processing technology market that are related to cost and demand-driven factors as explained in the following section.

8.2 Grading Up to Remain Competitive

Development 4: Re-Mechanising to Compete

Due to the availability of higher quality jobs in the major cashew processing countries Vietnam and India, Asian cashew processors had to increase the wages of factory workers as well as the working conditions in their factories. This trend has pushed the development of improved processing technologies in Asia that particularly facilitate the cutting of raw nuts – the most cumbersome and dirty stage of cashew processing. Although prices for cashew kernels are increasing, price volatility is a characteristic feature of the market for cashew kernels (Fitzpatrick 2011a, 20). Unsurprisingly, the development of cheaper processing machinery coincided with a period of low world market prices for cashew kernels. This further incentivised processors in Vietnam and India to mechanise cashew processing to reduce labour costs.

Next to these cost-related factors, demand-driven factors played a role. The increased demand for cashew kernels has incentivised cashew processors to invest in more efficient and safer processing techniques that reduce the dependence on labour.

As a response to the availability of new and affordable technologies to process RCN, some Mozambican processors, e.g. Condor, ETG Korosho and Olam, have started to mechanise some stages of the manufacturing process. Automatic cashew cutting machines (see Picture 8.3) are replacing pedal-activated cutters. Some processors have also installed cashew peeling machines (see Picture 8.4), aspirators to clean kernels before packing, metal detectors and packing machines. They mainly import machines from Vietnam, India and partly from China.

Picture 8.3. Automatic Cutting Machine

Source: the author, courtesy of Condor Caju

Picture 8.4. Automatic Peeling Machine

Source: the author, courtesy of Condor Caju

According to the factory manager of Condor Nuts in Anchilo, the breakage rate achieved by pedal-activated cutters is still lower than by automatic cutting machines (interview with Condor Cajú/Production Director, 21 March 2018, Anchilo). Some processing factories in Mozambique therefore have two production lines: pedal-activated cutters for high-value, large-sized nuts and automatic cutters for medium-sized and smaller nuts. Even factories with a high degree of mechanisation still depend on manual labour. For instance, workers are needed in the warehouses, to heat, load and unload ovens, to load calibration machines, to separate shell and kernel after cutting, to sort out kernels where parts of the testa (the skin that covers the edible cashew kernel) have not been removed by the peeling machine, for grading, and for preparing packed boxes for transport. In particular, the grading of kernels is labour-intensive.

The shift towards mechanisation is increasing the level of service needed to maintain machines at the factories. After-sales service is a challenge for cashew processors. They order processing equipment from a narrow range of suppliers from Vietnam, India and China. The latter offer

little after-sales service and processors therefore hire technicians from abroad for the maintenance of processing equipment (Fitzpatrick 2011a, 11).

In Mozambique, investing in new cashew processing machines to automate the calibration, cutting, peeling, and packing of cashew kernels was not a response to higher labour costs or requirements to increase food and labour safety. The cost of labour in Mozambique remains rather low. Processors benefit from an industry-specific arrangement that they negotiated with the Mozambican Government and the cashew labour union when the sector was revived at the beginning of the 2000s. This agreement allows them to pay workers the agricultural instead of the manufacturing minimum wage (interview with SINTIC/General Secretary, 10 March 2018, Maputo). The agricultural minimum wage in 2018 in Mozambique was US$68 per month compared to a minimum wage of US$108 per month in the manufacturing sector (Hanlon 2018). Rather than cost-related factors, the low productivity of workers, high absenteeism rates, and challenges to manage workers are pushing Mozambican cashew processors to invest in new technologies as discussed below.

Development 5: Managing an Increasing Workforce

During the heydays of cashew processing in the 1970s, the industry employed up to 17.000 workers in 14 factories (Aksoy and Yagci 2012, 4). In 1999, the only processing factory that remained operational employed less than 1.000 workers (Hanlon 2000, 39). During the rehabilitation phase (2002-2009), the number of jobs created by the cashew industry slowly increased. In the past ten years, the number of workers employed in the processing plants doubled from approximately 6.500 to between 10.000 and 15.000 workers (INCAJU 2018). In particular, the industry creates employment for women who make up 57% of the workforce in the factories (Costa 2019, 40). Labour costs make up the largest chunk of total business costs. They account for around 22% of total processing costs (Correia 2015, 18–21).

Managing the growing workforce at the factories presents a challenge for processors due to low levels of labour productivity, high absenteeism rates and a high labour turnover in the factories. For instance, approximately 2.500 workers are registered at the Condor Nuts factory in Anchilo, Nampula, however, only circa 1.500 workers come to work every day (interview with Condor Cajú/Manager, 20 March 2018, Nampula). These are common problems in countries at early stages of industrialisation.

Establishing processing units in rural areas entailed building up a new labour force, suited for working in a factory. For instance, only 14% of the factory workers in the factories by Miranda Industrial in Angoche, Namige and Meconta (all Nampula Province) that were set up during rehabilitation had industrial work experience. Hence, *'instilling a factory time-and-work ethic'* (Paul 2008, 14) among workers was (and remains) a challenge for cashew processors.

Absenteeism rates currently range between 10% and 60%, depending on the tasks workers perform at the factory. Usually, absenteeism rates in the female-dominated peeling and sorting sections are much lower than in the male dominated cutting and deshelling sections.

The reasons for the high absenteeism rates are diverse. Many workers engage in agriculture and other paid work, next to being employed in a cashew factory. During the planting and harvest seasons, many workers do not come to work because they work at the farms or on their plot. According to Brad Paul, many workers only seek work at the factory if their economic situation pushes them to do so: *'[…] [W]ork choices are viewed as casual, transitory, and a complement, not a substitute, to agricultural labour'* (Paul 2008, 15). Some processors and experts I interviewed further argued that a lack of 'work culture' or an industrial mindset (Costa, cited in Paul 2008, p. 14) adds to the problem of absenteeism. Factory workers do not perceive themselves as labourers but rather as farmers. Their daily routines as well as economic production are still shaped by the rhythms of agriculture. A study by TechnoServe (2015, 18) cites a *'lack of a long-term attitude towards maintenance of a work source; responsibility and commitment to a steady job; alcoholism; […] and general lack of ambition for material goods'* as further reasons for high absenteeism rates.

Contrary to this perception, Stevano (2015, 243) argues that individuals seek work at the cashew factories in order to diversify their livelihoods. Most workers have experience in task-based wage employment. Hence, the status of a waged worker is not new to them. Moreover, factory workers use their income to hire seasonal agricultural workers. According to Stevano, this suggests that high absenteeism rates are a consequence of low salaries paid in the factories that do not allow for hiring agricultural workers to work on their important agricultural plots the whole year round, besides poor working conditions.

Workers at the factories work six days per week and are paid on a piece rate basis. For instance, workers in the cutting/deshelling section at Condor Nuts receive the minimum wage if they crack open 20 KG of RCN per day and come to work regularly. If they exceed this minimum

target, they receive a premium (interview with Condor Cajú/Manager, 20 March 2018, Nampula). The daily minimum targets vary according to the processing stage. In 2015, the minimum daily target for workers in the peeling section at ETG Korosho's factory in Chiuré was 3 KG per day and in the sorting section 65-70 KG per day (Stevano 2015, 241).

Implementing bonus schemes and other incentives to increase productivity seems to be difficult (interview with Caju Ilha/Factory Manager, 27 March 2018, Angoche). Processors linked the payment of workers to their output in order to off-set the problem of high absenteeism rates, i.e. workers receive less than the minimum wage if they do not perform their daily target and/or do not come to work regularly.

Work relations between cashew processors and factory workers are instable. Many of the factory workers do not have permanent contracts, partly due to seasonal shortages. This has, among others, effects on their entitlements to holiday and sick leave. Despite improvements in the working conditions at the factories, e.g. improved hygiene and the provision of day care for children, it seems that the tasks and payment offered at the cashew factories are not attractive (enough) for workers to fully commit themselves to wage labour. The General Secretary of the Cashew Workers' Union (SINTIC) emphasised this point:

> *Due to the unsatisfactory income, he [the factory worker] ends up going to the factory as a last resort. At this moment, agricultural work on a farm pays more than going to work in a cashew factory. It's a problem of social conditions, wage, safety and hygiene conditions at work and remuneration, but principally remuneration.'* (interview with SINTIC/General Secretary, 10 March 2018, Maputo)

In sum, high absenteeism rates are a response to alternative wage employment and agricultural work, weak contractual arrangements and the (low) level of attractiveness of work in cashew factories. As mentioned above, these challenges rather than cost-related factors pushed Mozambican cashew processors to mechanise some of the processing stages at their factories. The following sub-section discusses how customer-related trends related to food safety affected cashew processing in Mozambique.

Development 6: Investing in Compliance with International Food Safety Standards

A trend that is becoming increasingly important – but not yet mandatory as discussed in Chapter 6 and further below – for the Mozambican cashew industry is compliance with international food safety standards. Buyers of cashew kernels as well as the governments of some cashew-importing countries have increased requirements regarding food safety, working conditions, labelling, packaging, and traceability (Fitzpatrick 2011a, 15).[104] Since the mid-2000s, four cashew processing firms in Mozambique have installed or are in the process of installing risk identification and control mechanisms as well as food safety management systems. These systems encompass a range of procedures, practices, controls, and documentation that increase food safety (TechnoServe 2017, 17).

The most common international risk control system adopted by Mozambican processors is Hazard Analysis and Critical Control Points (HACCP). HACCP is not a standard in itself but rather a risk assessment tool that is a key element of international food safety standards. A HACCP system *'identifies, evaluates, and controls hazards that are significant for food safety at all stages of the food manufacturing operation'* (TechnoServe 2017, 17). Next to HACCP, some processors comply with more demanding international food safety standards, such as the African Cashew Alliance Quality and Sustainability Seal (ACA Seal), the seal of the British Retail Consortium (BRC) and the ISO 22000 standard.

Table 8.2 provides an overview of the most important risk identification mechanisms and food safety management systems for the cashew processing industry and indicates which Mozambican processors currently comply with them.

[104] There are legislative (required by law of the importing countries) and non-legislative requirements (imposed by buyers as part of their purchasing practice), such as price, contract fidelity, quality and certification related to risk control and food safety. While processors need to comply with legislative requirements, some buyers might accept a compromise on their non-legislative requirements (Fitzpatrick 2014, 89).

Table 8.2. Food Safety Management Systems Installed by Mozambican Cashew Processors

Type of Food Safety Management System	Explanation	Compliant Cashew Processing Firms
Hazard Analysis and Critical Control Points (HACCP)	• internationally recognised risk management tool • requires a firm to develop control measures and monitoring systems for all identified critical control points in the manufacturing process in order to reduce hazards and to verify the status of these control points regularly • HACCP includes 7 core principles: 1) conduct a hazard analysis; 2) determine critical control points (CCP); 3) establish critical limits; 4) establish a monitoring system of CCP; 5) establish corrective actions; 6) establish procedures to verify that HACCP system is working effectively; 7) document all procedures and records concerning these principles and their application	Condor, Mocaju, ETG Korosho, Caju Ilha (in process)
African Cashew Alliance Quality and Sustainability Seal (ACA Seal)	• complies with requirements of international food safety standards, e.g. US Food Safety Modernization Act, quality standards as well as social and labour standards • ACA seal benchmarks include a) 14 specific food safety/quality areas, including infestation, foreign material, clumping/blocking, taste, and grade compliance; and b) global social compliance standards: absence of child/prison labour, absence of abuse or harassment, and fair employee wages, as well as local labour laws	Condor, Mocaju (in process)
British Retail Consortium (BRC	• BRC is a UK trade organisation that represents the interests of retailers • internationally accepted standard for safety and quality assurance that includes safety practices with a strong focus on a Quality Management System (QMS), HACCP (by Codex Alimentarius) and Good Manufacturing Practices	Condor (in process), Olam (in process)
ISO 22000	• ISO 22000 is a family of international standards that addresses food safety management • defines the Food Safety Management System requirements that companies need to meet in order to comply with food safety regulations all over the world • includes 4 elements: 1) interactive communication along the food chain; 2) a food safety management system; 3) HACCP principles; 4) prerequisite programmes to maintain a hygienic environment throughout the food chain	Mocaju

Sources: own data compiled during face-to-face surveys conducted with cashew processing firms in Mozambique and factory visits from February to April 2018, ACA (2019) and PECB (2014).

Especially buyers from the EU and the U.S. expect processors to comply with international standards. Buyers from the Middle East and Asia are less strict (interview with Mocaju/METL Group/Director, 19 March 2018, Nampula). However, compliance with HACCP or similar risk control systems is becoming essential for entering major markets in Asia too. The EU has requirements on toxins and contamination and adopted legislation on traceability. This legislation requires that all actors in the value chain must document where they sourced products and to whom they sold them. Requirements for the U.S. market are set by the FDA Food Safety and Modernization Act (FSMA). European and U.S. importers have the responsibility to verify that their suppliers comply with legislative requirements and that the food they produce is safe. Hence, international buyers of cashew kernels from Mozambique need to oversee the production process of their Mozambican suppliers. Mozambican cashew processors therefore need to be prepared to work more closely with buyers from the European Union and the United States, e.g. to comply with inspection requests (Fitzpatrick 2014).

Complying with international food safety standards required considerable investment and production capabilities, human resources as well as specific knowledge, e.g. related to documentation, allowed materials in factories, hygiene, and labour standards. On the one hand, firms had to finance the pre-assessment and the final audit, the certificate as such and trainings of workers on phytosanitary procedures.[105] On the other hand, they had to make investments in the factory infrastructure and layout. The latter included installing hand washing points with special taps and blow dryers at all entry points as well as air curtains above doors, changing the plumbing system and sanitary facilities, using non-glass materials for lighting and windows, e.g. in packaging rooms, moving walls, and changing flooring. Firms also adapted the production process by installing hazard control points and mechanisms to mitigate risks, improving hygiene throughout the different processing stages, ensuring correct documentation, e.g. of cleaning and maintenance, and monitoring.[106] Processors developed manuals, rules and regulations for each section of the factory, registration sheets to track the movement of people and product and verification sheets for maintenance, cleaning and sanitisation (TechnoServe 2017, 17).

[105] According to TechnoServe (2017, 17), trainings cover the following topics: cleaning, sanitisation, and maintenance procedures for infrastructure and equipment, waste management, pest control and document control procedures, maintenance plans, inventory management, hygiene codes and quality control records.
[106] See interviews with TechnoServe/Programme Director (2018, Pemba); Condor Cajú/Manager (2018, Nampula); Condor Cajú/Production Director (2018, Anchilo); Mocaju/METL Group/Director (2018, Nampula).

In addition to complying with international food safety standards, some factories have introduced batch-processing to increase traceability. Traceability refers to

> *the ability to verify the origin or location of a product by means of documentation and recorded identification. In the context of cashew processing, having traceable cashew kernel means that a processing facility can verify where each batch of processed cashew kernel came from originally'* (TechnoServe 2017, 15).

Batch-processing enables processors to trace batches of RCN from the same origin through all processing stages by labelling pouches of RCN from the same origin with a specific code and separating them from RCN or kernels from other locations. Skills needed to implement batch-processing are related to warehouse organisation, creating a functioning system for keeping records and registers, training staff on how to keep track of the batches by date and location, and ensuring staff commitment and regular monitoring (TechnoServe 2017). The current marketing system for RCN in Mozambique makes it difficult to implement full traceability. Smallholder farmers sell raw nuts to intermediary traders who aggregate RCN and sell them on to cashew processors (sometimes several layers of intermediary traders are involved). Hence, establishing traceability not only involves tracing nuts within the factory, i.e. from storage to packaging, but also from farm to factory.

Complying with international food safety standards and ensuring traceability is not (yet) required by (most) international kernel buyers. The market for cashew kernels is a sellers' market. Buyers are struggling to get enough product because the global demand for cashew kernels has increased rapidly in the past 10 years. Some buyers say that they require HACCP certification or at least a proof that factories are in the process of installing HACCP. However, what seems to matter most is price and product quality, not certification (interview with TechnoServe/Programme Director, 12 March 2018, Pemba). Buyers neither stop purchasing cashew kernels if they cannot get access to certified kernels, nor are they currently willing to pay a price premium for certified product from Mozambique or for increased traceability. In fact, only one Mozambican processor that exports to several countries indicated that he is getting a price premium for certification form his U.S. buyers.

By acquiring certification, factories make sure that they will be able to sell their product in the future and that they are able to weather the oscillating demand for kernels as highlighted by an international kernel broker.

> *'So, last year it [HACCP and other types of certification] wasn't important because there was a shortage. This year, if you don't have the certificate, you're last in line. That's how important it is. So, it is important but also the market is the market. I can give you examples where a container was rejected in March and then in August the market is so short it's not funny. The same customer calls, he says 'Is my rejected container still in the stock?' 'Yes.' 'Can I please have it?' 'But you rejected it.' 'I know.' […] So that's how important the certification is. Is the world being driven towards it? Absolutely. There's no two ways about it. You buy a quality insurance. You buy it. Tick the box.'* (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht)

In sum, as soon as the market weakens and there is a surplus of kernels available globally, it is likely that some buyers will only purchase from HACCP certified factories. The premium for certified processors is that they will sell their product while other processors do not sell at all or have to find new target markets. As food safety requirements evolve in the EU, the U.S. and Asia, compliance with risk control and food safety systems is likely to become a basic requirement for accessing the cashew GVC in the future.

The following section centres on how Mozambican cashew processors have increased their linkages with other processors, buyers, suppliers, traders, and non-value chain actors involved in the local cashew value chain.

Development 7: Increasing Firm Linkages

During the past 20 years, cashew processors in Mozambique have diversified their suppliers, buyers and end markets. In addition, they increased inter-firm linkages and invested in their relationships with government representatives, INCAJU officials, and a range of other organisations that provide support services to the cashew processing industry. These changes have pushed processors to enhance their linkage capabilities.

When cashew processing took up again in the early 2000s, Mozambican processors exported all kernels they produced to the Dutch kernel broker Global Trading Agency through the agency AIA (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht). Today, processors sell to approximately 30 buyers worldwide, mainly to large secondary processors in North America, the European Union and the Middle East (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018). The diversification of buyers reflects an increase in demand, not only in the EU and the U.S. – Mozambique's traditional kernel export markets – but also in Asia and the Middle East. For instance, the appetite for cashew kernels has increased considerably in China (9.32%), Korea (21.81%), Kuwait (39.92%), and the United Arab Emirates (21.29%) between 2005 and 2019 (Cashewinfo Research Desk 2019, 60–61).

All processors, domestic as well as international, target a variety of end markets in different regions. However, firm ownership seems to play a role in determining the main target markets of processors. For instance, Sunny and CN Caju, two recently established Chinese processing firms, are the only companies that cater to the Chinese market, next to other international end markets. Condor Caju, a Mozambican processing firm that is owned by a businessman with Portuguese roots, focuses on the U.S.- and the European market. ETG Korosho, a large multinational cashew processor based in Dubai, exports a large share of its kernels to the United Arabic Emirates. Olam, a large multinational company based in Singapore, is the only firm that exports cashew kernels from Mozambique to India and Vietnam (Alfândega de Moçambique and Autoridade Tributária de Moçambique 2018).

Mozambican processors are not only dealing with more buyers but also with more suppliers. The production of cashew kernels in Mozambique has increased due to the growing global demand for cashew kernels and because larger volumes of RCN (although not sufficient) are available in Mozambique.[107] To enhance the production of cashew kernels processors need to be able to secure enough RCN during the harvest season between October and January. This requires extensive linkages with RCN suppliers, notably contacts to intermediary traders of raw nuts in different districts.[108]

[107] RCN production in Mozambique has increased since the mid-1990s, however, it is increasing slowly and unevenly. The compound annual growth rate of cashew production in Mozambique was 3.1% in the past 20 years. This is low compared to Tanzania, (9.5%), Ivory Coast (7.9%) or Nigeria (5.6%) USAID (2017).

[108] There is currently little involvement of cashew processors in the production of RCN, however, some processors are planning to invest in plantations in order to increase the volume and quality of RCN (interview with Condor Cajú/Manager, 20 March 2018, Nampula).

Processors that are not linked to trading houses source most RCN from intermediary traders. Some work together with agents that buy RCN for them during the harvest season. Smaller amounts of RCN are also sourced directly from smallholder farmers, usually in the areas surrounding the factories, and from RCN exporters (interview with Condor Cajú/Manager, 20 March 2018, Nampula; interview with Mocaju/METL Group/Director, 19 March 2018, Nampula). Relationships with suppliers or cashew producers are unstable and ad hoc due to the established cashew marketing system and high competition for raw nuts. Processing factories that are owned by exporters of RCN and other agricultural commodities usually have more stable relationships with producers and traders because they buy different crops the whole year round (interview with Caju Ilha/Factory Manager, 27 March 2018, Angoche; interview with Indo Africa Import Export/General Director, 12 April 2018, telephone interview).

Next to linkages with buyers and suppliers, cashew processors maintain relations with other processors, government representatives as well as organisations that provide support services to the sector. In 2005, processors revived the association of cashew processors AICAJU (originally created in 1995). AICAJU promotes the interests of processors vis-à-vis INCAJU, customs, exporters of raw cashew nuts and the cashew labour union at the meetings of the cashew committee (established in 2001) and at unofficial meetings. AICAJU currently has seven members and offices in Nampula and Maputo that coordinate the association's activities (interview with AICAJU/President, 23 March 2018, Nampula).

While most processors form part of AICAJU, they also draw on their personal relationships with members of the political elite to advance their interests. This is important because cooperation between firms within AICAJU is not always efficient. AICAJU's members include companies that only process cashews and companies that are involved in cashew processing and the export of RCN. AICAJU's activities are hamstringed by the diverging interests of its members and a lack of financial resources.

Finally, processors increased their linkage capabilities to cooperate with donor organisations, e.g. to revive the processing industry after its breakdown (TechnoServe, U.S.), to install food safety management systems (TechnoServe), to provide support to the processors' association

AICAJU (GIZ, Germany & TechnoServe), or to establish small satellite processing units (SNV, the Netherlands).[109]

In sum, Mozambican processors are managing relations with more buyers from different end markets and with different requirements. Managing relations with actors within and outside the cashew value chain requires considerable resources (time and personnel). Strong linkages with suppliers and buyers are vital for processors to stay in business. Maintaining relations with other cashew processors, public officials and support organisations can be important sources of knowledge and learning.

Summary and Discussion

Mozambican cashew processors have invested in their production and linkage capabilities to remain globally competitive. Processors invested in new processing technology, infrastructure as well as in international certificates. They increased their production capabilities to master new processing technologies and install food safety management systems. Finally, processors developed their linkage capabilities by diversifying suppliers, buyers and end markets.

These developments in the Mozambican cashew industry are linked to different types of upgrading at firm level. First, the diversification of end markets, suppliers of RCN and technological equipment, and kernel buyers corresponds to end market and supply chain upgrading. Second, installing new processing technologies at the factories and food safety management systems involves upgrading production processes. Third, by complying with international standards processors upgrade the quality and potentially the value-added of their final product. Fourth, mechanisation and compliance with international standards improve the working conditions in the factories. This can be considered as social upgrading.

Managing an increasing workforce involves upgrading production processes at the factories. However, in the case of Mozambique work relations remain unstable and challenges related to high absenteeism rates, low labour productivity and a high labour turnover persist. Cashew processors are trying to solve these issues by replacing workers with machines. Increasing mechanisation can be viewed as a positive development because it shows that processors have the financial means to invest in new technologies and have acquired the know-how to use

[109] Satellite processing units that only implement some of the processing stages no longer exist today.

them. However, the advent of the machines also suggests that the capabilities of Mozambican processors to manage workers efficiently – due to various reasons – are insufficient.

Social upgrading in the Mozambican cashew industry is a by-product of mechanisation and compliance with international food safety standards and not the result of a purposeful effort of processors to improve working conditions in the factories.

Five core drivers pushed Mozambican cashew processors to increase their technological capabilities. First, the growing global demand for cashew kernels pushed to increase kernel production and to diversify their end markets. Second, the increasing production of cashew kernels required firms to secure more raw material for processing and to diversify their suppliers of raw nuts. Third, processors diversified their buyers due to the growing demand for cashew kernels in Asia and the Middle East. Fourth, increasing labour costs in the main kernel producing countries in Asia and the need to weather volatile prices for kernels promoted the development of improved and cheaper technologies to process RCN in India and Vietnam. These technologies were used to increase productivity and to combat the challenge of low worker productivity in Mozambique. Finally, higher requirements related to food safety and traceability by buyers and the governments of some kernel importing regions, e.g. North America and the E.U., pushed some Mozambican processors to install food safety management systems, such as HACCP, and to increase traceability within their factories.

The following section takes stock of the level of competitiveness of the Mozambican cashew processing industry today.

8.3 Taking Stock: Current Level of Technological Capabilities of the Mozambican Processing Industry

The analysis in this section is based on the cashew technological capabilities matrix developed in Chapter 6. The matrix illustrates which capabilities cashew processors in Mozambique require to access the cashew GVC and to upgrade. It contains three levels of complexity of TCs: basic production capabilities, advanced production capabilities, and strategic diversification and secondary processing.

Mozambican cashew processors are currently moving between the levels of basic production capacity and advanced production capacity with a work force that, as discussed above, is captured in the level of basic production capacity. Most processors have the investment and linkage capabilities to source enough RCN during the harvest season for their factories. Furthermore, they benefit from lower RCN prices due to the RCN export tax. Some factories do not operate all year round, partly because of seasonal shortages of RCN and partly because the owners of the factories export raw nuts directly instead of processing them. Importantly, those cashew processors that focus on export manage to meet volume requirements of international buyers. This suggests that there is a potential for processing when the right conditions are met.

All the largest cashew processors have invested in mechanisation in recent years. However, their factories are not fully mechanised, i.e. some processing steps are performed manually and some by machines. Some processors, e.g. Condor, have two parallel lines of production, one with manual cutting and one with mechanised cutting (interview with Condor Cajú/Manager, 20 March 2018, Nampula). Due to a lack of maintenance service by Asian equipment firms, adapting machines to the Mozambican context and servicing machines remains a challenge (Fitzpatrick 2011a, 11). Despite increasing mechanisation in the Mozambican cashew sector, the level of mechanisation in Mozambican factories is far from the level of mechanisation achieved in some factories in Asia or West Africa where the work force is both better disciplined and stable (at least in Asia). Table 8.3 underneath provides an overview of which processing methods are currently used in Mozambique's cashew processing factories.

Table 8.3. Processing Methods Used in Selected Mozambican Cashew Factories

Factory Name	Factory Location	Capacity (tons of RCN/year)	Year established	Ownership	Method Used for Different Processing Stages	Breakage Rate
Condor Nuts	Anchilo	10.000	2005	Domestic (Portuguese origin)	• Calibration machine • Mix of automatic cutting machines and pedal-activated cutters • Peeling machine and manual peeling • Manual grading of whole kernels, machine for grading of pieces • Aspirator, metal detector and packing machine	ca. 30%
Condor Caju	Namentil	6.000	2008	Domestic (Portuguese origin)	• Calibration machine • Mix of automatic cutting machines and pedal-activated cutters • Peeling machine and manual peeling • Manual grading of whole kernels, machine for grading of pieces • Aspirator, metal detector and packing machine	n/s
Condor Anacardium	Macia	5.500	2018	Domestic (Portuguese origin)	• Calibration machine • Mix of automatic cutting machines and pedal-activated cutters • Peeling machine and manual peeling • Manual grading of whole kernels, machine for grading of pieces • Aspirator, metal detector and packing machine	n/s
Caju Ilha	Angoche	4.500	2012	Domestic (Indian origin)	• Calibration machine • Mix of automatic cutting machines and pedal-activated cutters • Manual peeling • Manual grading • Aspirator, metal detector and packing machine	ca. 10%*

Factory Name	Factory Location	Capacity (tons of RCN/year)	Year established	Ownership	Method Used for Different Processing Stages	Breakage Rate
Indo Africa	Mecua	1.000	2010	Domestic (Indian origin)	• All processing steps currently performed manually	ca. 30%
Emaju	Monapo	50	2016	Foreign (Denmark)	• All processing steps currently performed manually	n/s
CA Company/ Sunny	Nampula	5.000	2017	Foreign (China)	• Mix of automatic cutting machines and pedal-activated cutters • No information on other processing stages	n/s
METL/Mocaju	Murru-pula	3.000	2016	Foreign (India)	• All processing steps currently performed manually	n/s
ETG Korosho	Nampula	4.500	2015	Foreign (multi-national)	• Calibration machine • Mix of automatic cutting machines and pedal-activated cutters • Peeling machine and manual peeling • Manual grading • Aspirator, metal detector and packing machine	ca. 35%
DML Cashew	Angoche	1.500	2018	Foreign (India)	• Mix of automatic cutting machines and pedal-activated cutters • No information on other processing stages	n/s
* This number was provided by the factory manager. It is unlikely that the breakage rate is that low.						

Sources: own data compiled during face-to-face surveys conducted with cashew processing firms in Mozambique and factory visits from February to April 2018

Generally, Mozambican processors still depend heavily on (cheap and relatively unskilled) manual labour. As discussed in section 8.2, the industry benefits from a special deal with the Government that was made in the early 2000s and that allows processors to pay their workers the agricultural instead of the industrial minimum wage.

Some processors comply with basic international food safety management systems, such as HACCP, and are in the process of acquiring more advanced certificates, e.g. the BRC seal or the seal of the African Cashew Alliance.

None of the Mozambican cashew processors has moved towards strategic diversification. Strategic diversification refers to engaging in secondary processing, i.e. producing cashew-based snacks, and targeting local or regional markets. However, Condor has mentioned that it is planning to do secondary processing for the local and regional markets in the future. ETG Korosho is also thinking about setting up a secondary processing plant in Sub-Saharan Africa but has not yet decided in which country.

A major concern for external supporters of the sector is that Mozambican cashew processors are not as efficient as processors in other cashew-processing countries, e.g. Vietnam, India or to some extent in West Africa (interview with Independent Consultant, 6 March 2018, Maputo; interview with USAID/Agricultural Portfolio Manager and USAID/Policy Portfolio Coordinator Agriculture, 22 February 2018, Maputo). High costs of finance, low labour productivity and the low quality of RCN are among the factors that constrain the competitiveness of the Mozambican cashew processing industry. Press releases by the Mozambican Government regularly publish what most interviewees declared as questionable figures on increasing RCN production, cashew processing capacities and job creation in cashew factories (Club of Mozambique 2019; e.g. Macauhub 2019). In contrast, according to the manager of a Condor factory the Mozambican processing industry is *'on a very, very, very tough spot'*, (Correia 2019).

Without the protection of the cashew law, it is unlikely that the industry would currently be able to compete globally. This means that although the industry has made efforts to upgrade its product, production processes, supply chains, and end markets it is still and probably for the years to come dependent on state protection.

The following section discusses the economic and social effects of upgrading in the Mozambican cashew industry.

8.4 Effects of Upgrading in Mozambique's Cashew Industry

This section takes a closer look at the effects of upgrading in the Mozambican cashew sector at firm level and at country/sector level. It draws on the operationalisation of upgrading developed in the theoretical chapter. This operationalisation breaks down the concept of upgrading into several traceable, interlinked components: 1) drivers of technological capability change; 2) technological capability change at firm level; 3) learning channels that firms use to build their TCs[110]; 4) the sets of TCs that firms enhance by building capabilities; 5) the type(s) of upgrading this corresponds to; and 6) the economic and social effects of upgrading at firm, sector, and country level.

Effects of Upgrading at Firm Level

The economic and social effects of upgrading at firm level are generally positive. Some Mozambican cashew processors capture higher rewards because they increased productivity. Through the extensive use of machines, they can produce higher volumes of RCN more efficiently. The shift towards mechanisation will also reduce these processors' dependency on local labour in the mid-term and defuse the challenge of low labour productivity. In addition, by diversifying buyers and end markets, processors managed to reduce their risks.

However, those cashew processors that made large investments in new processing technologies also increased their risks. Cashew processors depend on a steady and increasing supply of RCN to make their investments pay off. On the one hand, Mozambique is prone to natural disasters, such as droughts, floods or cyclones (Bertelsmann Stiftung 2020, 18). On the other hand, since the end of September 2017, the country is witnessing increasing attacks by Islamist militants in the Province of Cabo Delgado, one of the country's most important cashew-producing areas. This may force cashew growers to flee to safer regions and to abandon their cashew trees. Both factors may reduce the quantity of RCN available for processing and the ability of processors to reap the benefits of their investments in processing machines.

In addition, processors have calculated the returns on their investments based on the current cashew policy framework. A reform of the legal framework may abolish (some of) the protectionist measures towards the processing industry, such as the RCN export tax or the

[110] Firms' learning channels are discussed in more detail in Chapter 9.

temporary export ban. This would increase competition between cashew processors and exporters of RCN and subsequently RCN prices in Mozambique with effects on the overall costs of cashew processing. Although such a reform is currently unlikely, discussions on reducing the RCN export tax, pushed by representatives of international organisations such as USAID, have been ongoing for years.

The following section discusses the effects of upgrading in the Mozambican cashew industry at sector and country level.

Effects of Upgrading at Sector/Country Level

The effects of upgrading at sector/country level are mixed. As a result of mechanisation, the Mozambican cashew processing industry is able to process more RCN. This increases the exports of cashew kernels (INCAJU 2018). Installing food safety management systems improved the quality of employment for workers. In particular, processors enhanced the hygiene at the factories in order to acquire certificates. Workers participated in hygiene trainings, which might also have positive impacts on the hygiene at workers' homes (interview with Emalink/Director, 16 March 2018,Nampula). Workers also received training on risk control during the production process and on how to use new machines, e.g. for deshelling and packing (TechnoServe 2017).

Machines are increasingly taking over the most dirty, unpleasant and health damaging tasks at the factories. By mechanising the cutting of RCN, less workers come into contact with the corrosive and toxic cashew nut shell liquid (CNSL) that harms workers' hands. To make work in the cashew industry more attractive, cashew processors are providing free lunch and in some cases free breakfast for workers and have installed day care facilities for children (e.g. at the factories of Condor, METL, Caju Ilha and ETG Korosho).[111] This creates more employment opportunities for female workers. Mechanising cutting and deshelling increases the demand for workers in the peeling and sorting sections which are dominated by women (interview with Condor Cajú/Manager, 20 March 2018, Nampula; interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

Despite these positive effects, upgrading also has a range of negative or at least critical effects at sector/country level related to 1) employment creation; 2) the cashew industry's lobbying

[111] See interviews with Condor Cajú/Manager (2018, Nampula); ETG Korosho/Manager (2018, Nampula); Caju Ilha/Factory Manager (2018, Angoche); Mocaju/METL Group/Director (2018, Nampula).

power; 3) wages for factory workers; 4) the value-added in Mozambique; and 5) the creation of backward linkages.

1. Effects of Upgrading on Employment Creation

Increasing mechanisation will reduce the number of low-skilled workers and increase the number of high-skilled workers required in the cashew industry in Mozambique in the mid- to long-term.[112] Cashew processors emphasise that it is not their goal to reduce jobs by increasing mechanisation. For now, they are not planning to fully mechanise the manufacturing process but only specific (unpleasant) stages of it, such as deshelling RCN. This actually increases the number of workers needed in the peeling, sorting and packing sections in the short-term because machines increase the overall production of cashew kernels in Mozambique (if processors manage to secure enough RCN for processing) (interview with Condor Cajú/Manager, 20 March 2018, Nampula). While the minimum target for workers in the cutting section is to cut open 10 KG of RCN per day, automatic cutting machines cut open 17 KG of RCN per hour (interview with Caju Ilha/Factory Manager, 27 March 2018, Angoche).

However, increasing mechanisation will reduce the workforce needed in the factories in the mid- to long-term as highlighted by the Head of Economy Department of INCAJU (9 March 2018, Maputo):

> *'The higher the level of mechanisation the less work force is needed, but this will increase efficiency. In the end, the country as a whole wins even if this involves that some people lose their jobs at the factories.'*

A look at state-of-the-art-processing in Vietnam and in Côte d'Ivoire confirms this assessment. Fully mechanised cutting and peeling reduces the work force needed in these sections by approximately 70% (interview with Condor Cajú/Manager, 20 March 2018, Nampula; Viet Nam News 2012). While one of the top performing cashew processors in Mozambique currently employs circa 1.500 low-skilled workers to process 10.000 tons of raw cashew nuts per year, a well performing cashew processor in Vietnam employs only circa 150 higher-skilled workers to

[112] See interviews with INCAJU/Head of Economic Department (2018, Maputo); TechnoServe/Programme Director (2018, Pemba); Global Trading & Agency/CEO (2018, Sliedrecht).

process the same amount of RCN (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht; responsAbility Investments AG 2016).

The Dutch trader Global Trading and Agency (emphasised that processors in Sub-Saharan Africa need to invest in mechanisation to make up for disadvantages caused by high costs for credits and a missing market for cashew by-products:

> *'[…] [I]n Benin and in Burkina Faso […] we are mechanising very quickly because otherwise if you lose out on your competitive edge, you've lost anyways, right? You already have disadvantage on finance. You already have disadvantage on by-product. And now you're going to be disadvantaged on your processing? No ways. […] [E]ven if we lose 50% of the jobs, so what? You're creating a local economy. That's good for the country. […] [T]he way I look at it, losing the jobs is not the point. […] [W]e are willing to lose 600, 500 jobs out of 1.500. […] It means we'll interact with probably 4.000 farmers extra […].'* (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht)

In fact, mechanisation is likely to create a shift in employment opportunities in Mozambique from factory to farm. Mechanisation increases the processing capacity of cashew factories and the demand for RCN from cashew processors. This might push cashew farmers to increase production as a response to a greater demand for RCN from processors. In short, while mechanisation may reduce formal employment opportunities at the factories, it might increase predominantly informal employment opportunities on farms or plantations.[113]

2. Effects of Upgrading on the Industry's Lobbying Power

Next to effects on employment creation, the mechanisation of cashew factories in Mozambique will also have implications on the cashew industry's lobbying power. The latter's most important argument for the protection of the processing industry, among others through an 18% surtax on the export of RCN, is that it is an important source of employment for low-skilled workers in rural areas, particularly for women. If Mozambican cashew processors follow the

[113] Factory workers and farmers may be the same people or generate income for the same family.

same path as processors in the major kernel producing countries, such as Vietnam, the industry will have to come up with other arguments to justify its protection.

3. Effects of Upgrading on Real Wages for Factory Workers

Increases in the share of profits for processors do not necessarily translate into increased real wages for workers. Wages for workers are a sensitive issue for cashew processors because they make up the largest chunk of total business costs (Correia 2015, 18). Currently, workers at the processing factories receive the agricultural minimum wage if they come to work regularly and fulfil their minimum daily targets as discussed in section 8.2 of this chapter. The agricultural minimum wage is the lowest national wage category (US$68 per month in 2018).

Even though the industry has consolidated itself and today two thirds of the processing plants are run by foreign firms, cashew processing remains in the lowest wage category. Hence, it is increasingly foreign investors that benefit from measures to protect a no longer infant industry. If the Mozambican Government decided that cashew processors had to pay their workers the manufacturing minimum wage (US$108 per month in 2018) (Hanlon 2018) it is likely that processors would either leave the sector, increase workers' minimum daily targets, and/or invest in mechanisation more quickly to reduce the workforce needed at the factories.

4. Effects of Upgrading on the Value-Added in Mozambique

Apart from stagnating wages for workers, upgrading has also not led to increased value-added in Mozambique. The governance structure of the cashew GVC makes functional upgrading, i.e. moving towards secondary processing, including branding and distribution to non-local or non-regional markets, near to impossible. Local secondary processors are competing with powerful large international companies, e.g. from Europe and the U.S., such as Kraft (U.S.), Red River (U.S.) or Reynold (Norway). These companies have invested in roasting lines and brands and are able to supply a range of product lines to supermarkets (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht). Getting a place on the supermarket shelf next to established brands requires very good knowledge of the dynamics on international retail markets and the support of executives of supermarket chains as highlighted by a former TechnoServe programme director (21 February 2018, Maputo).

'[W]hen you get into the retail market and you're doing your brands, […] it's extremely cut-throat. […] [I]f you don't have an understanding of that dynamic, you will get wiped out. Nobody wants you on that [supermarket] shelf. […] The customer doesn't know you. To get the message to them is going to be extremely difficult and expensive and everybody that's on the shelf doesn't want you there and will do anything, just about, will lose money, will lose lots of money for a long time to keep you off.'

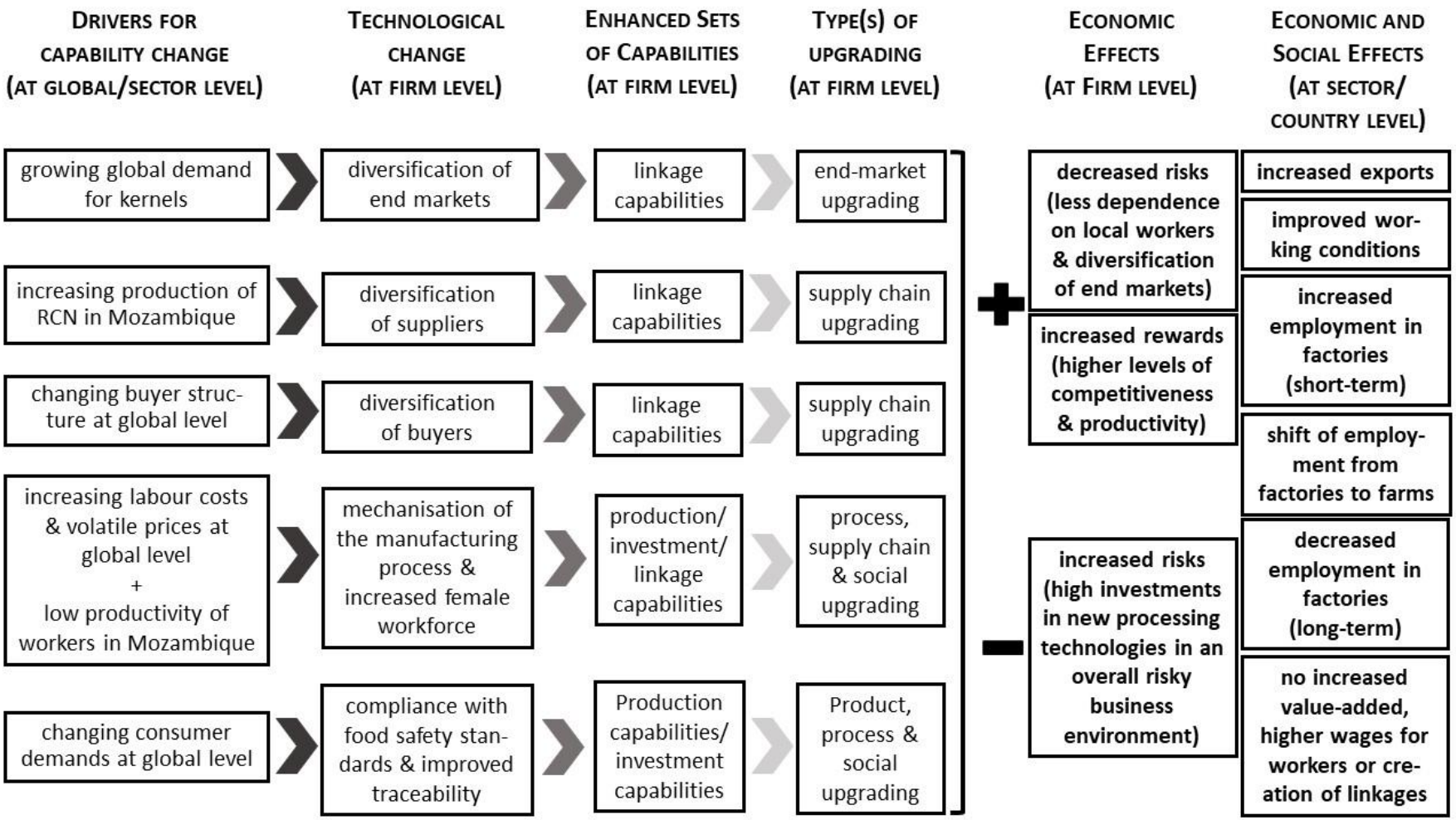
One local (Condor) and one multinational primary processor (ETG Korosho) mentioned plans to invest in secondary processing in Mozambique. However, due to the unfavourable governance structure in the cashew kernel GVC they aim to target the regional and not the global market. This underlines findings of the GVC literature that suppliers from low-income countries are more likely to upgrade production processes and products by meeting the requirements of lead firms and international standards than to acquire higher value-added functions in a chain (Kaplinsky and Morris 2002; Staritz and Whitfield 2017; Tokatli 2013). Buyers of cashew kernels from Mozambique – mainly large wholesalers and secondary processors – have no interest in supporting functional upgrading among Mozambican processors because this would narrow their own profits. According to a study by USAID (2017), international secondary processors captured around 35% of the value added in the global cashew value chain in 2016.

5. Effects of Upgrading on the Creation of Backward Linkages

Finally, upgrading has so far not led to the creation of backward linkages in Mozambique. There are currently no Mozambican manufacturers of processing machines or national or regional equipment maintenance firms. This forces processors to rely on imports and foreign maintenance services for their capital investments (Fitzpatrick 2011a). The creation of backward linkages is also affected by the strong involvement of the state in the cashew sector. Agricultural inputs for cashew farmers are supplied for free or at a low cost by INCAJU. This has discouraged private actors to become involved in the supply of agricultural inputs for cashew farmers as discussed in Chapter 5 and the Conclusion of the thesis (interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

Figure 8.1 summarises which factors drove (and drive) upgrading in the Mozambican cashew industry and which effects upgrading had at firm level and at sector/country level.

Figure 8.1. Upgrading Processes and Outcomes in the Mozambican Cashew Industry



Source: the author

To sum up, this section argues that, at firm level, process upgrading has increased the rewards of some cashew processors because it has increased the levels of productivity and efficiency and reduced the dependency on labour. In addition, supply chain and end market upgrading has reduced processors' risks. However, large investments in new processing technologies have also increased the risks of some processors. The overall business environment in Mozambique and particularly in the agro-processing sector is risky, e.g. due to natural disasters such as droughts, armed conflicts in one of the country's major cashew-growing areas, and ongoing discussions about a reform of the cashew policy framework. These factors may affect the ability of cashew processors to make their investments pay off.

At sector/country level, upgrading produced mixed effects. Mechanising the production process (process upgrading) has increased the exports of cashew kernels and will create more employment in the short-term, particularly for women. In addition, mechanisation and compliance with food safety standards have improved the working conditions in the factories. However, upgrading is likely to produce a shift of employment opportunities from factory to farm and reduce the local workforce needed at the cashew factories in the mid- to long-term. Although processors have invested in their TCs, they have not acquired new functions in the cashew GVC that increase the value-added in Mozambique. Finally, upgrading in the Mozambican cashew industry has not led to the creation of backward linkages.

The following section summarises the main findings of this chapter and discusses important theoretical implications of these findings.

8.5 Conclusion

This chapter discussed three questions: First, how did the technological capabilities of firms in the Mozambican cashew processing sector evolve since the revival of the industry in 2002 until 2019? Second, what is the current level of capabilities of the Mozambican processing industry? Third, what are the economic and social effects of upgrading in the Mozambican industry?

The first section of the chapter traced three important developments in the Mozambican cashew industry that were necessary to restore the competitiveness of the industry and to gain access to the cashew GVC again. The second section traced processes of upgrading that were required to remain competitive. It also discussed which factors drove upgrading in the

Mozambican cashew industry. Section three assessed the current level of competitiveness of the industry using the technological capabilities matrix for the cashew industry developed in Chapter 6. The fourth section discussed the economic and social effects of upgrading at firm level and at sector/country level.

The findings of this chapter underline the argument raised by Staritz and Whitfield (2017, 19; 2019, 396) that firms in low-income countries need a considerable amount of TCs and information just to access a GVC. On top of meeting these minimum requirements, firms need to be able to make continuous investments in their TCs to remain globally competitive.

In the case of the Mozambican cashew sector, the processing industry relocated cashew factories to rural areas, reduced the scale of processing units, introduced a new processing technology and adapted it to the Mozambican context in order to re-access the GVC for cashew kernels after the breakdown of the industry. Local investors formed an association to pool cashew kernels for export to fulfil the volume requirements of international buyers. Once this was accomplished, processors upgraded the technology used for processing, installed food safety management systems, diversified their buyers, end markets and suppliers, and increased linkages with other actors in the sector. In short, processors enhanced their investment, production and linkage capabilities to remain competitive. As a by-product of these efforts, processors improved the working conditions and raised the share of female workers in the factories. In terms of upgrading, these efforts translate into end market, supply chain, product, process, and social upgrading.

The analysis in this chapter suggests that the Mozambican cashew industry has embarked on a transition from basic to advanced production capacities. However, it is important to keep in mind that the cashew processing industry is only globally competitive because it is strongly protected. Processors benefit from a range of industrial policy measures, notably an 18% surtax on the export of RCN and a special deal with the Mozambican Government that allows them to pay workers the agricultural minimum wage. This type of heavy protection reduces the pressure to invest in TCs among processors. It is unlikely that processors in Mozambique would be able to survive and that (foreign) investments in the processing industry would continue if the export tax was lifted or processors had to pay factory workers higher wages.

The findings of this chapter are in line with the more recent literature on upgrading in low-income countries that calls for broadening and deepening our understanding of the concept of

upgrading (Barrientos et al. 2015; e.g. Ponte and Ewert 2009; Rossi 2011; Staritz and Whitfield 2017; Tokatli 2013). The findings emphasise four important points.

First, upgrading needs to be understood as a process that spans across various levels of analysis. Processes of upgrading include drivers at the global and sector levels, technological capability change at firm level, and outcomes at firm and at sector/country level.

Second, upgrading produces mixed economic and social effects and can be a multi-directional process that may involve simultaneous up- and downgrades. For instance, investing in new processing technologies improves the quality of work in Mozambican cashew factories. However, the advent of the machines is likely to decrease employment for low skilled workers in rural areas in the mid- to long-term.

Third, the type of upgrading matters. It makes a difference whether firms 'merely' upgrade their supply chains, end markets, products and production processes or if they manage to acquire new, higher value-added functions in a GVC. It is important for firms to ensure efficiency and product quality to remain competitive and to reduce risks by diversifying suppliers, buyers, and end markets. However, without functional upgrading they remain locked out of higher value-added segments of a GVC, including non-manufacturing activities such as design, branding and distribution that yield higher rewards (Staritz and Whitfield 2017, 13).

Finally, investing in TCs to access a GVC is not always linked to an upgrade understood as moving towards more complex technology and scaling up. In fact, a technological downgrade marked the beginning of the revival of the Mozambican cashew industry in the early 2000s. Processors replaced a fully mechanised production line with a manual processing system. On top of that, they transformed a large-scale processing industry into artisanal-like small-scale facilities to re-access the cashew GVC as summarised by the manager of the Caju Ilha cashew factory in Angoche: *'Technology-wise we went from horse to donkey'*.

This chapter teased out several processes of upgrading in the Mozambican cashew industry. It further identified factors that drove upgrading in the cashew industry, traced how processors developed their TCs to respond to these drivers, and discussed the economic and social effects that upgrading produces at firm and sector/country level. While it is crucial to understand which drivers incentivise firms to enhance their capabilities, this does not shed light on how firms acquire new capabilities. The following chapter teases out which channels Mozambican cashew processors used to enhance their TCs.

9 Learning Channels of Mozambican Cashew Processors

The aim of this chapter is threefold: First, it seeks to tease out learning channels that cashew processors in Mozambique use(d) to acquire technological capabilities (TCs) needed to access the global cashew value chain and to upgrade. Second, it aims to explain why cashew processors use specific learning mechanisms, or put differently, why some potential channels of technological learning – industrial policies and the interactions between international buyers and local firms within the global value chain (GVC) – did not facilitate capability building among processors in Mozambique. Third, the chapter explains why the learning efforts among Mozambican processing firms vary, i.e. why some firms make substantial investments in capability building while others do not.

This chapter argues that learning mechanisms at firm level, such as learning by doing, hiring skilled labour or visits to other cashew processing countries, are the most important channels for building capabilities of cashew processors in Mozambique. Technical assistance by the U.S. organisation TechnoServe also played an important role in increasing the capabilities of some processing firms. The cashew law, implemented by the national cashew institute (INCAJU), does not drive capability building among processors due to a lack of conditionality and monitoring mechanisms. In fact, the design of the law as well as its effects on producer prices reduce the pressure on cashew processors to invest in their TCs. INCAJU lacks the technical know-how to provide assistance to processors and the ability to collect industry-specific data. International buyers are currently not a source of knowledge transfer for cashew processors in Mozambique because switching costs for buyers are relatively low, international standards are not yet mandatory, and pressure to invest in projects to promote social upgrading is limited. The role of buyers is therefore limited to providing information on the type and quality of products that consumers in global markets demand. Varying levels of commitment to driving innovation and capability building of cashew processing firms, depending on whether firms focus on cashew processing or engage in cashew processing and RCN export, further affect firms' learning efforts and the overall level of competitiveness of the Mozambican cashew industry.

This chapter is structured along three sections. Section one presents the learning channels that cashew processors in Mozambique used to acquire technological capabilities and classifies these channels according to source, scope, and time frame. Section two discusses why industrial policies in the Mozambican cashew sector, and more particularly the National

Cashew Institute INCAJU, did not drive capability building among cashew processors in Mozambique. Section three reflects on how power dynamics within the global cashew value chain pose limits to firm-level upgrading and learning in Mozambique. The final section summarises the process of technological capability building among Mozambican cashew processors by looking at factors that incentivised firms' initial investment in the cashew sector, sources of learning, and factors that shape processors' learning efforts. It builds on Melese's (2019) model for studying processes of TC building at firm level presented in Chapter 4.

9.1 Learning Channels of Mozambican Cashew Processors

Cashew processors in Mozambique used a range of channels within and outside the cashew GVC to increase their TCs and to gain access to sector-specific tacit knowledge (see Table 9.1 below). The rows marked in yellow refer to learning mechanisms that played a particularly important role during the revival of the cashew sector in the early 2000s. The rows marked in orange refer to learning mechanisms that were important during the industry's revival and were still important in 2019. The white rows are learning mechanisms that cashew processors used in 2019 (but did not use when the industry was revived). The findings mainly build on primary data collected through firm surveys and expert interviews in Mozambique, but also on secondary literature, e.g. donor reports.

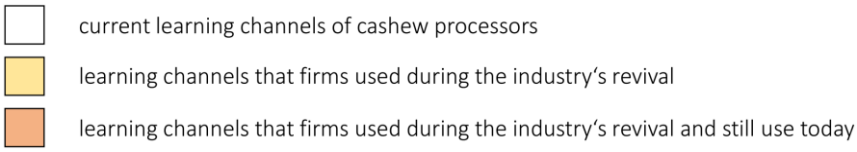
Table 9.1. Learning Channels of Cashew Processors in Mozambique 2002-2019[114]

Learning channel	Scope	Firms
Within the GVC		
Buyers give feedback during audits	International buyers visit cashew processors in Mozambique on a regular basis and give feedback to processors. → *No purposeful process of knowledge transfer and technical support.*	Condor, ETG Korosho, Olam, Mocaju/METL?, Caju Ilha?
Buyers provide international standards	International buyers inform processors about global industry standards that they (and international retailers) require. → *No purposeful process of knowledge transfer and technical support.*	all

[114] This table lists the learning channels that were mentioned by the cashew processors and sector experts that I interviewed in Mozambique and the impact report of TechnoServe's Mozacajú project. It is possible that cashew processors use(d) further learning mechanisms that they did not mention during the interviews.

Buyers provide technical assistance and tacit knowledge	The Dutch kernel broker Global Trading & Agency (GTA) visited cashew processors in Mozambique on a regular basis and actively provide technical assistance and transfer tacit knowledge, e.g. on factory layout, processing equipment or training of workers ✓ *Active knowledge transfer and technical support*	Condor, former cashew processors
Outside the GVC		
Firm level		
Learning by doing	Entrepreneurs, factory managers and other higher-ranking employees learn on the job. ✓ *Active acquisition of technical knowledge*	all
Hiring skilled labour	Cashew processors hire factory managers or higher-ranking employees that were trained in other cashew factories in Mozambique or expatriate workers from other cashew processing countries. Multinational cashew processors hire staff that was trained at one of their international factories and send their Mozambican staff to international factories for training. One cashew processor hired an employee of TechnoServe as a factory manager. ✓ *Active knowledge transfer and technical support*	Condor, Caju Ilha, ETG Korosho, DML Cashew
Travelling	Cashew processors visit cashew processing factories in other countries. Some also visit foreign equipment manufacturers and participate in international conferences. ✓ *Active acquisition of technical knowledge*	Condor, IndoAfrica
Knowledge exchange within the company	Multinational companies use their knowledge on cashew processing in other countries to set up, run and upgrade their cashew factories in Mozambique. ✓ *Active knowledge transfer and technical support*	ETG Korosho, Olam, Mocaju/METL
External		
TechnoServe	TechnoServe transfers information, technical support and grants to cashew processors. ✓ *Active knowledge transfer and technical support*	Condor, ETG Korosho, Olam, Caju Ilha, Emaju
Competitors	Cashew processors exchange information with their competitors in Mozambique and visit the factories of competitors. ✓ *Active acquisition of technical knowledge*	Emaju, IndoAfrica
INCAJU	INCAJU is a source of information about the cashew sector and current developments related to cashew in Mozambique. INCAJU also helped to get access to finance through the guarantee fund. → *No purposeful process of knowledge transfer and technical support.*	CA Company/ Sunny, Caju Ilha, Condor, DML Cashews

AICAJU	AICAJU is a source of information about the cashew sector and current developments related to cashew in Mozambique → *No purposeful process of knowledge transfer and technical support.*	ETG Korosho, Mocaju/METL, IndoAfrica, Caju Ilha, Condor, DML Cashew
Cashewinfo.com	The platform cashewinfo.com is a source of information about the cashew sector and current developments related to cashew at global level. → *No purposeful process of knowledge transfer and technical support.*	Condor



Source: own data collected during firm surveys and expert interviews combined with a report from TechnoServe (2017) and the classification of learning channels from (Marchi, Giuliani, and Rabellotti 2018, 393).

Within the cashew value chain, international buyers are currently a source of information, but not a source of learning. They give feedback during regular audits and indicate which global industry standards processors should comply with but do not explicitly transfer knowledge to cashew processors in Mozambique or provide technical assistance. However, an international kernel buyer from the Netherlands, Global Agency and Trading (GTA), was an important learning channel for Mozambican processors when the cashew industry was revived.

Outside the cashew value chain, cashew processors use several channels to acquire capabilities. At firm level, the most important learning mechanisms are learning by doing, hiring skilled labour, travels abroad to visit other cashew factories, equipment manufacturers and to attend conferences, and knowledge exchange within multinational companies that operate several cashew processing plants in different countries.

External sources of learning and information included TechnoServe, competitors, the National Cashew Institute (INCAJU), the Association of the Cashew Industry (AICAJU) and the internet platform cashewinfo.com.

Cashew processors mentioned INCAJU, AICAJU and cashewinfo.com as sources of information on developments in the cashew sector at country and global level but not as actors that actively supported capability building. Gaining access to sector-specific information is important and can be costly for firms in low-income countries. The latter therefore benefit from institutions

that disseminate information and reduce information costs for firms (Khan 2000, 21). However, as indicated in Table 9.1 above these learning channels do not involve a purposeful process of knowledge transfer and technical support to cashew processors in Mozambique. The remainder of this section therefore centres on learning channels that go beyond providing sector-specific information.

Learning Within the Cashew GVC: Technical Support from Global Trading and Agency (GTA)

When TechnoServe launched its project to revive the cashew industry in Mozambique in the early 2000s, cashew processors received support by the Dutch kernel broker Global Trading and Agency (GTA). GTA connects suppliers in cashew-producing countries to end consumers. The owner of GTA became involved in a cashew project by the Dutch development organisation SNV in Mozambique at the beginning of the 2000s. In 2002, he met Filipe Miranda, the first entrepreneur to invest in a small cashew processing factory in Nampula Province during TechnoServe's rehabilitation project. GTA became a shareholder of Miranda's company. GTA's owner helped to set up several cashew processing businesses in Mozambique, visited factories regularly to do spot checks, and helped Mozambican processors to break into the market by establishing the brand *Zambique*.

During that time, GTA was the exclusive buyer of *Zambique*. GTA bought all the kernel stocks from the companies involved in *Zambique* in mixed containers[115], stocked them in Rotterdam and distributed Mozambican kernels to the world from there. At first, end consumers were sceptical about cashew kernels from Mozambique and it took some time and financial incentives to build the *Zambique* brand. When setting the price for Mozambican cashew kernels, GTA used the prices from Vietnam and India as a benchmark and deducted his commission as well as a discount. When GTA managed to sell *Zambique* product above this price, it reimbursed the overprofit to the cashew processors in Mozambique (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht).

GTA provided technical assistance and helped Mozambican cashew processors to break into the global market. The company's strong commitment towards the Mozambican cashew

[115] Meeting the volume requirements of international buyers is a big hurdle for cashew processors during the initial phase of their business. Usually, buyers order containers full of one kernel size and not mixed containers. Finding a buyer that buys mixed containers is an exception.

industry motivated TechnoServe to work with more entrepreneurs to increase kernel production. What drove (and still drives) the owner of GTA was a passion for Africa and for development, next to an interest to secure good quality cashew kernels for his business and to make money. This makes GTA an exceptional buyer. The following section discusses learning mechanisms at firm level that Mozambican cashew processors used to build their TCs.

Learning Mechanisms at Firm Level

Learning by doing was an important learning mechanism for all cashew processors in Mozambique. Some processors, e.g. Caju Ilha and IndoAfrica, were familiar with the cashew sector before they started to process cashews in Mozambique, because they were traders of raw cashew nuts (RCN). A factory manager at Condor and the owner of Emaju gained experience in the cashew sector by working as consultants for donors. The manager of Caju Ilha's factory in Angoche was the only firm representative I interviewed that had worked at a cashew factory before. All other factory owners, managers and high-ranking employees had no previous experience in cashew processing when they opened their own cashew factory or were hired as factory managers. Table 9.2 provides an overview of the background and previous experience in cashew processing of the owners and high-ranking employees of cashew processing firms in Mozambique that were interviewed for this thesis.

Table 9.2. Background of Company Owners and High-Ranking Employees

Processing Firm	Type of Previous Experience
Condor	**Company owner:** experienced businessman with multiple businesses but had no previous experience in the cashew sector when he opened his first factory; became involved in the cashew sector through TechnoServe during rehabilitation and received technical support by TechnoServe **Factory manager in Nampula:** engineer by training who learned on the job **Factory manager in Macia:** worked for TechnoServe's Mozacajú programme before he became factory manager; learned on the job **Manager at Condor's Office in Nampula:** learned on the job
Caju Ilha	**Company owner:** the family has a long history in cashew trading and passed on knowledge about the sector from generation to generation; no previous experience in cashew processing

	Factory manager in Angoche: had experience in cashew processing when he joined Caju Ilha because he worked for a cashew processor in Mozambique before
IndoAfrica	Company owner: pilot by profession who became involved in trading cashews and other agricultural products in Mozambique; no previous experience in cashew processing
ETG Korosho*	General Director of ETG Korosho Mozambique: worked for ETG in Tanzania before he registered ETG in Mozambique Country head at Nampula office: learned on the job Factory manager in Nampula: had experience in agricultural commodity trade from working with ETG; no previous experience in cashew processing
Olam*	-
Mocaju/METL*	Director of METL group Mozambique: no previous experience in cashew processing
Sunny	Company manager in Maputo: no previous experience in cashew processing
Emaju	Company owner: worked (and continues to work) as a consultant in the cashew sector for international donors when she opened the cashew factory in Monapo; had a lot of experience in working with cashew producers and knew other cashew processors and their factories well; no previous experience in cashew processing Factory manager in Monapo: recent university graduate with no experience in cashew processing
DML Cashew	Company director: no direct experience in cashew processing but runs a fish processing factory in Angoche, so he is familiar with the business context in Mozambique; comes from Kerala, India and has personal contacts to cashew processors there

* Multinational company with cashew processing factories in other countries

Source: own data collected during firm surveys.

Learning by doing is an important channel of learning for firms at the lower end of GVCs. However, it is also a slow and costly way of learning. Cashew processors in Mozambique combined learning by doing with further sources of learning. On the one hand, some processors travelled to other cashew-producing countries, including in West Africa, to visit cashew factories. During these visits, processors gained knowledge about state-of-the-art cashew processing and exchanged information with foreign cashew processors. For instance, before deciding on which machines to purchase for his factories, the owner of Condor visited several factories and manufacturers of processing equipment in Vietnam and India to compare. He was also part of a delegation organised by TechnoServe to West Africa to visit state-of-the-art

processing factories. Based on the information he gathered during these trips, he decided to purchase machines from the Indian manufacturer GI and to copy the flow and layout of the heavily mechanised factory 'Fludor'[116] in Benin (interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

On the other hand, cashew processing firms in Mozambique acquired new capabilities by hiring skilled labour. Condor hired a former employee of TechnoServe as a factory manager who had coordinated a comprehensive support programme for the cashew sector in Mozambique. Due to his work at TechnoServe, the new factory manager had contacts to international buyers, government representatives, value chain actors within Mozambique and international certification companies. In addition, he had extensive knowledge on how to install food safety management systems at factories and state-of-the-art processing technologies due to visits to processing factories in Sub-Saharan Africa that he organised while working for TechnoServe.

The processor Caju Ilha hired a factory manager who worked at the cashew factory Miranda Industrial. Miranda Industrial was the first factory that was set up with the support of TechnoServe in the early 2000s and served as a model for a series of processing factories.[117] The cashew processing firm ETG Korosho hired expatriate workers from India for their cashew processing factories in Mozambique. Hiring skilled personnel is an important channel of learning, however, the number of people with experience in cashew processing in Mozambique is limited and hiring high-skilled labour is expensive.

Finally, the processing firms ETG Korosho, Olam and Mocaju/METL exchanged technical know-how and skilled labour within the firm. These processors are part of multinational companies that run cashew processing factories in other countries, inter alia in Sub-Saharan Africa. Next to learning mechanisms at firm level, cashew processors also used external learning channels such as cooperating with international organisations as discussed in the following section.

[116] Fludor is a Benin-based cashew processing company. The factory was established in 2016 with support by TechnoServe (TechnoServe 2016).

[117] Miranda Industrial operated three cashew factories in Namige, Angoche and Meconta. The firm left the cashew processing sector after some years.

External Learning Channels: Technical Support from Technoserve

TechnoServe was an important source of information, funding and technical support when the cashew industry was revived and between 2014 and 2017. Finding local entrepreneurs that were ready to invest in cashew processing in Mozambique and increasing the TCs of the cashew industry was the aim of a programme by TechnoServe that was implemented between 2002 and 2009. TechnoServe hired a former manager of a cashew factory in Geba, Nampula province from India with vast experience in cashew processing for the implementation of TechnoServe's programme to rehabilitate the industry. This manager had the required information about state-of-the-art cashew processing and advised and trained a range of local entrepreneurs who invested in cashew processing, including the owner of the firm Condor. TechnoServe supported local entrepreneurs to set up small-scale cashew processing plants in rural areas, invest in manual processing technology and form AIA in order to gain access to the cashew GVC again.

Between 2014 and 2017 TechnoServe implemented the programme Mozacajú which received funding by the United States Department of Agriculture (USDA). Mozacajú was a '*value chain linkage project'* (Pietrobelli and Staritz 2018, 562) that sought to strengthen the capabilities of cashew processors in Mozambique as well as the linkages between processors and international buyers. Particularly, the programme supported processors in Mozambique in installing food safety management and quality control systems and connected processors with international kernel buyers who were currently not buying from processors in Mozambique.[118]

TechnoServe hosted representatives of the U.S. roaster and wholesaler Caro Nut in Mozambique and linked them to the processors Condor and ETG Korosho. Caro Nut has placed several orders from both firms since. In addition, TechnoServe introduced the U.S. kernel buyer Red River Foods to Condor and the South African kernel buyer Nutrade to Olam, ETG Korosho and Caju Ilha.

The Mozacajú programme supported three factories in receiving Hazard Analysis and Critical Control Points (HACCP) certification.[119] It informed senior management members of processing factories about the requirements and benefits of HACCP certification. It contracted an international food safety company to conduct HACCP pre-assessment audits at seven factories

[118] The Mozacajú project included a range of measures that targeted producers and processors. This section focuses on the programme's activities for cashew processors.

[119] HACCP is an internationally recognised risk management tool for manufacturing firms. It requires firms to develop control measures and monitoring systems for critical control points in the manufacturing process.

and formed HACCP committees at each factory that included higher-ranking factory employees. These committees were responsible for implementing and maintaining the HACCP system at the factory. Mozacajú also conducted workshops on HACCP requirements with the committees and trainings for workers, e.g. related to phytosanitary procedures. Mozacajú and the international food safety company developed materials for the factory committees, such as registration sheets for tracking the movement of product and people and verification sheets for cleaning, maintenance and sanitisation. Finally, Mozacajú technicians made monitoring visits to check factories' HACCP compliance (TechnoServe 2017, 17). TechnoServe also covered some of the costs of installing HACCP at the factories. For instance, it paid for Condor's HACCP audit and certificate while Condor paid for changes that had to be made at the factory (interview with Condor Cajú/Manager, 20 March 2018, Nampula).

Mozacajú also supported five processing factories in installing batch processing systems. The aim of batch processing is to ensure that cashews from one location stay together throughout the various processing stages. Mozacajú staff conducted traceability audits that identified obstacles to traceability, e.g. a lack of physical product segregation and labelling product by origin, and trained senior management members and factory supervisors, as well as factory workers on the requirements of batch processing. Mozacajú supported processors to adapt their factories and conducted monitoring visits once they had installed batch processing (TechnoServe 2017, 14–15).

Next to establishing contacts with international buyers and supporting the implementation of food safety management systems at Mozambican factories, TechnoServe organised two trips to Côte d'Ivoire in 2016 and 2017 for actors involved in the cashew sector. The first delegation targeted high-ranking government and industry representatives, including the director of INCAJU and owners of cashew processing firms. The second delegation targeted middle management industry and government representatives. The trips aimed to inform the delegations about the cashew industrial policy framework in Côte d'Ivoire, particularly related to boosting production, the cashew marketing system, as well as the implementation of the RCN export tax in Côte d'Ivoire. The delegations also visited highly mechanised state-of-the-art processing factories. According to the programme director of Mozacajú, the trip to Côte

d'Ivoire in 2016 initiated a reform process of the 1999 Mozambican cashew law in Mozambique (interview with TechnoServe/Programme Director, 12 March 2018, Pemba).[120]

Finally, TechnoServe subsidised the learning costs of cashew processors in Mozambique through grants with a cost-share requirement to ensure the grantees' commitment. These grants provided funding for new processing equipment and technologies for the companies Condor and Olam and for factory supplies and purchasing RCN for the small-scale processor Emaju (TechnoServe 2017, 18–22).

Investing in technological capabilities is a risky, long-term investment that requires time and resources. Cashew processing is a high-volumes, low-margins type of business. Cashew processors in Mozambique are therefore only willing (and able) to lower the capacity utilisation, e.g. while installing food safety management systems, if this increases sales or prices – particularly in times of high demand during which it is easy to find buyers and compliance with international food safety standards is not (yet) mandatory. Upgrading in GVCs goes beyond investments and activities by suppliers in low-income countries. It often requires coordination with other value chain actors, e.g. international buyers that pay higher prices for certified product, or service providers, e.g. firms that conduct audits and trainings at supplier firms (Pietrobelli and Staritz 2018, 559). By providing grants, tacit knowledge and contacts to international buyers from demanding end markets, TechnoServe subsidised the costs and decreased the risks of learning for some cashew processors in Mozambique.

The following section focuses on competitors as a learning channel for Mozambican processors.

Competitors as a Source of Learning

Competitors are a source of learning for some cashew processors in Mozambique. Cashew processors in Mozambique know each other and meet regularly at meetings of the Cashew Committee. Knowledge transfers between cashew processors in Mozambique take on the form of advice on processing machines and visits of competitors' factories. For instance, the owner of IndoAfrica sought advice from Olam on which fumigation machine to buy. The owner of

[120] As discussed in Chapter 5, a reform of the 1999 cashew law was adopted in 2018.

Emaju increased her knowledge on the organisation of production processes and processing machines through visits of other factories.

Generally, foreign-owned cashew processing firms in Mozambique are not more technologically advanced than locally-owned firms. In fact, the level of mechanisation of some foreign-owned firms, e.g. Chinese-owned Sunny or Indian-owned Mocaju, is lower than of the local firms Condor and Caju Ilha. The following section summarises the learning channels used by Mozambican cashew processors.

Summary of Learning Channels

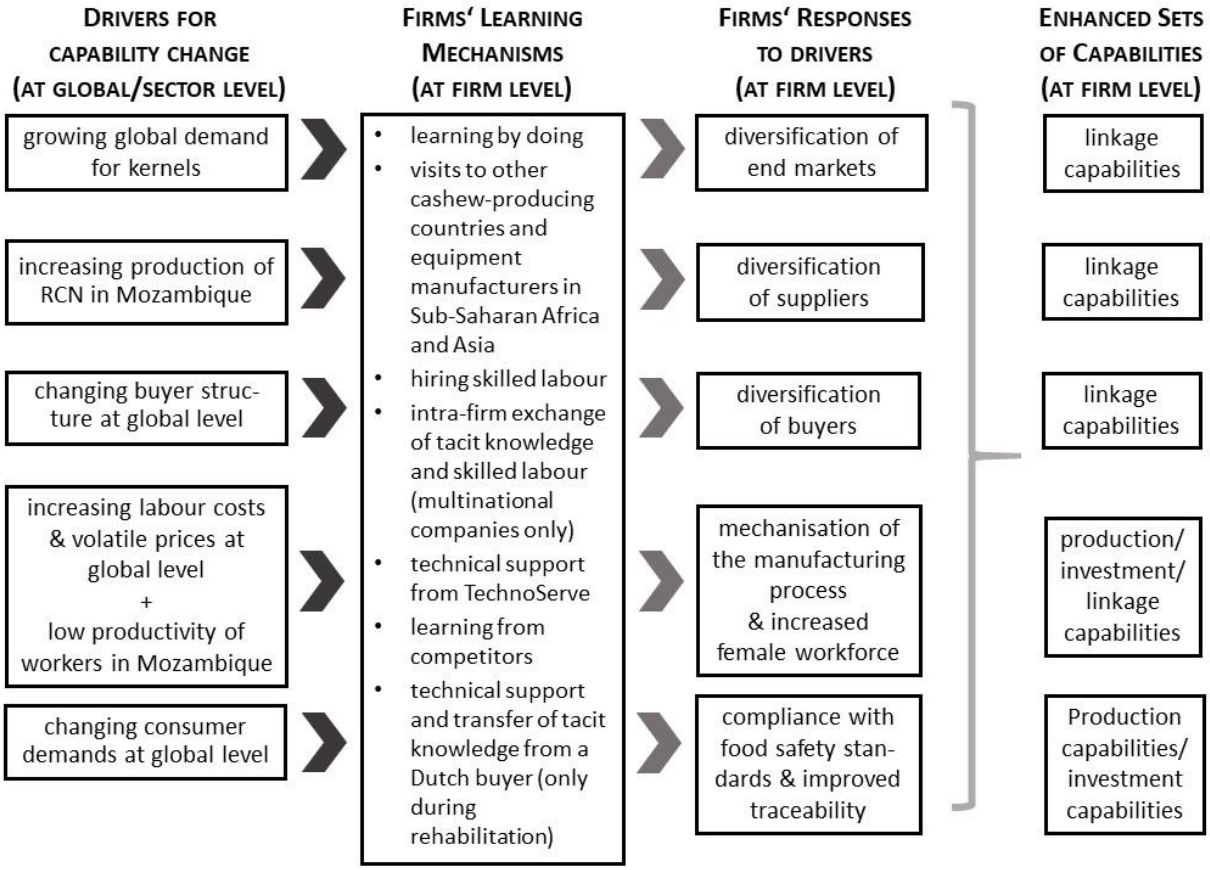
During the revival of the cashew industry in Mozambique three learning channels played a particularly important role. First, TechnoServe initiated the revival of the industry at the beginning of the 2000s through a comprehensive support programme. Second, a kernel buyer from the Netherlands (Global Trading and Agency - GTA) was actively involved in rehabilitating the cashew industry and held shares in the cashew firm that opened the first processing factory in Mozambique after the industry breakdown. Third, hiring skilled labour from other processing factories was an important learning channel during this phase. Whenever a new factory opened its gates, workers from an already running factory trained workers at the new factory.

In 2019, cashew processors in Mozambique primarily used channels of learning at firm level, such as learning by doing, hiring skilled labour or visiting processors in other countries. Some firms also increased their capabilities by learning from competitors. Multinational cashew processors exchanged technical know-how and skilled labour within the firm to promote learning. TechnoServe remains an important source of learning for Mozambican cashew processors. GTA still buys cashew kernels from Mozambique but no longer provides technical assistance to Mozambican cashew processors.

International buyers as well as AICAJU and INCAJU are a source of information for processors in Mozambique but not a source of technical assistance. AICAJU's personnel and financial resources are extremely limited and the association's staff members are not able to provide technical know-how, e.g. related to international standards or processing technologies. The type of assistance provided by INCAJU and by international buyers is discussed in more detail in sections two and three of this chapter.

Figure 9.1 provides an overview of factors that drive capability building and upgrading among Mozambican cashew processors, learning mechanisms that processors used and the TCs that (some) firms increased. It draws on the operationalisation of upgrading developed in the theoretical framework of the thesis.

Figure 9.1. Drivers and Channels of Capability Change in the Mozambican Cashew Industry



Source: the author

Cashew processing was not new to Mozambique when the industry was revived but TechnoServe promoted a new processing technique from India that had not been used in Mozambique before. Cashew processors therefore had to acquire some technological capabilities from abroad in the initial phase. However, there is no evidence for a shift from foreign to domestic sources of learning among Mozambican cashew processors, e.g. as witnessed by Gebreeyesus and Sonobe (2012) in the case of the Ethiopian flower industry. An effective innovation system that is able to provide inputs, such as skilled personnel or

processing equipment, and functions as a source of technical knowledge for cashew processors has not emerged in Mozambique.

The following section explores why industrial policies, i.e. the 1999 cashew law, and the National Cashew Institute INCAJU did not contribute to enhancing processors' TCs.

9.2 The Cashew Law's Failure to Promote Firm-Level Learning

This section focuses on the 1999 cashew law as a channel for enhancing cashew processors' capabilities. It particularly centres on the role of the National Cashew Institute INCAJU as a source of sector-specific information and technical assistance. In the literature, national institutions that implement industrial policies have been promoted as a potential source of learning if they have the capabilities, power, and resources to enforce learning among local firms (Khan 2000, 47–48; Whitfield et al. 2015, 18–22).

The first part of the section takes a closer look at the aims of the cashew law as well as the objectives and powers of INCAJU with regards to promoting technological learning among cashew processors. It then discusses two important factors that constrain the effectiveness of the cashew law and INCAJU in promoting learning among cashew processors related to the design and the implementation of the law. The third part of the section centres on the intended and unintended effects of the cashew legislation in Mozambique and discusses how they affect upgrading within the local cashew value chain. Based on the findings of the previous sub-sections, the final part of the section centres on the three conditions for successful industrial policy enforcement brought forward by the political settlements framework.

Aims of the Cashew Law

The 1999 cashew law aimed to promote value-added activities in the cashew sector by facilitating the revival of the cashew processing industry and by providing incentives for creating industries that use cashew by-products. To this end, it established a 18-22% tax on RCN exports for a period of at least five years, as well as a right of first refusal and a guarantee fund for cashew processors. Later, a temporary RCN export ban supplemented these measures. Decree 43/97 (Organic Statute of the National Cashew Institute) mentions promoting the

cashew processing industry as one of the Institute's core objectives. According to Article 4(e) of the Statute, it is among INCAJU's tasks to promote new processing technologies. The recently adopted Decree 30/2017 and Decree 78/2018 broaden INCAJU's scope of activities and explicitly mention that it is within INCAJU's competencies to implement research activities and technology transfer related to the production, trading and processing of cashews and other types of nuts (Article 6(c) of Decree 30/2017; Article 5(c) of Decree 78/2018).

On paper, the cashew law aims to promote technological capability building among cashew processing firms in Mozambique by protecting the industry and by giving INCAJU the mandate to transfer knowledge to cashew processors. The following section discusses why the law does not drive technological capability building among firms.

Deficiencies of the Cashew Law and the National Cashew Institute

Two factors constrain the potential of the cashew law and INCAJU to promote capability building among cashew processors. The first factor is related to the design of the law. The tax on RCN exports, the right of first refusal for cashew processors and the temporary export ban can be considered as learning rents according to Khan's (2000) typology of rents, i.e. policy-induced conditional subsidies. These subsidies originally aimed to protect the processing industry while it re-established itself and restored international competitiveness.

However, the law only established that the tax should stay in place for a minimum of five years and should be re-examined after this period. The timeframe for the temporary export ban and the right of first refusal is not defined at all. The tax as well as the other measures to protect the cashew industry have been in place for more than 20 years and there is currently no plan to abolish them. In short, the subsidies for cashew processors that the cashew law established were and are not conditional on the achievement of learning during a limited timeframe.

The second factor that hampers the implementation of the cashew law with regards to increasing firms' capabilities is related to the capabilities of INCAJU. Defining the optimal period for protection and enforcing it requires high-skilled state bureaucrats. Bureaucrats at INCAJU also need to know the pace of learning they expect from cashew processors and the level of capabilities that processors need to compete globally. To establish credible conditionality, state bureaucrats have to be able to reduce or abolish rents, for example the RCN export tax, if the

performance of processors is not living up to the expectations. At the same time, the effective enforcement of the cashew law's objectives and INCAJU's tasks related to promoting the cashew industry requires industry-specific technical knowledge and experience.

The data collected through expert interviews and firm surveys shows that INCAJU functions as a source of information on developments in the cashew sector within Mozambique and provides a platform for the exchange of information among actors involved in the cashew sector by organising the meetings of the cashew committee. However, it lacks the skills to enforce learning among processors and the power and willingness to reduce or abolish the export tax although the processing industry is not internationally competitive after more than 20 years of protection (see discussion below).

Notably, INCAJU lacks the ability to collect reliable data on production, trading and processing as well as its own activities. For instance, it remains unclear how many of the seedlings INCAJU distributes to farmers actually survive and how much those that survive produce. The institute is not able to monitor the implementation of its activities and measure their impacts.[121] The collection and publication of data on the cashew sector by INCAJU seems to be driven by the political pressure to report that the sector is growing according to plan (Correia 2019). Whether it is actually increasing at the pace INCAJU's data suggest remains questionable.

Several interview partners criticised that there is a disconnect between the needs of the cashew industry and INCAJU's activities towards cashew processors. The Institute's employees have no practical experience in cashew processing. Hence, employees at INCAJU do not have the technical knowledge to support capability building among processors and an insufficient understanding of the processing business.[122] Civil servants working at INCAJU are not affected if the cashew processing declines. In fact, a decline of the industry increases RCN exports and the revenues generated through the RCN export tax which is partly used to finance INCAJU.

The lack of a credible conditionality attached to the subsidies towards the cashew sector and INCAJU's lack of industry-specific technical knowledge as well as the power and willingness to enforce laws that should stipulate learning among processors hampers the implementation of

[121] See interviews with SINTIC/General Secretary (2018, Maputo); Ministry of Agriculture and Food Security/Advisor to the Minister (2018, Maputo); Global Trading & Agency/CEO (2018, Sliedrecht); TechnoServe/former Programme Director (2018, Maputo).

[122] See interviews with Global Trading & Agency/CEO (2018, Sliedrecht); Fundaçao Chissano/Executive Director (2018, Maputo); ETG Korosho/General Director (2018,Maputo).

the cashew law. The following section discusses important effects of the cashew legislation and how they affect upgrading among Mozambican producers and processors.

Effects of the Cashew Law on Upgrading

The cashew law had some – intended and unintended – effects that limit the opportunities and pressure to build capabilities of Mozambican cashew producers and processors. This section discusses three important effects of the law: 1) reduced producer prices; 2) an increase in local and foreign investments in cashew processing with varying commitment to upgrading; and 3) the emergence of opportunities for formal and informal rent creation.

Reduced Producer Prices

As explained in Chapter 7, the RCN export tax reduces producer prices in Mozambique to below international market prices. This should make processing of cashew nuts more attractive. Nonetheless, low prices and a lack of quality control at the farm gate discourage investments and learning by producers. As a result, the availability of high quality nuts is limited (Costa 2019, 55). Setting up a factory with a low level of mechanisation is relatively cheap. Due to the export tax it currently seems to be possible to make money with cashew processing without investing in state-of-the-art processing technology and despite some challenges in Mozambique that increase costs, e.g. related to infrastructure and corruption.

The possibility to purchase RCN below international market prices compensates for existing inefficiencies in the processing industry, reduces the pressure to invest in new processing technologies and to build capabilities to achieve actual global competitiveness – and thereby reduce the dependency on state protection (see Figure 9.2 underneath). The cashew processing industry in Mozambique only manages to compete globally because of the RCN export tax. Most industry actors and sector experts that were interviewed for this thesis agreed that the processing industry would disappear again if the tax was abolished.

Figure 9.2. Effects of the RCN Export Tax on Upgrading at Industry Level in Mozambique

Source: the author.

This said, it is important to emphasise that the level of competitiveness and the commitment to invest in capability building varies between processing firms. As discussed in Chapter 8, some processing factories still use the manual technology that was introduced when the sector was revived in the early 2000s. Others have invested heavily in the mechanisation of some of the processing stages, notably the de-shelling of cashew nuts. The following section explores the reasons for why investments in the cashew processing sector in Mozambique have increased and why the commitment to invest in TCs varies among processors.

Increased Investments in Cashew Processing

The incentives created by the cashew law attracted local and foreign investments in cashew processing. Among the firms that invested in processing during the rehabilitation of the sector and more recently are many traders of RCN from Mozambique (with Indian roots), from India, from China and multinational companies (Caju Ilha, Indo Africa, Mocaju, Sunny, CN Caju Olam and ETG Korosho). The tax makes processing profitable and many traders see processing as a strategy to diversify the risks of their businesses and to evade the export tax. They have the business knowledge and experience in exporting raw commodities and enough technical knowledge to run a (basic) processing factory. This gives them an alternative to processing that cashew processors that do not export RCN do not have. As processors and traders, they have the option to export directly or process, depending on the prices for RCN and kernels. In addition, by setting up factories these firms can access more RCN.

From a structural transformation perspective, it is a positive development that raw commodity traders became involved in in-country processing. Instead of exporting value-added and jobs to Asia, RCN traders contributed to increasing in-country processing and formal employment.

However, it seems that exporting raw commodities remains their core business and their potential to drive innovation and capability building in the processing industry is limited.

A look at the levels of competitiveness of these firms with respect to the levels of mechanisation of the production process and installing food safety management systems confirms this impression. Caju Ilha has invested in mechanisation but is not complying with international food safety standards, Mocaju complies with HACCP and ISO22000 but has not mechanised the production process and IndoAfrica's factory remains closed most of the year and the company hardly exports cashew kernels at all. Sunny has opened a basic processing factory that does not use state-of-the-art (mechanised) processing technology. To justify the choice of processing technology used at the newly opened factory, a representative from Sunny mentioned that the Mozambican Government does not like mechanisation because it wants the factories to hire many workers (interview with CA Company/Sunny/Administrator, 3 April 2018, Maputo). CN Caju only implements the first processing step (deshelling) in Mozambique, i.e. it exports most of the value added to China while evading the export tax.

In fact, the only companies that have reached a level of competitiveness above the Sub-Saharan Africa average with respect to the levels of mechanisation of the production process and installing food safety management systems are Condor, ETG Korosho and Olam.

In short, the cashew industry attracts an increasing number of local and notably foreign investors, however the number of firms that drive innovation and actually invest in building capabilities is small. The following sub-section discusses how opportunities for rent creation for members of the ruling elite and lower level FRELIMO members indirectly affect the enforcement of learning rents among cashew processors in Mozambique.

Opportunities for Formal and Informal Rent Creation for Members of the Ruling Elite

The cashew policy framework creates opportunities for formal and informal rent creation for members of the political elite and lower level FRELIMO officials. On the one hand, the 18% surtax on RCN export adds to the government revenues. According to data from Mozambican Customs and the Mozambican Tax Authority (2018), revenues from the tax amounted to approximately US$18-19 million in 2017 alone.[123]

[123] Data from other years is not available.

The tax is currently channelled through the Ministry of Finance and there are no official statistics available on how the tax is used, e.g. how much money is used for the guarantee fund for cashew processors, and how much to finance INCAJU and research activities. Furthermore, no data is available on how much the spraying programme and the production and distribution of seedlings costs. This means that the tax provides a relatively large discretional pool of money that can be channelled to other public institutions or be used to finance the FRELIMO party or members of the ruling elites. According to two interviewees, the money generated through the tax has previously been used to finance elections for FRELIMO or ended up in the pockets of individual politicians (interview with Cashew Yetu/Owner & General Manager, 20 February 2018, Maputo; interview with Independent Consultant, 6 March 2018, Maputo).

On the other hand, the new policy framework created a range of opportunities for informal rent creation. This section focuses on three prominent examples: instances of corruption at Nacala port as a source of income for lower-level FRELIMO officials, the provision of chemicals for INCAJU's spraying programme as an opportunity to create rents, and the distribution of seedlings as a means to build political support among farmers.

Instances of corruption at the Port of Nacala have been facilitated by the de facto export ban on RCN between October and December – when world market prices for RCN are highest. The Mozambican Customs Authority has recorded several instances of fraud at the ports where exporters declared containers full of RCN as beans or cashew kernels to circumvent the 18% export surtax (Further Africa 2016; interview with INCAJU/Employee, 27 February 2018, Maputo; interview with TechnoServe/Programme Director, 12 March 2018, Pemba). While the extent of fraud at the ports remains unclear, bribes paid to lower level customs officials seem to be a widespread and largely tolerated phenomenon.

The Nacala Special Export Terminal (TEEN) located at the port of Nacala is a prominent case of how members of the political elite and lower level officials create opportunities to skim-off rents. Former Minister of Finance Manuel Chang authorised the construction of the special export terminal at the beginning of 2010 to reduce congestion at the international terminal at Nacala Port. The concession to operate the new terminal was granted to the company NCL & África, Import and Export Lda in which Manuel Chang holds shares (interview with

Emaju/Director, 16 March 2018, Nampula). According to a report commissioned by CTA[124], the concession procedure for the new export terminal did not comply with the law (Norberto 2014; Sal & Caldeira Advogados, Lda and MB Consulting 2014).[125] The new terminal started operating in April 2011 as an additional, independent and privately operated terminal, 10 kilometres outside the Port of Nacala. A couple of months later, a ministerial decree established that all export containers, including raw and processed cashew nuts, had to pass through the new terminal from January 2012 onwards and pay a fee of 7.000 Meticais regardless of the duration of stay and usage of the facilities for cargo loading and storage (Correia 2015, 25; Sal & Caldeira Advogados, Lda and MB Consulting 2014, 6).

All containers were stopped at TEEN and had to get unloaded at the special dock. Customs officials verified the content of the container loads which were then loaded back on a truck. For cashew processors this meant an additional check because containers were verified at another stage of the export process. The process of un- and reloading created non-value-added costs, bureaucracy and additional logistical efforts and caused delays that companies were not able and willing to take on (Correia 2015, 25). The procedure created strong incentives to pay bribes in order to circumvent exports through the special terminal (interview with TechnoServe/Programme Director, 12 March 2018, Pemba). The special export terminal was an opportunity for rent creation for customs officials through bribes and for the former Minister of Finance Manuel Chang.[126] After heavy criticism on behalf of economic actors, in particular the Confederation of Economic Associations of Mozambique (CTA), the Government took back the requirement to use the special export terminal in 2017 (CTA 2017).

A second prominent example is INCAJU's spraying programme that created an opportunity for informal rent creation for a member of the political elite. According to data provided by INCAJU (2018), the institute's spraying programme covered between five and six million trees owned by almost 100.000 beneficiaries in 2017. To implement the spraying programme INCAJU

[124] The report received financial support by the SPEED programme, funded by USAID and was prepared by the two consulting firms Sal & Caldeira Avogados, Lda and MB Consulting.

[125] The report claims that it is not possible to get access to the call for tenders for the concession for the special export terminal. This creates evidence that no open call for tenders has been published and that the Government awarded the concession for TEEN directly to NCL & Africa Sal & Caldeira Advogados, Lda and MB Consulting (2014, 11–12).

[126] Manuel Chang was also one of the signatures of government guarantees for over US$2.2 billion US$ worth of secret loans in 2013 and 2014. He was arrested in Johannesburg on 27 December 2018 on an international arrest warrant from the USA and was charged with wire and securities fraud and money laundering (Carta de Moçambique 2018; Club of Mozambique 2016a).

distributes chemicals to almost 4.000 service providers who spray farmers' trees. INCAJU buys all chemicals to spray cashew trees from a company called Agrifocus that imports chemicals from abroad.[127] INCAJU has a government contract with Agrifocus on the supply of chemicals for spraying cashew trees. A former minister of agriculture held a 25% share in Agrifocus when the company was established. For Agrifocus and INCAJU the deal was sweet. Agrifocus became the sole supplier of chemicals to INCAJU. In turn, INCAJU officials received commissions from Agrifocus (interview with TechnoServe/former Programme Director, 21 February 2018, Maputo). A side effect of this system is that it destroyed the demand for chemicals among farmers because many now expect to receive chemicals for free. Due to the massive Government involvement in the distribution of chemicals, no other chemical providers became involved in the cashew sector. This further strengthened the monopoly position of Agrifocus (interview with TechnoServe/Programme Director, 12 March 2018, Pemba).

Lastly, according to Krause and Kaufmann (2011, 46) INCAJU has tried to use the distribution of seedlings to mobilise political support for the FRELIMO party. INCAJU handed out seedlings to farmers before elections, disregarding whether it was the right time of the year to plant cashew trees or whether farmers had the capacity to plant and take care of seedlings. For logistic reasons, the rainy season during which farmers should plant seedlings and elections do not coincide.

In sum, the cashew law not only created a system from which different economic actors benefit, it also adds to the Government's revenues by providing discretional funds and enables rent creation for members and factions of the ruling elite. When the law was adopted in 1999, it established the export tax to promote the cashew processing industry and as a means to finance INCAJU and its activities. Informal opportunities for rent creation emerged later on but were not a driving factor for adopting the law. Since the adoption of the cashew law, formal and informal opportunities for rent creation have become a reason for continuing with the law despite its deficiencies and for blocking far-reaching reforms of the sector which would be necessary to develop the sector and to enforce learning rents. Continued protection of the cashew industry in turn reduces the need to become as efficient as cashew processors in cashew-processing countries with lower levels of protection or without protectionist policies.

[127] Agrifocus also supplies other agricultural sectors, e.g. the cotton sector.

In the light of the secret debt crisis, it is very unlikely that the Mozambican Government will eliminate opportunities for rent creation for the ruling elites created by the cashew law. In April 2016, it was revealed that Credit Suisse and VTB Capital had lent US$2.2 billion to three state owned companies in Mozambique. The loans were guaranteed by the Mozambican Government without informing the International Monetary Fund (IMF) or donors.[128] They had neither been publicly disclosed nor had they been approved by the Mozambican Parliament as required by Mozambican law. As a response to the secret debt, the IMF suspended the disbursement of a loan to the Mozambican Government and donors stopped direct payments to the government budget. The crisis led to a drop in prices for some of Mozambique's major exports and in foreign direct investments (Fabricius 2016; Hanlon 2017, 765–66).

Based on the findings of the three previous sub-sections, the following sub-section assesses whether the three conditions for effective industrial policy enforcement are in place in the Mozambican cashew processing sector.

Summary: Limitations to Effective Industrial Policy Enforcement in the Cashew Sector

According to the political settlements theoretical framework discussed in Chapter 3 of the thesis, the effective enforcement of industrial policies depends on three conditions: 1) mutual interests between political elites and domestic entrepreneurs; 2) the existence of pockets of efficiency within the state bureaucracy; and 3) learning for productivity, i.e. entrepreneurs invest rents in building capabilities (Whitfield et al. 2015, 18–22). Assessing these three conditions helps to explain why the effectiveness of the cashew law, particularly with regards to enhancing the capabilities of cashew processors, has been limited.

A look at the first condition reveals that cashew processors and the Government mutually depend on each other. The cashew industry needs the support of the Mozambican Government to survive in business and to make profits despite inefficiencies and the Government wants to keep the RCN export tax as a source of revenue. RCN exporters can benefit from the current

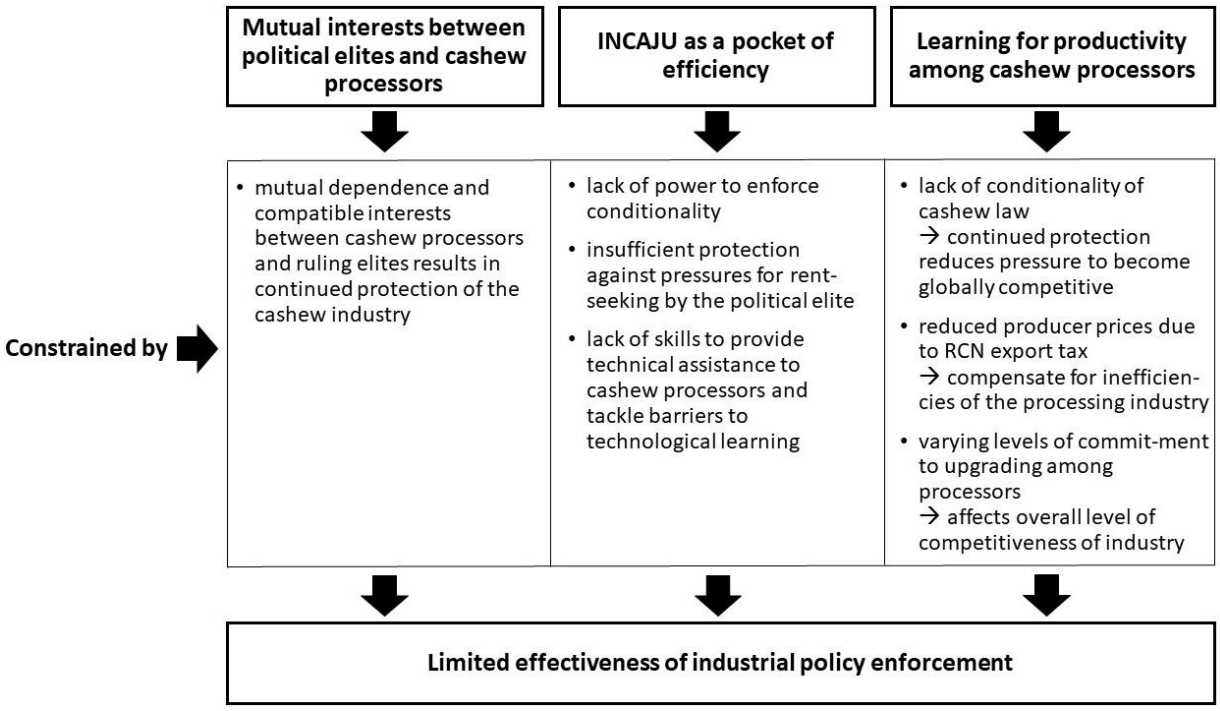
[128] The company Ematum for a tuna fleet and maritime security, the company Proindicus for maritime security, particularly for extracting offshore oil and gas and the company Mozambique Asset Management for repair and maintenance services in the maritime sector. The loans to the companies were linked to the purchase of airplanes, boats and communications equipment from France, Germany, Portugal, Turkey, China, India, Israel, Sweden, Austria, Romania and the U.S. They had been negotiated between 2011 and 2013 by former President Guebuza (Hanlon 2017, 765).

system by becoming processors themselves. Hence, the interests between the ruling elite and cashew processors are compatible, however, this seems to result in unlimited protection of the cashew industry through the RCN export tax. A policy-induced subsidy that is not conditional on the achievement of learning over a specific timeframe cannot be considered as a learning rent but is rather a means to finance the Mozambican Government and different factions that make up the ruling elite in charge of government.

Second, INCAJU supports the cashew sector, however it lacks the power and will to enforce learning rents and the skills to provide technical assistance to cashew processors and to tackle barriers to technological learning in the local cashew value chain. The fact that it remains unclear how the revenues generated through the RCN export tax are used indicates that INCAJU is not sufficiently protected against pressures for rent-seeking by the political elite. The analysis in this chapter therefore suggests that INCAJU cannot be considered a pocket of efficiency.

Finally, learning for productivity among cashew processors is constrained by the lack of conditionality of the cashew law which reduces the pressure on the industry to become globally competitive. Reduced producer prices – a side effect of the RCN export tax – compensate for existing inefficiencies in the processing industry. Varying levels of commitment to innovation and capability building of individual cashew processors further hamper the development of the sector. Figure 8.2 provides an overview of the factors that constrain the three conditions for effective industrial policy enforcement in the cashew sector.

Figure 9.3. Limited Effectiveness of Industrial Policy Enforcement in the Cashew Sector



Source: the author.

This section explored why the cashew law and the National Cashew Institute INCAJU as the main governing body of the cashew sector in Mozambique are not a learning channel for Mozambican cashew processors. The following section discusses why international buyers currently do not transfer knowledge to processors in Mozambique.

9.3 Limitations to Learning within the Global Cashew Value Chain

This section explores why international kernel buyers are currently not a source of knowledge transfer for cashew processors in Mozambique. As discussed above, the Dutch kernel broker GTA was an important learning channel during the phase of rehabilitation (2002-2009). In 2019, there were no international buyers that provided technical assistance to cashew processors in Mozambique.

As discussed in the theoretical framework of this study, international buyers are only likely to support local firms if it matches their strategic interest and does not threaten their core competencies (Pietrobelli and Staritz 2018, 558). They have a strong interest in outsourcing activities where there is high competition among suppliers, such as primary processing, and to

perform high value-added activities (secondary processing) themselves. Hence, opportunities for functional upgrading for primary processors in Mozambique exist but are limited because international secondary processors seek to reduce competition by keeping primary processors in the Global South out of higher value-adding activities. However, secondary processing may be a viable option for primary processors in Mozambique if they target the local and regional markets (strategic diversification). In this case, they cannot draw on the resources and support of international firms but need to acquire the capabilities needed for secondary processing by their own means or with the help of public entities or donors.

Primary processors in Mozambique are also unlikely to receive technical assistance by their international buyers for product and process upgrading. Wholesalers/kernel importers are usually not involved in primary processing themselves and, hence, do not have the required knowledge related to production processes. Furthermore, their focus is on securing large volumes rather than quality-related margins. Wholesalers/importers that are involved in primary processing themselves (e.g. Olam and ETG Korosho in Mozambique) are unlikely to transfer knowledge related to markets and production techniques to their local competitors.

Secondary processors or wholesalers with processing facilities are a more promising source of knowledge transfer related to product and process upgrading because they are more likely to have the technical know-how on how to increase the efficiency of primary processors. However, a number of reasons reduce the chance that they will transfer knowledge to primary processors. First, the main determinant for GVC participation of primary processors is currently price and not compliance with international standards. The latter is a plus but it is not yet mandatory, in particular because global demand for cashew kernels is growing. Hence, buyers' focus is currently on securing large volumes of cashew kernels. Compliance with standards related to product quality and production processes is not the main criteria for buyers' purchasing decisions, in particular if they run out of stock.

Once the global demand for cashew kernels decreases or kernel production increases, compliance with standards will become an important determinant for GVC participation. However, even then international buyers are unlikely to invest in suppliers' capabilities because requirements related to product quality and production processes are codified in international standards, e.g. Hazard Analysis and Critical Control Points (HACCP), the African Cashew Alliance Quality and Sustainability Seal (ACA Seal), or the seal of the British Retail Consortium (BRC).

Buyers want to know whether suppliers are certified or not to reduce their own risk of non-compliance with food safety requirements vis-à-vis end consumers. This reduces the need to support primary processors to develop the capabilities that are needed to comply with standards. According to a Dutch kernel broker, *'[y]ou [the buyer] buy a quality insurance. You buy it. Tick the box.'* (interview with Global Trading & Agency/CEO, 21 September 2018, Sliedrecht).

Second, the level of concentration on the supplier side is low. There are many suppliers in the Global South that offer kernels of a similar quality and the number of processors that comply with international standards is increasing. Increasing consumer demands related to product safety are not a new trend and many primary processors have invested in certificates to prepare themselves for the future. This reduces switching costs for buyers – and their need to invest in suppliers' capabilities, in particular when the balance between supply and demand is less tight.

Third, as discussed in the theoretical chapter, some buyers assist primary processors to upgrade their capabilities to boost their reputation vis-à-vis international consumers. This is particularly important in sectors where reports that draw attention to poor working conditions in farms and factories in low-income countries or environmental damage have sparked an outcry by end consumers. Despite some reports on 'blood cashews' in Vietnam (Human Rights Watch 2011; Marshall 2011) and poor working conditions for Indian cashew processing workers (Actionaid n.d.), international consumers' awareness of the working conditions in the cashew sector is low compared to other agricultural sectors, such as the cut flower industry in East Africa (Riisgaard and Gibbon 2014).

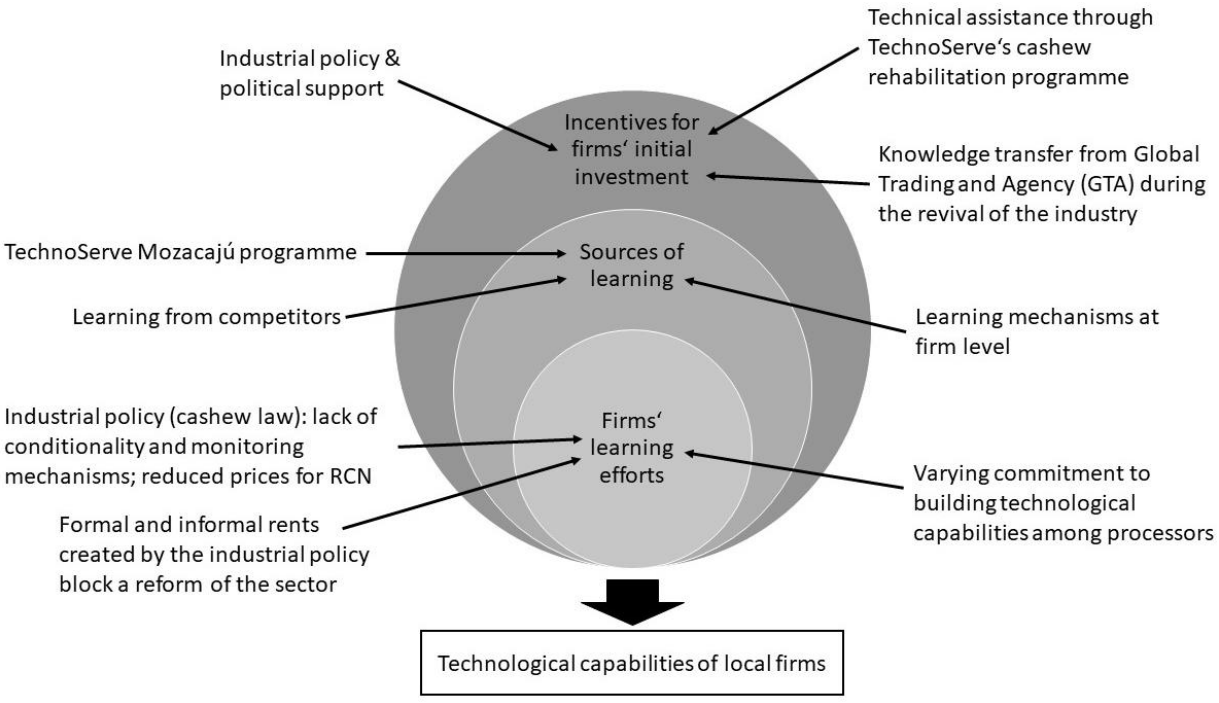
To sum up, international buyers are currently not a source of knowledge transfer for cashew processors in Mozambique. Switching costs for buyers are relatively low, international standards are not yet mandatory and pressure to invest in projects to promote social upgrading is limited. The role of buyers is therefore limited to providing information on the type and quality of products that consumers in global markets demand. Cashew processors in Mozambique therefore rely on their own efforts or support by actors outside the cashew value chain to build capabilities.

9.4 Conclusion

This chapter explored which learning channels cashew processors in Mozambique use(d) to acquire the technological capabilities needed to re-access the global cashew value chain and to remain competitive. Section one presented the learning mechanisms of Mozambican processors and classified them according to source, scope and time period. Section two discussed why the 1999 cashew law and the National Cashew Institute INCAJU were not a source of learning for processors. It further explored how the law affects upgrading among cashew producers and processors. Section three explained why international kernel buyers do not transfer knowledge to cashew processors in Mozambique.

This conclusion summarises the process of technological capability building among Mozambican cashew processors along three dimensions: 1) factors that incentivised firms' initial investment in the cashew sector; 2) sources of learning; and 3) factors that shape processors' learning efforts. Figure 9.4 illustrates how firm-internal and external factors shape(d) the process of technological capability building in Mozambique's cashew industry.

Figure 9.4. Three Dimensions of Technological Capability Building in Mozambique's Cashew Industry



Source: the author, inspired by Melese (2019, 143)

The protectionist industrial policy measures that were adopted by the cashew law in 1999 incentivised local and foreign investments in cashew processing. The favourable conditions for cashew processing motivated the U.S. non-profit organisation TechnoServe to set up a rehabilitation programme for the Mozambican cashew sector. The programme attracted a range of local entrepreneurs that invested in cashew processing with the support from TechnoServe. The Dutch kernel buyer GTA became involved in the Mozambican cashew sector through the TechnoServe programme and provided technical assistance that motivated further investments. As the exclusive buyer of cashew kernels under the *Zambique* brand, GTA played an important role in helping Mozambican cashew processors break into the global market.

Initially, the involvement of the Mozambican Government was low, however, this changed once ruling elites saw that cashew processing for export could be successful again in Mozambique. In 2005, then President Guebuza, officials of the U.S. government and representatives from TechnoServe unveiled the *Zambique* brand in Baltimore for its first export to the U.S. buyer Suntree (allAfrica 2005). This demonstration of political support for the cashew processing industry also incentivised firms to invest in cashew processing.

The capabilities and innovations that cashew processors in Mozambique acquired when the cashew industry was revived in the 2000s were new to the country and therefore had to come from abroad. However, in the past 15 to 20 years, no effective domestic system of innovation has emerged that is able to provide inputs, such as skilled personnel or processing equipment, and that functions as a source of technical knowledge for cashew processors.

The findings presented in this chapter reveal that cashew processors in Mozambique mainly use learning mechanisms at firm-level to build the capabilities that are needed to remain competitive in the global cashew value chain. Hence, the level of commitment of individual entrepreneurs or high-level firm managers of diversified businesses towards cashew processing and towards driving innovation and TC building is crucial. Some processors also rely on financial and technical assistance from donors, such as TechnoServe.

INCAJU and ACIAJU are a source of information for cashew processors in Mozambique but are not able to provide technical assistance to processors. INCAJU lacks the technical knowledge to provide assistance to processors and the ability to monitor its activities and collect industry-specific data. AICAJU's personnel and financial resources are limited and the association's staff members are not able to provide technical know-how to the association's members. In

addition, technical assistance and knowledge transfer from international buyers is unlikely in the cashew sector because switching costs for buyers are relatively low, international standards are not yet mandatory and pressure to invest in projects to promote social upgrading is limited.

Several factors shape the learning efforts of cashew processors in Mozambique. First, the protectionist measures of the cashew law, notably the RCN export tax, create a competitive advantage vis-à-vis cashew processors in other countries and compensate for existing inefficiencies at industry level. However, the policy is not geared to supporting capability building among cashew processors. There are no mechanisms in place that make subsidised support conditional on an increase of the industry's performance within a specific time frame. Hence, the cashew law not only fails to support capability building at firm level, it actually reduces the pressure on cashew processors to invest rents productively.

Second, the law creates opportunities for formal and informal rent creation for members of the political elite and lower level FRELIMO officials that block far-reaching reforms of the sector which would be necessary to develop the sector and to enforce learning rents. It seems that INCAJU is not sufficiently protected against pressures for rent seeking by the political elite to function as a pocket of efficiency.

Third, varying levels of commitment to driving innovation and capability building of cashew processors – depending on whether firms focus on processing only or engage in processing and RCN exports – hamper the development of the sector.

To conclude, the channels for building capabilities of cashew processors in Mozambique are limited. On top of this, they operate in difficult structural conditions that increase the costs of processing and decrease potential rents that processors could invest in learning. Local innovation systems are weak and the physical infrastructure in large parts of Mozambique is insufficient. Bad roads increase transport costs from farm to factory and from factory to port and power cuts increase production costs. In addition, firms struggle with high labour turnover and absenteeism rates and high levels of corruption. Given these constraints, it is somewhat remarkable that (some) cashew processors, notably the local cashew processor Condor, have achieved above Sub-Sahara African average levels of competitiveness, albeit with a high level of industry protection.

The next chapter summarises the main findings and arguments of the thesis and discusses key practical and theoretical implications.

10 Conclusion

This thesis addressed the challenge of building successful productive export sectors in manufacturing and agribusiness as a driver of structural transformation in low-income countries. Using the example of the Mozambican cashew processing industry, it explored how politics shape the promotion of export-driven industrialisation and upgrading in Sub-Saharan Africa. The thesis conducted an in-depth qualitative single case study of the Mozambican cashew processing industry in the period from 1991 to 2019. The thesis drew on theoretical approaches from the field of political science, particularly the political settlements (PS) framework (Behuria, Buur, and Gray 2017; Khan 2010; 2017; Whitfield et al. 2015; Whitfield and Therkildsen 2011), and on heterodox economic approaches, particularly the analysis of agricultural global value chains (GVCs) (e.g. Fold and Larsen 2011; Gibbon 2001a; 2001b; 2004; Humphrey and Memedovic 2006; Lee, Gereffi, and Beauvais 2012). It linked the PS approach and GVC analysis to explore how politics shaped the promotion of the Mozambican cashew processing industry and upgrading among cashew processors. The findings of the thesis are based on a broad base of primary data that was collected in Mozambique from February to April 2018, including 58 expert interviews and 10 surveys with local and foreign cashew processing firms in Mozambique. It further drew on extensive secondary literature, including policy-related documents and industry reports.

The thesis did not aim to make analytical generalisations. However, it transfers the case-specific results of the study of the Mozambican cashew industry to a higher conceptual level and thereby contributes to theory building. Moreover, the in-depth case study presented in this thesis contributes to knowledge accumulation and scientific progress in the fields of political science, development studies and economics (Flyvbjerg 2006, 227; Yin 2014, 40–44).

This thesis addressed three important research gaps in the political science literature, more particularly in the sub-field of political economy literature, and in the literature on upgrading in GVCs. First, so far, an attempt to link the two strands of literature in order to explain how governments in Sub-Sahara African countries affect the governance of agricultural GVCs at domestic level, as well as the upgrading paths of local value chain actors is missing. Second, research on how firms in Sub-Saharan Africa acquire technological capabilities to access agricultural GVCs and to upgrade is still in its infancy. More case studies are needed to tease out learning patterns of firms and to gain a better understanding of which learning mechanisms

work in which contexts and why. Third, there is a lack of studies that explore productive sector promotion and upgrading in the cashew sector in Sub-Saharan Africa in general, and in Mozambique in particular. Despite the high potential for cashew processing in Sub-Saharan Africa, the cashew sector has received little scientific attention.

By addressing these research gaps, the thesis adds to a recent strand of research on the politics of upgrading in GVCs (Alford and Phillips 2018; Behuria 2018; Horner 2017; Mayer and Phillips 2017; Swinnen 2015) that is promoted by researchers at the University of Manchester and to the research on learning channels of Sub-Sahara African firms in GVCs (Gebreeyesus and Sonobe 2012; Marchi, Giuliani, and Rabellotti 2018; Melese 2019; Staritz and Whitfield 2017; Whitfield 2012), spearheaded by the AFRICAP project at the University of Roskilde.

The thesis is structured along 10 chapters. Chapter 1 situated the research project in the broader debate on the politics of productive sector promotion and upgrading in Sub-Saharan Africa and gave a tour d'horizon of its structure and main findings. Chapters 2, 3 and 4 presented the literature review and the research gaps that the thesis addresses, its theoretical framework, and its methodology. Chapter 5 traced the evolution of the Mozambican cashew sector from the 1950s until 2019 and provided a current profile of the sector, including its industrial policy and institutional framework as well as current figures on the levels of production, processing, and export.

Chapters 6 to 9 formed the analytical core of the thesis. Chapter 6 centred on the governance of the cashew GVC and explored which capabilities cashew producers and processors in Mozambique require to break into the cashew value chain and to upgrade. The chapter also discussed potential upgrading opportunities and learning channels for Mozambican cashew producers and processors. Chapter 7 focused on the political economy of promoting the cashew sector in Mozambique in the period from 1991 to 2002. It explained why the Mozambican Government supported the cashew sector at the end of the 1990s and why it adopted a specific set of industrial policies. Chapter 8 traced how the technological capabilities (TCs) of cashew processors in Mozambique changed since 2002 and which types of upgrading this corresponds to. It further discussed the current level of competitiveness of the cashew industry. The chapter teased out which factors drove upgrading in the Mozambican cashew industry and which economic and social effects this had at firm level and at sector/country level. Chapter 9 presented the learning channels within and outside the cashew GVC that

Mozambican cashew processors used to build TCs and reflected on why industrial policies and international cashew kernel buyers did not drive capability building among cashew processors.

This conclusion summarises the main findings of the thesis, discusses their practical and theoretical implications and presents avenues for further research.

10.1 Summary of the Research Findings and Contributions of the Thesis

This section summarises the core findings of the thesis by discussing three questions. First, how did the politics of the Mozambican Government affect the emergence and evolution of the cashew industry, the governance of the local cashew value chain as well as the upgrading paths of cashew producers and processors in Mozambique? Second, how did Mozambican cashew processors acquire the TCs needed to access the global cashew value chain and to upgrade? Third, is the Mozambican cashew sector a successful productive export sector?

The Politics of Productive Sector Promotion and Upgrading

The theoretical framework of this thesis teased out three links between the politics of Sub-Sahara African governments shape and the emergence of productive sectors, the governance of local value chains, and firm-level upgrading. First, it argued that governments shape the emergence and the evolution of productive sectors by promoting specific sectors through industrial policies. Industrial policies can in- or decrease the power of specific actors in a local value chain, e.g. by establishing benefits for some actors in the value chain at the cost of others. This may affect the chain's governance structure.

Second, governments may allocate active roles to states in local value chains, e.g. as suppliers through government institutions, as producers through state-owned enterprises or as buyers through public procurement. By adopting active roles, states become part of the relational structure of local value chains and may have influence on the chain governance at specific nodes of the value chain. As value chain actors, states may also affect the creation of forward and backward linkages. States can make a purposeful choice at which node of a local value chain they become involved, e.g. depending on the potential opportunities for rent creation a specific role offers.

Third, states may facilitate capability building among local value chain actors in two ways. On the one hand, industrial policies – or more precisely the sector-specific institutions they establish – may transfer industry-specific knowledge to local firms and farms if they have the mandate to promote capability building. If industrial policies are enforced effectively, they make the provision of policy-induced subsidies for industry actors conditional on the achievement of learning among firms during a limited timeframe. On the other hand, if states become value chain actors themselves, e.g. as suppliers of agricultural inputs to farmers, they may transfer sector-specific knowledge to the value chain actors they interact with, e.g. farmers, or assist them with building capabilities.

Link 1: The Government Affected the Emergence of the Cashew Industry and its Governance

The Mozambican Government supported the cashew sector at the end of the 1990s because it became important for its political survival. Promoting the cashew sector was an electoral strategy for the ruling FRELIMO coalition and a means to keep FRELIMO factions united. In 1999, the Government adopted a cashew law that created strong incentives for cashew processing, notably an 18% tax on RCN exports. While the protectionist law did not prevent the breakdown of the processing industry in Mozambique, it incentivised the U.S. organisation TechnoServe to set up a programme to revive the Mozambican cashew industry at the beginning of the 2000s. This programme promoted technological capability building among locally-owned firms and supported them to break into the global cashew market. These firms included former cashew traders and entrepreneurs that had no previous experience in the cashew sector. Only one of the firms that received support during TechnoServe's programme survived and became Mozambique's most technologically advanced locally-owned cashew processor. The incentives that the cashew law created also motivated the multinational companies Olam and ETG Korosho to invest in cashew processing in the mid-2000s. Once the sector had consolidated itself towards the end of the 2000s, the cashew processing industry attracted several, predominantly foreign-owned investors due to the high level of industry protection.

The cashew law had effects on the distribution of power in the local cashew value chain. Those who benefited most from the 1999 reform of the cashew sector in the short-term were RCN exporters who were able to increase exports due to the breakdown of the processing industry.

However, by adopting the cashew law, the Mozambican Government demonstrated its political support for the cashew processing industry. This increased the power of cashew processors vis-à-vis RCN exporters in the mid-term.

Although 80% of the income generated by the RCN export tax is allocated to the support of small-scale producers of cashew nuts in rural areas, their benefits remain limited. On the one hand, this is due to implementation problems on the part of INCAJU. On the other hand, the weak position of cashew producers in the local value chain is due to a low level of organisation of cashew farmers compared to RCN exporters or processors. As a side effect of the 18% export tax, RCN exporters exert downward pressure on producer prices to compensate for the extra costs caused by the tax. Cashew producers in Mozambique therefore do not benefit as much from the global cashew price increase as they could. In contrast, cashew processors reap the benefits of reduced producer prices.

Link 2: The Government Became a Supplier of Agricultural Inputs to Cashew Producers

The cashew law foresees a range of supportive measures for cashew producers in Mozambique, including agricultural research, a large-scale spraying programme and the distribution of seedlings. INCAJU is therefore actively involved in the local cashew value chain as a supplier of agricultural inputs to cashew producers. INCAJU runs several tree nurseries and distributes seedlings to farmers. The institute also distributes chemicals to spray trees.

As a supplier of agricultural inputs, the Mozambican Government does not drive the local chain governance. However, the Government's massive involvement in the cashew value chain hampers the creation of backward linkages. By distributing chemicals and seedlings for free or at a low price, the Government destroys the willingness to pay for chemicals and seedlings among farmers because many expect to receive agricultural inputs without cost. This thwarts the emergence of private agricultural input suppliers in Mozambique and discourages efforts by RCN exporters and/or cashew processors to assist cashew growers in order to increase the quality and quantity of RCN while strengthening the monopoly position of the company Agrifocus. INCAJU buys all chemicals for its spraying programme from the company Agrifocus in which a former minister of agriculture held a 25% share. In return for becoming INCAJU's exclusive chemicals supplier Agrifocus transferred a commission to INCAJU.

The Government spraying programme only covers a small percentage of productive trees, even if the delivery of chemicals to farmers was free from corruption and side-selling. Cashew producers that are not covered by the public spraying programme are supposed to buy chemicals on the open market, however, due to the large Government footprint there is a lack of private companies that sell chemicals and seedlings.

Link 3: The Government Affects Capability Building among Cashew Producers and Processors

The cashew law and the INCAJU's involvement in the local cashew value chain as a supplier of agricultural inputs affected the efforts of cashew producers and processors to invest in building their technological capabilities.

The cashew law gives INCAJU the mandate to promote technological learning among cashew processors and producers, particularly it is among the institute's tasks to promote new processing technologies. As a supplier of agricultural inputs, INCAJU also became a potential source of knowledge transfer for cashew farmers. The analysis in this thesis revealed that INCAJU has neither been a source of learning for cashew producers nor for cashew processors. As a supplier, INCAJU provides chemicals and seedlings but does not combine this with a purposeful effort to transfer knowledge and/or to provide technical support to farmers. With regards to supporting capability building at industry level, INCAJU lacks the technical knowledge to provide assistance to processors and the ability to monitor its activities and collect industry-specific data. Most importantly, there are no mechanisms in place that make subsidies, such as the right of first refusal for cashew processors or the temporary RCN export ban, conditional on an increase of the industry's performance within a specific time frame.

The cashew law also has implications on the learning efforts of producers and processors. As discussed above, the 18% tax on RCN exports reduces producer prices in Mozambique to below international market prices. Low prices in combination with a lack of RCN quality control at the farm gate reduce the investment capabilities of farmers and discourage investments to improve production techniques. Moreover, due to a lack of private suppliers of seedlings or chemicals many farmers do not have access to agricultural inputs.

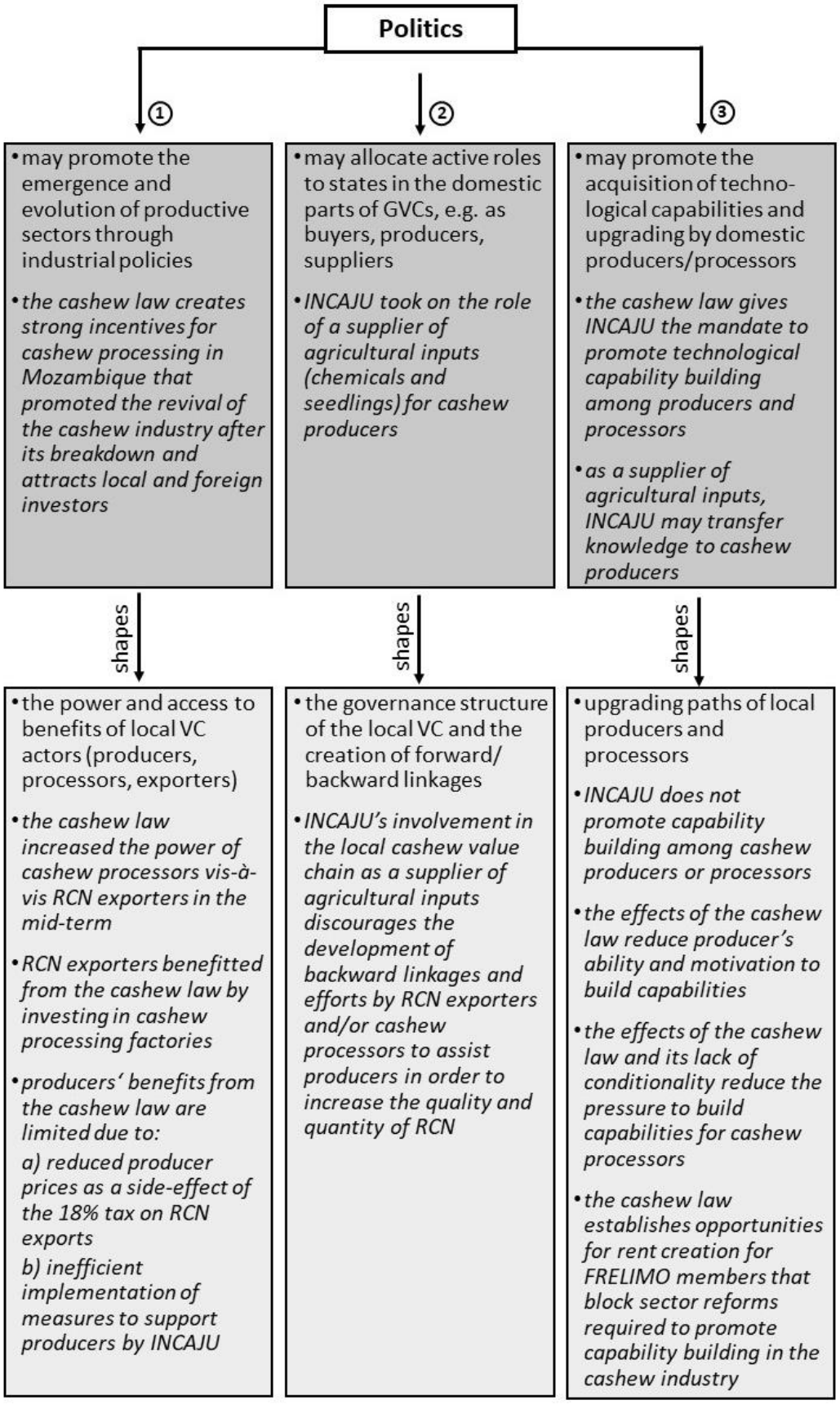
The protection of the cashew industry, particularly the possibility to purchase RCN below international market prices due to the RCN export tax, compensates for existing inefficiencies

at country and sector level, e.g. related to the quality of RCN in Mozambique, low labour productivity, infrastructure constraints and corruption. This reduces the need to invest in new processing technologies and to build capabilities to achieve actual global competitiveness. The lack of conditionality of the cashew law and INCAJU's inability to establish a credible conditionality to enforce capability building in the cashew industry, e.g. by gradually reducing or abolishing the RCN export tax, further reduces the pressure to upgrade among cashew processors. The high level of industry protection without conditionality has attracted an increasing number of local and notably foreign investors, however the number of cashew processors that are committed to driving innovation and capability building is small.

Finally, the cashew law created a range of formal and informal opportunities for rent creation for members of the political elite and lower level FRELIMO officials that indirectly affect the promotion of capability building among firms. On the one hand, the 18% surtax on RCN export adds to the government revenue. On the other hand, the temporary RCN export ban between October and December/January – when world market prices for RCN are highest – incentivises corruption at the ports. Bribes paid to lower level customs officials seem to be a widespread and largely tolerated phenomenon. In addition, the FRELIMO party has used the distribution of seedlings to mobilise political support in the run up to elections.

These opportunities for rent creation were not a primary reason for adopting the cashew law, however, they became a reason for continuing with the law despite its deficiencies. To maintain access to these rents, the Mozambican Government blocked a far-reaching reform of the sector in 2018 that would have been necessary to develop the sector and to enforce learning among cashew processors. Figure 10.1 summarises how the Mozambican politics shaped the power relations in the local cashew value chain and how it affected the upgrading paths of cashew producers and processors.

Figure 10.1. The Politics of Productive Sector Promotion and Upgrading in the Mozambican Cashew Industry



Source: the author

The three links discussed above suggest that the three conditions for the effective enforcement of industrial policies are not in place in the Mozambican cashew sector. First, the interests between the ruling elite and cashew processors are compatible, however, this seems to result in unlimited protection of the cashew industry. Second, due to the factors discussed above, INCAJU cannot be considered a pocket of efficiency. Finally, learning for productivity among cashew processors is constrained by the lack of conditionality of the cashew law. In short, the cashew law has been successful in terms of establishing incentives for cashew processing that spur(red) local and foreign investments and donor support. However, the law and the institutions it creates not only fails to support capability building among cashew processors in Mozambique, it actually reduces the pressure on cashew processors and producers to invest in building technological capabilities needed to upgrade and to increase global competitiveness.

The following section summarises which learning channels Mozambican cashew processors used to acquire technological capabilities.

Learning Channels of Mozambican Cashew Processors

This thesis argues that learning mechanisms at firm level, technical assistance from donors and to some extent learning from competitors are the most important learning channels for cashew processors in Mozambique.

Learning mechanisms at firm level include learning by doing, hiring skilled labour and visiting other cashew processing countries. Most factory owners and high-ranking employees had no previous experience in cashew processing when they opened their own cashew factory or were hired. While learning by doing is an important channel of learning for firms at the lower end of GVCs it is also a slow and costly way of learning and therefore needs to be combined with other sources of learning. Some processors travelled to other cashew-producing countries to visit cashew factories and manufacturers of processing equipment. Several cashew processing firms in Mozambique acquired new capabilities by hiring skilled labour, e.g. former employees of foreign organisations, factory managers with previous work experience in Mozambican cashew factories or expatriate workers from India. However, the number of people with experience in cashew processing in Mozambique is limited and hiring high-skilled labour is expensive. Multinational cashew processing firms that run cashew processing factories in other Sub-Sahara African countries also exchanged technical know-how and skilled labour within the firm.

Technical assistance by the U.S. organisation TechnoServe also played an important role in increasing the capabilities of some processing firms. TechnoServe was an important source of information, funding, and technical support when the cashew industry was revived. The organisation also promoted capability building among Mozambican processors between 2014 and 2017 by installing food safety management and quality control systems in three factories, by connecting processors with international kernel buyers who were currently not buying from processors in Mozambique, by organising two trips to Ivory Coast in 2016 and 2017 for public and private actors involved in the cashew sector and by subsidising the learning costs of cashew processors in Mozambique through grants.

When the Mozambican cashew industry was revived starting in 2002, cashew processors also received support by an international buyer. The Dutch kernel broker Global Trading & Agency (GTA) helped to set up several cashew processing businesses in Mozambique, visited factories regularly to do spot checks, provided technical assistance to processors and helped them to break into the global market.

The previous section explained why the cashew law and INCAJU did not promote capability building among Mozambican cashew processors. The thesis revealed that FDI and the cashew GVC were also not a source of learning for processors. The governance structure of the GVC for cashew kernels and the strategies of international kernel buyers discourage deliberate knowledge transfers between international kernel buyers and processors in Mozambique. Governance in the GVC for cashew kernels is currently market based. By participating in the cashew GVC, processors gain access to important information on GVC requirements, e.g. related to product and process standards, that the global market demands. However, international buyers do not support capability building among Mozambican processors due to low switching costs for buyers, buyers' efforts to minimise coordination costs, and a low pressure by consumers on international buyers to promote social upgrading. In addition, kernel buyers have no interest in promoting functional upgrading among their suppliers in the Global South because they want to keep primary processors out of higher value-adding activities. As compliance with international food safety standards gains importance it is likely that the GVC governance will move towards modular governance. This will promote knowledge spillovers and learning among Mozambican processors through the pressure to accomplish international standards.

Foreign-owned cashew processing firms in Mozambique are not more technologically advanced than locally-owned firms. When the cashew sector was revived, there were no foreign firms present from which local cashew processors could have learned. Today, most cashew processing factories are foreign-owned, however, the level of mechanisation of foreign-owned firms is lower than or equal to local firms. Foreign firms are therefore not a source of knowledge on state-of-the-art cashew processing for cashew processors in Mozambique. Neither is the business association ACIAJU due to a lack of personnel and financial resources and skills to provide technical know-how. So far, no industry-specific innovation system that could function as a national source of knowledge for cashew processors has developed.

The following section discusses whether the Mozambican cashew processing sector can be considered a successful productive export sector.

The Mozambican Cashew Processing Sector as a Success Story?

This thesis treated the Mozambican cashew sector as a deviant case (Gerring 2010), i.e. a case of a successful productive export sector, with the aim to tease out propositions about how politics shape the emergence of successful productive sectors in Sub-Saharan Africa and the upgrading-paths of local firms in GVCs. Compared to other agro-processing sectors in Sub-Saharan Africa, and more particularly in Mozambique, the cashew processing industry seems a success story. But does it produce positive externalities that drive structural transformation, e.g. by increasing the technological capabilities among locally-owned firms as well as the share of in-country value-added, generating foreign exchange, creating linkages, increasing the trained labour force and producing a positive societal impact?

With the revival of the Mozambican cashew sector at the beginning of the 2000s, several locally- and foreign-owned firms set up processing factories in Mozambique and managed to export cashew kernels to buyers in markets with high food safety standards, such as the U.S. and the EU markets, as well as to markets with less strict requirements in Asia. Overall, the processing capacity and the effective volume of cashew processing and kernel exports have increased, however at a slow pace and with considerable fluctuations. The compound annual growth rate (CAGR) of Mozambique's processing capacity was around 5% between 2007 and 2017 and the CAGR of effective processing was approximately 9%. The processing levels remain far below pre-independence processing levels but are likely to increase in the mid-term if

Mozambique manages to increase its level of RCN production. At the time of research, several foreign firms were planning to invest in cashew processing in Mozambique due to the incentives for cashew processing created by the cashew law and a growing global demand for cashew kernels.

The level of local ownership in the cashew industry is decreasing. When the cashew sector was revived in the mid-2000s, only two out of 26 cashew processing factories were foreign-owned. However, only one of the local companies that invested in cashew processing during that period managed to survive in business. Today, more than half of the processing units are foreign-owned and the share of local ownership is likely to decrease further as foreign investments increase. Although it is positive that the Mozambican cashew sector is attracting new investments, a high share of foreign investments also bears some risks. In case of external shocks, e.g. a natural disaster or a sudden policy change, foreign firms are likely to leave the country and invest in a country with more favourable conditions, taking with them industry-related tacit knowledge.

The technological capabilities of Mozambican cashew processors have increased in the past 15 years since the industry's revival. With the support of TechnoServe and a Dutch trading company, processors managed to re-enter the cashew GVC after the industry's breakdown. Firms enhanced their investment, production and linkage capabilities in order to remain competitive by adapting the technology used for processing, installing food safety management systems, diversifying their buyers, end markets and suppliers, and increasing linkages with other actors in the sector. As a by-product of these efforts, processors improved the working conditions and raised the share of female workers in the factories. This translated into end market, supply chain, product, process, and social upgrading.

Despite this overall positive balance, there are great differences between processing firms. The incentives for cashew processing in Mozambique attracted many traders of RCN. From a structural transformation perspective, it is a positive development that raw commodity traders became involved in in-country processing and create formal employment instead of exporting value-added and jobs to Asia. However, a look at the capabilities of firms that are involved in processing and RCN exports suggests that exporting raw commodities remains the core business of many traders and it is unlikely that they will drive innovations in the processing industry. In fact, technological capability increases, and upgrading are primarily driven by three

firms, one local firm (Condor) and two multinational firms (ETG Korosho and Olam). The level of competitiveness of these firms is above Sub-Saharan Africa average with respect to the levels of mechanisation of the production process and installing food safety management systems.

The cashew sector has a substantial potential for the creation of backward and forward linkages. However, neither type of linkages has developed in Mozambique. As discussed above, the creation of backward linkages is thwarted by the involvement of INCAJU as a supplier of agricultural inputs. Forward linkages are hampered by the power dynamics within the cashew GVC. Secondary processing in Mozambique for export to global markets is a challenge because powerful international secondary processors seek to reduce competition by keeping primary processors in the Global South out of higher value-adding activities in the chain. Secondary processing is only a viable option if firms target the local and regional markets. A small number of small-scale secondary processors exist in Mozambique, however secondary processing is still in its infancy. Mozambican manufacturers of cashew processing equipment and firms that provide maintenance services for processing machines do not yet exist.

Overall, Mozambican cashew processors are not as efficient as processors in other cashew-processing countries, e.g. Vietnam. The Mozambican cashew processing industry is only able to compete globally because it is strongly protected, in particular by an 18% surtax on RCN exports and a special deal with the Mozambican Government that allows processors to pay factory workers the agricultural minimum wage instead of the substantially higher industrial minimum wage. It is unlikely that processors in Mozambique would be able to compete globally and that (foreign) investments in the processing industry would continue if the export tax was lifted or processors had to pay factory workers higher wages.

From a societal perspective, the cashew sector is of high relevance. Compared to other Sub-Sahara African countries, Mozambique's processing ratio is high (around 60%), making the cashew industry a considerable source of formal employment for low-skilled workers in rural areas, in particular for women. Up to 17.000 workers are employed at the factories and approximately 150.000 people benefit from the salaries paid by the processing industry. In addition to creating direct employment opportunities at the factories, the cashew processing industry provides an income for cashew producers. More than one million households are involved in cashew production in Mozambique and the marketing of RCN can be considered a

part of the rural welfare system. Next to providing income, the cashew processing industry plays a role in building an industrial workforce in Mozambique.

A number of drawbacks curb this positive balance. First, increasing mechanisation will reduce the number of low-skilled workers and increase the number of high-skilled workers required in the cashew industry in Mozambique in the mid- to long-term. At the same time, the demand for RCN is likely to increase because the processing capacity of fully mechanised factories is much higher. If RCN production in Mozambique increases as a response to a greater demand and high world market prices, this would create a shift in employment opportunities. While formal employment opportunities at the factories decrease, predominantly informal employment on farms or plantations increases. Second, workers at the processing factories do not receive the industrial minimum wage as discussed above. Instead, they receive the agricultural minimum wage (US$68 per month in 2018) if they come to work regularly and fulfil their minimum daily targets. The agricultural minimum wage is the lowest national wage category in Mozambique. Finally, profits and upgrading opportunities in the local value chain are not spread evenly among chain actors. The cashew processing industry is able to compete globally due to relatively low RCN prices in Mozambique. To some extent, cashew producers bear the costs for the inefficiencies of the cashew industry. In addition, the upgrading opportunities for farmers are significantly lower than for cashew processors.

To conclude, Mozambique has a strong cashew processing sector compared to other Sub-Sahara African countries in terms of percentage of RCN processed. The country's cashew processing sector produces positive externalities that are conducive to driving structural transformation in Mozambique. However, it is important to take this positive balance with a grain of salt. Many big challenges of the cashew processing industry – most importantly related to increasing the volume and quality of RCN, but also related to improving infrastructure and access to inputs, enhancing labour productivity, improving working conditions, or decreasing corruption – have not been tackled. At this point in time, the industry is only able to compete globally because it is heavily protected. These challenges as well as the general risk of natural disasters and ongoing discussions about a policy reform to reduce or abolish the export tax (pushed by representatives of USAID in Mozambique) make cashew processing a risky business in Mozambique.

Contributions of the Thesis

This thesis took up the calls by Vicol et al. (2018) and Behuria (2018) to bring politics into the study of upgrading and to broaden the analytical focus of GVC analysis in order to include domestic political settlements and state-business relations, next to the study of firms. It made an important theoretical contribution by establishing a link between the political settlements framework and the literature on upgrading in GVCs. More particularly, it teased out three ways in which Mozambican politics affected the promotion of the cashew sector and how the involvement of the Mozambican Government in the local cashew value chain shaped the chain governance as well as the upgrading paths of local producers and processors. It further refined the general theoretical arguments of the political settlements approach by developing a framework for studying productive sector support and applying it to the example of the Mozambican cashew sector.

The thesis made a methodological contribution by proposing an operationalisation of firm-level upgrading in GVCs that incorporates the process of technological capability building. It contributed to closing an empirical gap by studying learning mechanisms at firm level and by exploring how politics shape firm-level learning in a case and country that have so far received little scientific attention.

Finally, the thesis developed practical tools to study the level of technological capabilities of cashew processors which are of interest for public institutions and development practitioners in the field of industry promotion as well as for value chain actors and business associations. On the one hand, it provides a firm survey for studying the technological capabilities of cashew processors. On the other hand, it developed a technological capability matrix for the cashew industry in Sub-Saharan Africa. The findings of the thesis are of high relevance for researchers in the areas of political science, development studies, and economics.

The following section discusses important theoretical implications of the research findings presented in this thesis that relate to the field of political science, particularly the political economy literature, and to the research on upgrading in (agricultural) GVCs.

10.2 Theoretical Implications of the Research Findings

The findings of this thesis confirm the argument made by political settlements scholars (e.g. Khan 2010; Whitfield et al. 2015) that the distribution of power within societies affects *whether* political elites promote productive sectors. However, the study of the Mozambican cashew sector shows that the influence of politics on productive sectors goes beyond promoting the emergence or rehabilitation of specific sectors. Sector-specific political settlements also affect *how* governments promote productive sectors.

By adopting a specific set of industrial policies and/or by allocating specific roles to states governments intervene in local value chains. This may affect a) the distribution of power within local value chains, i.e. the chain governance; b) the creation of forward and/or backward linkages; and c) the learning efforts or pressure to build capabilities of local value chain actors. In a much-noticed article on state roles in GVCs, Horner (2017) teased out four roles that states may take on in local value chains, including facilitators, regulators, producers (through state-owned enterprises) or buyers (through public procurement). This thesis shows that states or government institutions, respectively, may also take on the role of suppliers with (detrimental) effects on the creation of backward linkages.

The findings of the thesis also illustrate how opportunities for formal and informal rent creation for members of the ruling elite or their lower level allies created the promotion of productive sectors, e.g. bribes or shares in firms that operate export terminals or supply public institutions, may indirectly affect firm-level upgrading. Opportunities to skim off rents impeded a far-reaching reform of the cashew sector that would have been required to enforce technological capability building among local processors.

The literature on upgrading in GVCs acknowledges the role of states in shaping the governance of GVCs in more general terms (e.g. Ponte and Sturgeon 2014). Nevertheless, the primary analytical focus is on firms in GVCs. Studying the power relations between firms in GVCs is essential to explore potential upgrading opportunities and learning channels of supplier firms in low-income countries. However, the findings of this thesis emphasise the importance of studying how politics shape the governance structure of local value chains and the upgrading paths of local firms in concrete terms in order to gain a more holistic understanding of firm-level upgrading in GVCs.

Research on how Sub-Sahara African firms in GVCs learn suggests that firms combine different learning channels in order to build their capabilities (e.g. Marchi, Giuliani, and Rabellotti 2018). Learning from buyers in GVCs, industrial policies and/or spillovers from FDI are considered three major learning channels for local supplier firms in Sub-Saharan Africa and are often used as an argument to promote GVC participation of local firms, adopt industrial policies or to create incentives to attract foreign investments.

The findings of this thesis suggest that one reason for why building technological capabilities is so difficult for firms in agricultural GVCs may be that their learning channels are limited. On the one hand, the conditions for the effective enforcement of industrial policies are not in place in many Sub-Sahara African countries. Industrial policies and the institutions they create therefore do not promote technological learning among firms. As discussed above, in some cases they may even hamper capability building and/or the creation of linkages. On the other hand, it is unlikely that international buyers transfer knowledge to agro-processors in Sub-Saharan Africa that operate in market-based or modular GVCs. Finally, direct and indirect knowledge spillovers from FDI only occur if foreign firms exist – which may not be the case when sectors emerge or are revived – and if these firms are more technologically advanced than locally-owned firms. The example of the Mozambican cashew industry showed that this may not be the case.

In the absence of these learning channels, some firms may draw on the support of international organisations or donors. This type of technical assistance can be effective but is often limited to relatively short time periods. Therefore, first and foremost, firms in agricultural GVCs with marked-based or modular governance draw on learning channels at firm-level. This confirms the argument made by Morrison et al. (2008, 41) that learning in GVCs depends to a large extent on firm-level learning efforts and strategies.

Financing technological capability building is costly and access to finance at reasonable interest rates is often not available. A common way for many Sub-Sahara African agro-processors to finance investments in learning seem to be diversified businesses with counter-cyclical business lines. Profits made in one business line can then be used to subsidise investments in TC building in another business line. Diversifying businesses may be a way to finance learning costs if entrepreneurs seek to drive innovation. However, it may also bear the risk that diversified companies reap the benefits of policy-induced subsidies in various sectors without equally investing in capability building in all (or any) of the sectors they operate in.

In the case of the Mozambican cashew sector, the favourable conditions for cashew processing created by the cashew law motivated local and foreign companies to invest in cashew processing after the industry's breakdown, inter alia a range of exporters of raw cashew nuts that aimed to diversify the risks of their businesses and to evade the RCN export tax. However, the commitment of these companies to driving innovation and capability building in the processing industry remained limited. The findings of this thesis therefore support the argument made by Melese (2019, 154) that the owners of diversified companies calculate the risk of investing in technological capability building in one sector in relation to that sector and its industrial policy framework as well as in relation to the other sector(s) they operate in and subsidies or costs created by industrial policies in these sectors.

The following section discusses important practical implications of this study for promoting export-driven industrialisation in low-income countries and firm-level upgrading.

10.3 Practical Implications and Policy Recommendations

The findings of this thesis related to the politics of upgrading in GVC (Chapter 9 and section 10.1 above), the economic and social effects of upgrading (see Chapter 8) and the learning channels of Mozambican cashew processors (Chapter 9) suggest that members of public institutions, development practitioners, and consultants need to rethink their understanding of upgrading in GVCs in three ways. Rethinking upgrading also has important implications on the formulation of policies that seek to promote productive sectors and upgrading in low-income countries as discussed in this section.

First, they need to move away from understanding upgrading in terms of moving towards more complex, higher value-added activities in GVCs, such as final processing stages, branding, or marketing. Instead of a focus on functional upgrading, which is often hard to achieve due to the power dynamics within GVCs, deepening existing functions of Sub-Sahara African suppliers in additive value chains, e.g. by complying with international standards or diversifying buyers, may be a more promising avenue to increase efficiency and competitiveness.

Moreover, initiatives that aim to promote upgrading in agricultural GVCs tend to neglect the potential for '*thickening*' (Kaplinsky 2015, 31), i.e. developing backward linkages by promoting the development of supplying industries. The latter may include suppliers of agricultural inputs,

e.g. fertilizers, seedlings or seeds; agricultural service providers, e.g. spraying and pruning trees; firms that take care of the maintenance of processing equipment; or local equipment manufacturers. The case of the Mozambican cashew sector illustrates that privatising the supply of agricultural inputs would be a promising way to promote the creation of backward linkages and to exit from an inefficient and costly government programme.

Second, rethinking upgrading in GVCs requires replacing an overly positive view on upgrading that neglects possible side-effects at sector and/or country level by a more realistic estimation of the effects of upgrading on structural transformation. For instance, if upgrading is closely linked to increasing the mechanisation of factories this will have an influence on employment creation in the mid- to long-term, i.e. a large number of low-skilled factory workers may be replaced by a small number of high(er)-skilled workers. While formal employment opportunities at the factories decrease, predominantly informal employment opportunities on farms or plantations may increase. Side-effects of upgrading are not necessarily negative in terms of promoting structural transformation, but they need to be considered when designing policies or donor programmes. A good understanding of how a value chain functions, the interests and power of value chain actors, the impact of politics and government involvement in a chain, and current developments, e.g. related to technological innovations or consumer demands, help to estimate some economic and social effects of upgrading.

Third, it is important to move away from the idea that GVC participation on its own promotes upgrading among local supplier firms in Sub-Saharan Africa. Upgrading in agricultural GVCs is in many cases not a result of knowledge transfers from international buyers to suppliers in low-income countries. Participating in GVCs creates opportunities for firms in Sub-Saharan Africa to develop their TCs, however, this is not an automatic process, particularly in market-based or modular GVCs. The interests of lead firms and Sub-Sahara African supplier firms may not be aligned or even conflicting. In the absence of learning mechanisms within the GVC, targeted industrial policies and the creation of institutions that are able to promote capability building and to enforce learning among local firms become even more important (Marchi, Giuliani, and Rabellotti 2018, 401; Pietrobelli and Staritz 2018, 568).

The example of the Mozambican cashew sector shows that external actors, such as international organisations (e.g. the World Bank or the United Nations Industrial Development Organisation UNIDO), donors (e.g. the German development corporation GIZ or the United

States Agency for International Development USAID) or non-profit organisations (e.g. TechnoServe or the Dutch development organisation SNV) can play an important role in promoting capability building among agro-processors. This is particularly the case if industrial policies, buyers in the GVC, or foreign direct investments (FDI) are not a source of learning for local firms in low-income countries. Activities that promote the technological capabilities of agro-processors may include financial and technical assistance to acquire international food-safety certificates, to choose and purchase processing equipment that suits country-specific conditions, establishing contacts with buyers or equipment manufacturers, or trainings on machine maintenance.

The findings of the thesis emphasise that industrial policies as well as programmes by donors, international organisations or non-profit organisations that aim to promote capability building among firms need to be based on a thorough analysis of:

- the capabilities that firms require to break into GVCs and to upgrade;
- the current level of capabilities at firm/industry level;
- the main barriers for local firms to access GVCs and to upgrade;
- the governance structure of the GVC and the upgrading opportunities it offers;
- the hitherto upgrading paths of local value chain actors;
- the economic and social effects of upgrading;
- the learning channels firms use(d) and why;
- country- and sector-specific political settlements.

On the one hand, GVC interventions require a good understanding of the power relations between actors within GVCs as well as the strategies of (international) buyers. On the other hand, they require a good understanding of the power relations between economic actors and ruling elites and of how politics shapes the governance of local value chains and the upgrading paths of local value chain actors. This thesis provides an example of how to implement a more holistic GVC analysis that takes local politics into account.

As argued recently by Pietrobelli and Staritz (2018, 558-568), GVC interventions by donors need to be coherent with GVC characteristics, the capabilities of local firms and institutional contexts and need to take into account how GVC dynamics interact with local innovation systems. The findings of this thesis suggest that it is equally important to consider how GVC dynamics interact with local politics, notably in countries or sectors that lack local innovation systems. Donors or

international organisations that seek to give advice on productive sector reforms need to be aware of sector-specific political settlements to be able to make recommendations that are politically viable.

The findings of the thesis also have implications for agro-processors in Mozambique and beyond. First, the case study on the Mozambican cashew industry highlights that remaining globally competitive requires continuous investments in capability building, even if sectors are protected. Second, capability building is costly and risky and a possible way to increase investment capabilities and reduce risks are diversified companies. Third, Sub-Sahara African agro-processors that operate in market-based or modular value chains and in sectors where industrial policies are not enforced effectively need to drive innovation and capability building through their endogenous efforts. Donors may be a source of knowledge, however, the time frame of donor programmes is limited. The most important and reliable source of learning is therefore the firm itself.

Finally, the case of the Mozambican cashew sector suggests a stronger focus on promoting agro-processing in Sub-Saharan Africa as a way to spur structural transformation, in particular in GVCs with a low level of concentration on the production side (i.e. agricultural crops are grown by a large number of small-scale farmers and not on large-scale, private-owned plantations). Many donor programmes[129] focus on strengthening the weakest links in GVCs, i.e. usually small-scale producers, with the aim to reach the poorest or most vulnerable groups in society. This is partly due to the objective of donor programmes to make a direct impact on as many beneficiaries as possible.

Supporting producers is important to improve the livelihood of smallholders and to increase production. However, intermediary processing of agricultural products is gaining increasing importance in Sub-Saharan Africa and may have positive effects on producers and beyond. Next to providing an income to smallholders, agro-processors may transfer knowledge to small-scale producers. Local intermediary processors have a good understanding of the local value chain and its challenges and an interest in high-quality inputs. To secure high-quality supply for their factories, they may support producers to improve their production techniques. In addition,

[129] Examples from the Mozambican cashew sector are GIZ's project 'Competitive African value chains for pro-poor growth/ African Cashew initiative (ACi)', the project 'ACAMOZ - Support to the cashew nut value chain in Mozambique' by the French Development Agency (AFD).

intermediary processors create formal employment opportunities and help to create a trained labour force. The thesis therefore calls for shifting the focus of government or donor programmes on the weakest link in GVCs (small-scale producers) to the link with the greatest potential in terms of upgrading, employment creation and generating income for smallholders.

The final section of the conclusion discusses two promising avenues for further research.

10.4 Avenues for Further Research

The findings presented in this thesis suggest two avenues for further research that may contribute to generating more generalisable insights on how agro-processors in Sub-Saharan Africa learn and on how politics shapes productive sector promotion and upgrading in agricultural GVCs. These avenues involve 'zooming out' to other countries as well as 'zooming in' on the micro-level of the firm.

On the one hand, a systematic comparison between cashew sectors in Sub-Sahara African countries would increase insights on which learning channels cashew processors in Sub-Saharan Africa use and why. Political settlements and the governance structures of local value chains play out differently across countries and sectors. By comparing firms in different cashew-producing countries, researchers could tease out learning patterns of cashew processors and/or different learning types and gain a better understanding of how the economic and political contexts in which firms are embedded shape their learning efforts and the learning mechanisms they use. A comparison of how politics shapes productive sector promotion and upgrading in the cashew sectors in different countries could help to develop a typology of politics and outcomes at sector level. This would shed light on which types of policies and government involvement in local GVCs promote learning – or at least do not hamper the acquisition of technological capabilities among local value chain actors.

On the other hand, an avenue for further research is to zoom in on the micro-level of the firm in order to unpack the mechanisms through which cashew processors in Mozambique or other Sub-Sahara African countries acquired or enhanced their capabilities. The thesis traced drivers for capability building at firm level, learning mechanisms that cashew processors used to build capabilities and to upgrade, and the social and economic effects this had at firm and at sector/country level. It engaged in process tracing at an early stage, i.e. the mechanisms that

linked causes and outcomes of technological capability change and upgrading were unclear. Unpacking these mechanisms and their respective parts requires collecting micro-level firm data, e.g. through regular in-depth interviews with firm owners, factory managers and selected employees over a longer time period and by observing how individuals in firms develop and implement measures to make production processes more efficient, increase product quality, comply with international standards, enhance the skills of employees or establish contacts with new suppliers or buyers.

Mozambique's cashew processing industry has achieved a remarkable come-back. However, contrary to statements of the Mozambican Government the industry is not '*ready for come-back as a leading player in the global cashew nuts market*' (Club of Mozambique 2018a). Any future interventions – by the Mozambican Government or donors – that aim to increase the global competitiveness of the Mozambican cashew industry need to be based on a thorough understanding of the political economy of the Mozambican cashew sector and its effects on the governance of the local cashew value chain and firm-level upgrading. This thesis may serve as a basis for such interventions.

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Annex

Annex 1. List of Terms and Actors in the Mozambican Cashew Sector

Term	Explanation
Agrifocus	A Mozambican company that imports chemicals used for agriculture. Agrifocus has a contract with the National Cashew Institute (INCAJU) and is the only provider of chemicals used for INCAJU's spraying programme.
Apanhador (picker)	Apanhadores or pickers harvest cashews from abandoned cashew trees.
Association of the Cashew Industry (AICAJU)	AICAJU represents the interests of cashew processors in Mozambique. The association currently has seven members and has its head office in Nampula.
Breakage rate	The cashew breakage rate indicates how many cashew kernels break during processing, e.g. during deshelling, drying or sorting. The price for whole kernels is higher than for broken kernels. The breakage rate is a qualitative indicator for processing efficiency.
Cajú de Moçambique	Cajú de Moçambique was established in 1979 as a state-owned holding company. The company took over seven formerly private-owned processing factories during nationalisation.
Cashew Committee	The Cashew Committee is an informal institution and decision-making forum that brings together actors involved in the cashew sector in Mozambique. Its meetings are organised by INCAJU and usually take place in Nampula. The Committee meets every month during the cashew harvest season and less frequently once the harvest season is over.
Cashew exporter/ trader	A company that is involved in the trade of raw cashew nuts within Mozambique and/or exports raw cashew nuts.
Cashew harvest season	The cashew harvest season in Mozambique lasts from September until February.
Cashew kernel	The cashew kernel is the edible part of the cashew nut.
Cashew nut shell liquid (CNSL)	The corrosive and toxic CNSL is a by-product of processing cashew nuts that is found in the cashew nutshell. It can be used for developing drugs, antioxidants, fungicides and biomaterials. CNSL is a skin allergen that harms workers' hands during manual cashew processing.
Cashew processor/ industrialist	Cashew processors or industrialists are companies that do primary processing of cashew nuts in Mozambique.
Cashew producer	Cashew producers are farmers that grow and harvest cashew trees. Most farmers in Mozambique own 5-25 cashew trees.
Commercial, Industrial and Agricultural Association of Nampula (ACIANA)	ACIANA is an association that pools the interests of traders in Mozambique based in Nampula. In the case of the cashew sector it represents the interests of cashew exporters/traders.

Contribuinte (supplier)/ não contribuinte (non-supplier)	During the cashew export ban, cashew processors have the right to buy RCN from cashew exporters/traders that are officially registered as suppliers at a fixed price. The FOB reference price for exporting RCN for suppliers is lower than for non-suppliers.
Export ban	By law, RCN exports are only officially permitted once the processing industry has accumulated enough RCN for their factories. INCAJU decides when exports of RCN may resume. Usually the temporary 'export ban' lasts from October until December or January.
Free on Board (FOB)	Free on Board (FOB) indicates that the buyer takes ownership of goods once the seller ships the goods. The buyer is liable for goods that are destroyed or damaged during shipping and must purchase insurance to protect the shipment.
FOB reference price	The FOB reference price for RCN exports is set every month by the Mozambican Tax Authority. It is linked to the world market price for RCN. The Authority uses this price to determine the (minimum) value of the export tax that RCN exporters must pay. The fixed price was introduced to combat tax evasion.
Indian processing system	The Indian processing system was introduced in Mozambique at the beginning of the 2000s. The system uses steam heating to make nuts brittle. Workers then use pedal-activated cutters to cut open the cashew shell that clamped two converging blades into the nut along its seam.
Intermediary trader	A trader based in Mozambique who buys RCN, e.g. from cashew producers or *apanhadores*, and sells them on to cashew processors, RCN exporters or other intermediary traders.
International food safety standards	International food safety standards or food safety management systems encompass a range of policies, procedures, practices, controls, and documentation that increase food safety. They concern the whole production process, from the warehouse to the packing section. Relevant private food safety standards in the cashew sector are Hazard Analysis and Critical Control Points (HACCP), African Cashew Alliance Quality and Sustainability Seal (ACA Seal), the seal of the British Retail Consortium (BRC) and the ISO 22000 standard.
Kernel outturn ratio (KOR)	Kernel outturn is an internationally recognised quality indicator for cashew nuts. It indicates the amount of usable cashew kernels after deshelling a bag of 80 KG of raw cashew nuts measured in pounds.
Mechanical impact shelling	Mechanical impact shelling is a cashew processing technology that was used in Mozambique in most factories before the breakdown of the processing industry. Impact shelling involved roasting raw nuts to extract the cashew nut shell liquid (CNSL) and to make the cashew shell brittle for shelling. Nuts were then opened by an impact on the brittle shell to (ideally) split the nut into halves. The machines for impact shelling used a centrifugal impeller that hurled the nuts against the inside wall of a metal

	impact cylinder. To reduce kernel breakage, the speed of the impeller was adjusted to the nut size.
Nacala Special Export Terminal (TEEN)	TEEN started operating in April 2011 as an additional independent, privately-operated terminal 10 kilometres outside the Port of Nacala. Between 2012 and 2017 export containers with RCN and cashew kernels were obliged by law to pass through TEEN and to pay a fee of 7.000 Meticais per container.
National Cashew Institute (INCAJU)	INCAJU was established in 1998 and is the main governing body of the Mozambican cashew sector. The Institute's purpose is to implement policies that promote cashew production and cashew processing as well as to contribute to defining an adequate policy framework for the sector. It is also responsible for monitoring the marketing of cashew nuts in Mozambique. INCAJU has offices in Maputo and in all cashew-producing provinces.
National Cashew Workers Union (SINTIC)	SINTIC represents the interests of workers in Mozambican cashew factories. The president of SINTIC participates in the meetings of the Cashew Committee and plays an important role in negotiating the minimum wage for cashew workers.
Paraquedista (parachutist)	Paraquedistas (parachutist) are unlicensed foreign intermediary traders of raw cashew nuts that work on behalf of Asian or Tanzanian importers of RCN. They suddenly appear in cashew growing areas at the beginning of harvest in September and October when there is no production in other cashew-growing regions. Parachutists tend to offer higher prices than local intermediary traders or processors.
Primary cashew processing	Primary processing refers to separating the edible cashew kernel from its outer and inner shell (testa). The final product of primary cashew processing is the cashew kernel.
Raw cashew nut	Raw cashew nuts are cashew nuts that have not been processed, i.e. cashew kernels with shell.
Right of first refusal	The right of first refusal seeks to ensure that cashew processors accumulate enough RCN for processing during the harvest season. It gives processors the right to buy RCN from cashew exporters/traders that are registered as *contribuintes* (suppliers) at a fixed price before RCN exports start.
Secondary cashew processing	Secondary processing refers to producing cashew-based snacks or more complex cashew-based products, e.g. cashew milk.
Semi-mechanised cashew processing	Semi-mechanised processing means that some processing steps are performed manually and some are mechanised.
TechnoServe	TechnoServe is a U.S. non-profit organisation that operates in 29 countries and focuses on private sector development. It is mainly financed by the U.S. Department of Agriculture. TechnoServe played an important role in reviving the Mozambican cashew sector at the beginning of the 2000s and has recently completed an initiative that supported the Mozambican cashew industry called *Mozacajú*.

Source: the author

Annex 2. Interviews with Non-Value Chain Actors

#	Organisation	Interview location	Type	Position of Interviewee	Date of interview
1	National Cashew Institute (INCAJU)	Maputo	Public institution	Employee	27.02.2018
2	National Cashew Institute (INCAJU)	Maputo	Public institution	National Director	01.03.2018
3	National Cashew Institute (INCAJU)	Maputo	Public institution	Head of Economic Department	09.03.2018
4	National Cashew Institute (INCAJU)	Nampula	Public institution	Employee	22.03.2018
5	National Cashew Institute (INCAJU)	Pemba	Public institution	Employee	13.03.2018
6	Ministry of Agriculture and Food Security	Maputo	Public institution	Advisor to the Minister of Agriculture	20.02.2018
7	Bureau for the Promotion of Small Industry (GAPI)	Maputo	Local finance institution	Consultant	23.02.2018
8	Bureau for the Promotion of Small Industry (GAPI)	Maputo	Local finance institution	Director	23.02.2018
9	Bureau for the Promotion of Small Industry (GAPI)	Maputo	Local finance institution	Development Finance Advisor	20.02.2018
10	Bureau for the Promotion of Small Industry (GAPI)	Nampula	Local finance institution	Delegate in Nampula	15.03.2018
11	National Cashew Workers Union (SINTIC)	Maputo	Workers union	General Secretary	10.04.2018
12	Confederation of Business Associations of Mozambique (CTA)	Maputo	Business association	President of the Working Group on Tax Policy & founder of AICAJU	26.02.2018
13	Fundaçao Chissano	Maputo	Local private foundation	Executive Director	28.02.2018
14	Aga Khan Development Foundation	Maputo	International private foundation	Employee	14.02.2018

#	Organisation	Interview location	Type	Position of Interviewee	Date of interview
15	TechnoServe	Maputo	International organisation	Former Programme Director of TechnoServe's cashew programme	21.02.2018
16	TechnoServe	Nampula	International organisation	Project Manager	16.03.2018
17	TechnoServe	Pemba	International organisation	Programme Director	12.03.2018
18	German Chamber of Commerce	Maputo	International organisation	Representative in Maputo	04.04.2018
19	World Bank	Maputo	International organisation	Interviewee 1: Economist Interviewee 2: Consultant	16.02.2018
20	International Growth Centre (ICG)	Maputo	International organisation	Country Economist	28.02.2018
21	USAID/Speed+ Programme	Maputo	International organisation	Interviewee 1: Agricultural Portfolio Manager Interviewee 2: Policy Portfolio Coordination - Agriculture	22.02.2018
22	AgDevCo	Maputo	International organisation	Mozambique Country Director	19.02.2018
23	Independent Consultant (cashew expert)	Maputo	Local consultant	Independent consultant	06.03.2018 & 13.04.2018
24	Independent Economist and Consultant	Maputo	International consultant	Independent consultant	03.04.2018
25	Emalink	Nampula	International consultant	Director	several interviews in April 2018
26	The Open University	Maputo	Researcher	Senior Lecturer	09.04.2018
27	SOAS University of London	Telephone interview	Researcher	Research Associate	07.05.2018

Source: the author

Annex 3. Interviews with Value Chain Actors

#	Organisation	Interview location	Type	Position of interviewee	Date of interview	Factory location(s)
1	Association of the Cashew Industry (AICAJU)	Nampula	business association	President	23.03.2018	-
2	Commercial, Industrial and Agricultural Association of Nampula (ACIANA)	Nampula	business association	Vice President	26.03.2018	-
3	Condor Cajú	Nampula	primary processor	Manager	20.03.2018	Anchilo, Namentil & Macia
4	Condor Cajú	Anchilo	primary processor	Production Director	21.03.2018	Anchilo, Namentil & Macia
6	DML Cashew	Nampula	primary processor	Director	20.03.2018	Angoche
8	Emaju	Nampula & Monapo	primary processor	Director	15.03.2018 & 24.03.2018	Monapo
9	CA Company/ Sunny	Maputo	primary processor & exporter	Admini-strator	03.04.2018	Nampula
5	Caju Ilha	Angoche	primary processor & exporter	Factory Manager	27.03.2018	Lumbo & Angoche
7	Indo Africa Import Export	Telephone interview	primary processor & exporter	General Director	12.04.2018	Mecua
10	Mocaju/ METL Group	Nampula	primary processor & exporter	General Director	19.03.2018	Murrupula
11	ETG Korosho	Maputo	primary processor & exporter	General Director	02.03.2018	Nampula & Namgade
12	ETG Korosho	Nampula	primary processor & exporter	Manager	20.03.2018	Nampula & Namgade
13	Cashew Yetu	Maputo	secondary processor	Owner and General Manager	20.02.2018 & 11.04.2018	Maputo

#	Organisation	Interview location	Type	Position of interviewee	Date of interview	Factory location(s)
14	Caju e Nozes de Moçambique	Maputo	secondary processor	Owner and General Manager	05.04.2018	Maputo
15	Cabo Caju	Pemba	former processor	Owner and General Manager	13.03.2018	Pemba
16	Lugenda	Maputo	trader	General Director	06.03.2018	-
17	Asimoz Impex	Maputo	trader	CEO	04.04.2018	-
18	IKURU	Nampula	trader	General Manager	19.03.2018	-
19	Sociedade Comercial Mesallo (SCM)	Email interview	trader and secondary processor	Director	16.03.2018	Mueda
20	Global Trading & Agency (GTA)	Sliedrecht	international buyer	CEO	21.09.2018	

Source: the author

Annex 4. List of Factory Visits

#	Company	Factory Location	Type of Processing	Date of Visit
1	Condor Cajú	Anchilo, Nampula	primary processing	21.03.2018
2	Caju Ilha	Angoche, Nampula	primary processing	27.03.2018
3	Emaju	Monapo, Nampula	primary processing	24.03.2018
4	ETG Korosho	Nampula City	primary processing	21.03.2018
5	Cashew Yetu	Maputo	secondary processing	11.04.2018
6	Cabo Caju*	Pemba, Cabo Delgado	primary & secondary processing	13.03.2018
* Factory closed down in 2010				

Source: the author

Annex 5. Background Interviews Conducted during Scoping Trip in September 2017

#	Organisation	Location	Type	Position of Interviewee	Date of interview
1	University Eduardo Mondlane	Maputo	Researcher/ consultant	Associate Professor/ independent consultant	September 2017
2	University Eduardo Mondlane	Maputo	Researcher	Professor	September 2017
3	Institute for Economic and Social Studies (IESE)	Maputo	Researcher	Researcher	September 2017
4	Institute for Economic and Social Studies (IESE)	Maputo	Researcher	Researcher	September 2017
5	German Chamber of Commerce	Maputo	International organisation	Representative in Maputo	September 2017
6	Catholic University Louvain	Maputo	Researcher	Researcher	September 2017
7	Royal Danish Embassy	Maputo	International organisation	Representative in Maputo	September 2017
8	Servir Mocambique	Maputo	Entrepreneur	Director	September 2017
9	Association of Commerce, Industry and Services (ACIS)	Maputo	Business association	President	September 2017
10	Embassy of the Federal Republic of Germany	Maputo	International organisation	Deputy Head of Cooperation	September 2017
11	SOAS University of London	Maputo	Researcher	Researcher	September 2017

Source: the author

Annex 6. Interview Guideline

Introductory questions

- How did you become involved in the Mozambican cashew sector?
- For how many years have you been working in the cashew sector?
- What did you do before?
- What is your current position?
- What does your work focus on?

Questions related to the rehabilitation of the cashew sector?

- What caused the breakdown of the cashew processing industry?
- The cashew processing sector in Mozambique collapsed in the 1990s. Since the revival of the cashew sector, a new group of cashew processors has emerged. Who is this new group of processors?
    - What is the background of these entrepreneurs and how did they become cashew processors?
    - How was the sector rehabilitated? Which actors were involved?
    - What kind of training did entrepreneurs get from TechnoServe?
    - Why did the companies that participated in TechnoServe's cashew rehabilitation programme leave the sector?
- Did the Government support TechnoServe's cashew rehabilitation programme?
- How was the Government involved in the rehabilitation of the cashew sector?
- After the collapse of the cashew sector in the 1990s, processing companies changed from capital intensive to manual or semi-manual technologies. Why were capital-intensive processing machines not viable?
    - How was the Indian, semi-mechanised processing system introduced?
    - Has the shift to manual/semi manual technologies increased the benefits for processors?

Questions related to the cashew processing industry today

Buyers and end markets

- Who do Mozambican cashew processors sell to?
    - Is it difficult for cashew processors to find buyers?
- Are there many international kernel buyers?
- Have end markets for processed cashew nuts diversified since the sector was revived?
- Are buyers and consumers becoming more demanding?
    - What role do standards play?
    - Which certificates to Mozambican cashew processors acquire?

    - What kind of changes do factories have to make to comply with international standards?
    - Is compliance with international standards mandatory?
    - Do processors get a price premium for complying with standards?
- Do prices and requirements differ according to end market?

Processing Technologies

- Why are cashew processors investing in new processing equipment to increase mechanisation?
- When did factories start to introduce new processing technologies?
- How do processors gain knowledge on new processing equipment?
    - Do they travel to other countries?
    - Is there a high labour turnover between factories?
- How does the change of technologies in the cashew factories affect the quality of cashew kernels, the work force needed in the factories and the tasks they perform?
- Are there processors in Mozambique that do state-of-the art processing?

Factory workers:

- How do factory workers protect their hands?
    - Is the use of castor oil to protect workers' hands effective?
- How do workers in the cashew factories get paid?
    - Do they receive the minimum wage?
- Do processors regularly train factory workers? What kind of training?
- How are factory workers organised?
- What role does SINTIC (the cashew workers union) play?

Miscellaneous

- Are the current processing firms mostly foreign owned or are there also locally owned processing firms?
- How do processors raise money gain access to finance?
- How can processors be exporters at the same time?
- What is the story behind the Special Export Terminal TEEN at Nacala Port?
    - Who owns the company that holds the concession for TEEN?
- Why are many processors staying below their processing capacity?
- What are the major challenges of the sector?
- Is the Mozambican cashew processing industry globally competitive?
    - Would the processing industry be able to survive without the export tax?
- Is there potential for further value addition in Mozambique, e.g. secondary processing?
- How strong is the lobbying power of processors vis-à-vis the Government?

Questions related to the cashew value chain and relations between value chain actors

- What are the major entry barriers to break into the cashew global value chains for Mozambican cashew processors?
- Who is the most powerful actor in the global cashew value chain?
- Who is the most powerful actor in the local cashew value chain?
- Who gets which share of the export price, i.e. what percentage do farmers, processors, traders get?
- How are the relations between processors and cashew producers?
- How are the relations between processors and cashew traders?
- How are the relations between cashew traders and producers?
- How are the relations between processors and exporters?
- Do traders or processors support farmers?

Questions related to exporters/traders of raw cashew nuts

- I read that before the cashew sector broke down there was an 'oligopoly' of traders that set the prices paid to producers. Does this oligopoly still exist?
- Do traders need licences to operate?
- What types of traders are involved in the cashew value chain?
- How severe are illegal exports of RCN?
- Is there a lot of corruption in the cashew sector?
- How many layers of intermediary traders are there?
- How high are the margins for cashew traders?

Questions related to the implementation of the cashew law and the role of INCAJU

- How do the current policies affect producers, processors, and traders?
- Is INCAJU doing a good job in promoting the cashew sector?
- INCAJU is providing seedlings and chemicals for farmers free of charge. Who supplies chemicals to INCAJU?
    - Why is Agrifocus the sole supplier of chemicals to INCAJU?
    - Who owns the company?
- Has INCAJU's seedling programme been successful? Has production increased?
- How does the right of first refusal work?
    - Do processors make use of the right of first refusal? If no, why?
- Do processors make use of INCAJU's guarantee fund? If no, why?
- What is the export tax on RCN used for?
- Who is part of the cashew committee?
    - What exactly does the cashew committee do?
    - How do producers promote their interests?

- Who determines when the temporary export ban is lifted?
    - What are the effects of the export ban?
- Who determines the FOB reference price?
    - Why was the FOB reference price introduced?
- Why are prices for farmers so low even though there is a strong demand for RCN in Mozambique and the world market prices are overall increasing?
    - Would a reference price for producers make sense?

Questions related to the reform of the cashew law

- Who started the reform process of the cashew law?
- What are the major issues that are being discussed?
- Which actors are involved in the reform process from the Government side?
- Which value chain actors are involved in the reform process?
- What do the different actors involved in the cashew sector want?
- Are there different opinions on the reform within the Mozambican government?
- Which value chain actor has the most influence on political processes, such as the reform of the sector?
- Do/Can international organisations take influence on the reform of the cashew law?
- How should the sector be reformed?

Annex 7. Firm Survey

Basic Company Information

Company Details	
Name of processing company	
Year established	
Location and date of establishment of processing facilities	
Were factories newly established or bought/hired from former processor?	
# of employees in factories	
Are you currently planning to set up new factories?	
Sales volume in cashew kernels (and RCN)?	
Ownership of the company?	

Interviewee Details	
Name & position of interviewee	
Duration of employment with company	
Personal background: When and and why did you start working in the cashew sector?	

Export	
When did you start exporting cashew kernels?	
What is the export volume of the past three years?	
Do you also sell to the domestic market?	
What is the share of domestic sales of total sales in cashew?	
Position/Function(s) in the value chain (exporter of RCN/kernels?)	

Investment

(Refers to: skills required before and while setting up cashew processing factories.)

Could you tell me something about the history of the firm's involvement in cashew? Why? How? When?	
How much knowledge on the cashew sector in Mozambique did the factory manager/CEO have before he started?	
How was investment finance raised?	
Did you carry out a feasibility study before the initial investment?	a) yes By whom: b) no
How did you get managerial experience and skilled labour in the beginning?	a) from abroad (foreigners). Form where: b) Employ nationals with previous work experience in the cashew processing sector c) trained workers and/or managers d) other:
How did you select the location of your factory/ies?	
From where and whom did you source your technological equipment?	
Did your company get support, e.g. from donors, GAPI, Incaju, to set up the factory?	

Buyers and End Markets

(Refers to: meeting specifications of buyers in different markets, ability to establish stable relations with buyers, market knowledge and promotion skills, compliance with international standards, marketing)

How did you find your first buyer?	
Who are your main buyers today (name and origin)?	
Which buyers offer the best price? Are there differences between buyers?	

Has there been a shift from selling to brokers to selling to direct buyers?	
How has this affected the price at which you sell cashew kernels?	
How do you find international buyers? Is it difficult to find buyers?	
Have you lost buyers in the past? Why?	
How stable are the relations with your buyer(s)?	a) stable # of years: b) somewhat stable c) ad hoc
What are the main challenges in fulfilling buyers' demands? (Are you meeting the volume requirements of buyers?)	
How do you negotiate prices with international buyers? Is there room for negotiation?	
Does/do your factory/ies comply with any standards, e.g. HACCP, ACA seal, ISO 2200?	
When did you introduce these standards and how long did the process take?	
Why did you introduce standards?	
Did you get support to introduce standards by INCAJU/donors/buyers?	
What did you have to change in your factory/ies to meet the standards? (production process, equipment, training of workrers, etc.)	
Are there any minimum requirements related to standards from international buyers?	
Do you get a better price because of compliance with standards?	
Do buyers visit your factory and has this led to any changes, e.g. production process, hygiene, technology)?	

Have the demands of buyers related to the firm's capabilities and related to standards/quality changed in the past 10 years?	a) yes Explain: b) no
Have buyers supported developing your firm's capabilities?	
What kind of marketing activities does your company do?	a) website b) trade fairs c) logos on packages d) other:
Do you have your own brand and marketing unit?	a) yes b) no

Product & Production Process

(Refers to: product and process related capabilities, e.g. quality control, operation and maintenance, inventory management, monitoring of productivity, adaption and improvement of technology, process and product innovation related to research activity)

Product & Productivity	
At what price do you sell your cashew kernels (unit price)?	
How have prices for cashew kernels developed over the past 10 years?	
What is the cost of production per unit?	
How has labour productivity changed during the past 10 years? (output per employee)	
Have buyers ever rejected your cashew kernels? If yes, why?	
What is your outturn of whole kernels?	
Do you spend money on R&D? If yes, how much?	
Are you in contact with education or research institutes?	
Can the factory be more productive/efficient?	
Are you extracting CNSL or do you make use of the cashew shell?	

Post-harvest Process & Technological Equipment	
What processing technology is used at your factories for the individual processing steps?	
What is the average age of your technological equipment?	
Have you changed the technology used at your factory since it was established? How?	
Why did you change equipment? Did the new equipment solve the problems?	
From whom do you buy your new equipment?	
Is it difficult to get access to new equipment in Mozambique?	
Did you do a lot of research on different suppliers before you bought your new equipment?	
Do you source all equipment from the same equipment supplier or do you buy from different suppliers?	
Does the supplier provide after sale service or do you have staff for that?	
What is your average annual budget for upgrading technology?	

Quality Control & Compliance	
How do you monitor the quality of your products?	
At what stages of the production process do you check quality?	
How do you supervise your workers?	
Did you take any measures to improve product quality?	
Did you get/are you getting any advice on how to improve product quality?	
How do buyers and other public institutions control quality?	a) buyers b) public institutions

Were there unsatisfactory buyer or public audits? Why?	

Labour Management	
What is the share of management, technicians, administrative staff, supervisors and workers (in %)?	a) share of management b) share of technicians c) share of administrative staff d) share of workers e) other
What is the share of expatriate workers?	
Which positions do expatriate workers hold?	
Has the share of expatriate workers increased/decreased over the past 10 years?	c) yes Explain: b) no
What is the average labour turnover per year?	Average per year:
What is the average absenteeism rate per year?	Average per year:
How do you deal with high absenteeism rates, e.g. during rainy season?	
What measures did you take to decrease absenteeism rates (e.g. day care, food, health services, etc.)	
How do you hire workers?	
How are workers paid? How much do they earn per kilo for different processing activities?	
Is training offered regularly to workers (internally/externally)?	c) yes Type of training: b) no

Linkages

(Refers to: relations with suppliers, buyers, public institutions, business associations, consultants and donors)

Input Linkages/Supply Chain (Refers to linkages with suppliers: raw material inputs, packaging)

From whom do you mainly buy raw cashew nuts?	a) farmers b) traders/intermediaries c) exporters
Do you often make use of your right of first refusal?	
Are your relationships with suppliers of raw cashew nuts stable?	
Do you have contracts with specific producers/ intermediary traders?	
Do you support intermediary traders or producers? (e.g. credits, inputs, etc.)	
At what price did you buy RCN this campaign?	
How do you raise finance to buy RCN for the whole year?	
Do you check the kernel out-turn ratio (KOR) of raw cashew nuts?	
What are the main challenges for sourcing raw cashew nuts?	
From whom do you source other inputs, e.g. packaging?	

Linkages with other firms/industry associations/public institutions/other institutions (Refers to: interaction and cooperation with local and foreign firms; participation in industry associations, sub-contracting; participation in support programmes; contacts to public institutions)	
What are your sources of information/advice on the cashew sector, current trends, new technology	a) other locally owned processing firms b) other foreign owned processing firms c) buyers d) hired consultants e) industry associations f) ministry/public institution g) other:
Do you collaborate with other processing firms?	
Why? What are the benefits of these activities for your firm?	
Are you sub-contracting or have you sub-contracted parts of the processing?	
Are you a member of AICAJU?	

What are the benefits of being a member of AICAJU?	
Do you collaborate with one or more of the following actors? Specific support programmes?	a) public institutions, e.g. INCAJU, province government c) Politicians d) Consultants or service firms e) other organisations (e.g. donors):
Is the government support to the cashew sector effective?	a) yes b) no
There is a reform process going on. How do you lobby for your interests?	
How should the law be reformed?	
What are the greatest challenges of the sector?	

Source: the author

Annex 8. Code Book

Code	Code Type	Code Definition	# of Codings
History of the Mozambican cashew sector	code	Text sequences that relate to the history of the Mozambican cashew sector from the colonial era until today	
Colonial era	level 1 sub-code	Information related to the Mozambican cashew sector during the colonial era (1950-1975)	6
Socialist era/ nationalisation	level 1 sub-code	Information related to the Mozambican cashew sector during the socialist era (1975-1990)	9
Privatisation	level 1 sub-code	Information related to the privatisation of the Mozambican cashew sector (1991-1994)	7
Liberalisation	level 1 sub-code	Information related to the liberalisation of the Mozambican cashew sector (1991-1999)	16
Breakdown of the sector	level 1 sub-code	Information related to the breakdown of the Mozambican cashew sector (1999-2002)	6
Rehabilitation	level 1 sub-code	Information related to the rehabilitation of the Mozambican cashew sector and the industry today (2002-2009)	46
Cashew value chain	code	Text sequences that relate to current and former cashew value chain actors in Mozambique and at global level, external actors that are involved in the value chain, and the governance of the cashew value chain	
Value chain actors	level 1 sub-code	Information related to value chain actors and external actors that are involved in the cashew value chain	1
Agrifocus	level 2 sub-code	Information related to the Mozambican supplier of agricultural chemicals Agrifocus	3
Paraquedistas	level 2 sub-code	Information related to *paraquedistas*, i.e. foreign, unlicensed traders of RCN that appear in Mozambique during the cashew harvesting season	7
Cashew committee	level 2 sub-code	Information related to the Cashew Committee in Mozambique	9

Code	Code Type	Code Definition	# of Codings
Factory workers	level 2 sub-code	Information related to workers that are employed in cashew factories	15
Future processing factories in Mozambique	level 2 sub-code	Information related to cashew processing factories that are planned or currently under construction	8
Former processing factories in Mozambique	level 2 sub-code	Information related to former cashew processing factories in Mozambique	30
International donors	level 2 sub-code	Information related to international donors that were/are involved in the cashew value chain	15
TechnoServe	level 2 sub-code	Information related to the U.S. organisation TechnoServe	23
Shakti Pal	level 3 sub-code	Information related to Shakti Pal, an employee of TechnoServe who was involved in reviving the cashew sector in Mozambique	5
International buyers of cashew kernels and RCN	level 2 sub-code	Information related to actors that buy cashew kernels or RCN from Mozambique, including primary processors in India and Vietnam, international secondary processors, retailers, nut brokers and wholesalers	17
SINTIC	level 2 sub-code	Information related to the Union of Cashew Workers (SINTIC)	4
ACIANA	level 2 sub-code	Information related to the Commercial, Industrial and Agricultural Association of Nampula (ACIANA)	12
AICAJU	level 2 sub-code	Information related to the Association of the Cashew Industry (ACIANA)	10
INCAJU/Mozambican Government	level 2 sub-code	Information related to the National Cashew Institute (INCAJU) and the Mozambican Government's involvement in the cashew sector	35
Cashew producers	level 2 sub-code	Information related to cashew producers in Mozambique	35
Traders/exporters of RCN in Mozambique	level 2 sub-code	Information related to actors that are involved in trading RCN within Mozambique or exporting RCN from Mozambique to Asia	47

Code	Code Type	Code Definition	# of Codings
Secondary processors in Mozambique	level 2 sub-code	Information related to secondary cashew processors in Mozambique	14
primary processors in Mozambique	level 2 sub-code	Information related to primary processing firms that operate one or more cashew processing factories in Mozambique and their firm histories	46
Jab Moz	level 3 sub-code	Information related to the cashew processing firm Jab Moz	2
Mocaju	level 3 sub-code	Information related to the cashew processing firm Mocaju	2
Indo Africa	level 3 sub-code	Information related to the cashew processing firm Indo Africa	1
Emaju	level 3 sub-code	Information related to the cashew processing firm Emaju	1
Olam	level 3 sub-code	Information related to the cashew processing firm Olam	11
Caju Ilha	level 3 sub-code	Information related to the cashew processing firm Caju Ilha	8
ETG Korosho	level 3 sub-code	Information related to the cashew processing firm ETG Korosho	12
Condor	level 3 sub-code	Information related to the cashew processing firm Condor	39
Relations between cashew value chain actors	level 1 sub-code	Information related to the relations between actors in the cashew value chain at Mozambican and global level	15
Value chain governance/ power relations	level 1 sub-code	Information related to the governance of the cashew value chain, i.e. power relations within the chain	12

Code	Code Type	Code Definition	# of Codings
Cashew industrial policy framework	**code**	**Text sequences that relate to the current industrial policy framework of the Mozambican cashew sector and its reform**	
Current cashew law	level 1 sub-code	Information related to the current cashew law in Mozambique	15
Export ban	level 2 sub-code	Information related to the ban of RCN exports	17
Export tax	level 2 sub-code	Information related to the tax on RCN exports	21
FOB reference price	level 2 sub-code	Information related to the Free on Board (FOB) reference price for RCN	10
Guarantee fund	level 2 sub-code	Information related to the guarantee fund for cashew processors	8
Right of option	level 2 sub-code	Information related to the right of option for cashew processors	16
Support to producers	level 2 sub-code	Information related to a range of measures that support cashew producers in Mozambique	29
New cashew law/reform process	level 1 sub-code	Information related to the reform of the cashew industrial policy framework	47
Suggested reforms	level 1 sub-code	Necessary reforms of the Mozambican cashew sector that were suggested by interview partners	39
Rent creation and holding power in the cashew sector	**code**	Information related to rent creation by the political elite and lower level party members and the holding power of cashew processors and RCN exporters in Mozambique	
Employment creation in the cashew sector	level 1 sub-code	Information related to employment creation in the Mozambican cashew sector (on farms, in factories and through exports)	12
Organisational holding power/lobbying capacity	level 1 sub-code	Information related to the lobbying capacity vis-à-vis the Government of cashew processors, RCN exporters and cashew producers	26

Code	Code Type	Code Definition	# of Codings
formal rent creation	level 1 sub-code	Information related to opportunities for formal rent creation for members of the political elite and lower level FRELIMO officials	12
informal rent creation	level 1 sub-code	Information related to opportunities for informal rent creation for members of the political elite and lower level FRELIMO officials	14
Processes of upgrading in the Mozambican cashew sector	**code**	**Text sequences that relate to processes of economic and social upgrading in the Mozambican cashew processing sector and channels of capability acquisition for cashew processors in Mozambique**	
Supply chain upgrading	level 1 sub-code	Information related to supply chain upgrading	3
End-market upgrading	level 1 sub-code	Information related to end-market upgrading	2
Social up-/downgrading	level 1 sub-code	Information related to social up-/downgrading	30
Process upgrading	level 1 sub-code	Information related to process upgrading	23
Product upgrading	level 1 sub-code	Information related to product upgrading	3
International standards	level 2 sub-code	Compliance with international food safety standards as a channel of capability acquisition	11
Channels of capability acquisition	level 1 sub-code	Information related to channels of capability acquisition for cashew processors in Mozambique	
Learning by doing	level 2 sub-code	Learning by doing as a channel of capability acquisition	2
Labour turnover	level 2 sub-code	Labour turnover as a channel of capability acquisition	3
Exchange of information between foreign and local entrepreneurs	level 2 sub-code	Exchange of information between foreign and local entrepreneurs in the cashew industry as a channel of capability acquisition	3

Code	Code Type	Code Definition	# of Codings
Visits to other cashew-producing countries	level 2 sub-code	Visits to other cashew processing facilities in other cashew-producing countries as a channel of capability acquisition	10
international organisations/donors	level 2 sub-code	Support by international organisations/donors as a channel of capability acquisition	14
Lead firms/international buyers	level 2 sub-code	Support by international lead firms/buyers as a channel of capability acquisition	6
Technological Capabilities of Cashew Processors	**code**	**Text sequences that relate to technological capabilities that cashew processors require to gain access to the global cashew value chain**	
Sourcing RCN in Mozambique	level 1 sub-code	Information related to sourcing RCN for processing in Mozambique	6
Gaining Market Access	level 1 sub-code	Information related to gaining market access	13
Investment Capabilities	level 1 sub-code	Information related to investment capabilities required by cashew processors	6
Challenges of the Mozambican cashew sector	**code**	**Text sequences that relate to challenges of the Mozambican cashew sector**	
Lack of skills at INCAJU	level 1 sub-code	Challenges related to a lack of skills at the National Cashew Institute (INCAJU)	8
Meeting volume requirements	level 1 sub-code	Challenges related to meeting the volume requirements of international buyers	4
Lack of local input suppliers and maintenance providers	level 1 sub-code	Challenges related to a lack of local input suppliers of processing equipment and local maintenance providers	2
Lack of by-product processing	level 1 sub-code	Challenges related to a lack of by-product processing in Mozambique	1
Low level of RCN production	level 1 sub-code	Challenges related to the low level of RCN production in Mozambique	11

Code	Code Type	Code Definition	# of Codings
Low quality of RCN and lack of quality control	level 1 sub-code	Challenges related to the low quality of Mozambican RCN and a lack of quality control at the farm gate	10
Illegal exports of RCN/tax evasion	level 1 sub-code	Challenges related to illegal exports of RCN and evasion of the RCN export tax	12
Theft of RCN	level 1 sub-code	Challenges related to theft of RCN at commercial cashew farms	3
Infrastructure constraints	level 1 sub-code	Challenges related to infrastructure constraints	3
Access to finance	level 1 sub-code	Challenges related to access to finance for cashew processors	19
low productivity of factory workers	level 1 sub-code	Challenges related to the low level of productivity of cashew factory workers, in particular due to high levels of absenteeism	13
Money laundering	level 1 sub-code	Challenges related to money laundering	2
Cross-cutting issues	**code**	**Text sequences that relate to a range of relevant issues for the Mozambican cashew sector that were raised during interviews**	
Nacala Special Export Terminal (TEEN)	level 1 sub-code	Information related to the Nacala Special Export Terminal (TEEN)	4
Informal sector	level 1 sub-code	Information related to informal cashew trade and processing	2
Competitiveness of the Mozambican cashew industry	level 1 sub-code	Information related to the competitiveness of the Mozambican cashew industry	20
Prices (for RCN and cashew kernels)	level 1 sub-code	Information related to prices for RCN and cashew kernels	37
RCN Production	level 1 sub-code	Information related to RCN production	3

Code	Code Type	Code Definition	# of Codings
Cashew plantations in Mozambique	level 2 sub-code	Information related to cashew plantations in Mozambique	13
Cashew tree nurseries in Mozambique	level 2 sub-code	Information related to cashew tree nurseries in Mozambique	4
Markets	**code**	**Text sequences that related to the global, regional, and domestic market for cashews**	
Current developments in the global cashew market	level 1 sub-code	Information related to current developments in the global cashew market	10
Regional Market for Cashew Kernels	level 1 sub-code	Information related to the regional market for cashew kernels	3
Domestic Market for Cashew Kernels	level 1 sub-code	Information related to the domestic market for cashew kernels	2
Other cashew-producing/ cashew processing countries or regions	**code**	**Text sequences that relate to other cashew-producing and/or cashew-processing countries or regions**	
Brazil	level 1 sub-code	Information related to cashew production and processing in Brazil	1
Burkina Faso	level 1 sub-code	Information related to cashew production and processing in Burkina Faso	3
China	level 1 sub-code	Information related to cashew processing in China	2
India	level 1 sub-code	Information related to cashew production and processing in India	8
Ivory Coast	level 1 sub-code	Information related to cashew production and processing in Ivory Coast	4

Code	Code Type	Code Definition	# of Codings
Tanzania	level 1 sub-code	Information related to cashew production and processing in Tanzania	3
Vietnam	level 1 sub-code	Information related to cashew production and processing in Vietnam	6
West Africa	level 1 sub-code	Information related to cashew production and processing in West Africa	3
Other agro-processing sectors in Mozambique	**code**	**Text sequences that relate to other agro-processing sectors in Mozambique**	
Cotton	level 1 sub-code	Information related to cotton production in Mozambique	1
Horticulture	level 1 sub-code	Information related to the export of horticultural products	5
Poultry	level 1 sub-code	Information related to poultry production in Mozambique	2
Rice	level 1 sub-code	Information related to rice production in Mozambique	1
Soy	level 1 sub-code	Information related to soy production in Mozambique	2
Tobacco	level 1 sub-code	Information related to tobacco production in Mozambique	1

Source: the author

Annex 9. Primary Processing Factories (currently operating) in Mozambique in 2018

#	Company	Type	# of Factories	Location of Factories	Origin	Year opened	Capacity (tons of RCN/year)	# of Employees	Technology used in Factory	Target Markets (2017/2018)	Further Information on Firms
1	**Condor Cajú**	primary processor	3	• Anchilo (Condor Nuts), Nampula • Namentil (Condor Cajú), Nampula • Macia (Condor Anacardium), Gaza	Domestic (Portuguese origin)	2005 2008 2018	10.000 6.000 5.500	1.750 2.478 450	semi-mechanised	• export: Lebanon, U.S., Portugal, Norway, Netherlands, UK • small quantities to secondary processors	Condor's factories are considered the most technologically advanced and best managed in the country. They are a point of reference for development practitioners working in the cashew sector and for other domestic and foreign processors.
2	**Caju Ilha**	primary processor & exporter	2	• Lumbo, Nampula • Angoche, Namupla	Domestic (Indian origin)	2012	4.500 4.500	1.600 1.600	semi-mechanised	• export: Iran, Lebanon, Russia, UAE, Angola • small quantities to secondary processors	Caju Ilha is linked to Gani. Gani is a large trader of agricultural products in Mozambique with a long history in trading. He is currently the president of the Association of the Cashew Industry (AICAJU).

#	Company	Type	# of Factories	Location of Factories	Origin	Year opened	Capacity (tons of RCN/year)	# of Employees	Technology used in Factory	Target Markets (2017/2018)	Further Information on Firms
3	**Indo Africa Import Export**	primary processor & exporter	1	• Mecua, Nampula	Domestic (Indian origin)	2010	1.000	800	manual	• export: South Africa	Mr. Khan is primarily a trader. Factory does not operate the whole year.
4	**Emaju**	primary processor	1	• Monapo, Nampula	Foreign (Denmark)	2016	50	14	manual	• domestic market	This small-scale factory is run by a development practitioner from Denmark who has worked in the cashew sector, particularly with farmer groups, for international organisations since the 1990s.
5	**CA Company/ Sunny**	primary processor & exporter	1	• Nampula (between Nampula & Anchilo)	Foreign (China)	2017	5.000	350	semi-mechanised	• export: China, U.S., EU	According to a representative from CA Company the factory employs 190 people. This number seems unrealistic. According to INCAJU data, 350 people worked in the factory in 2017/2018.

#	Company	Type	# of Factories	Location of Factories	Origin	Year opened	Capacity (tons of RCN/year)	# of Employees	Technology used in Factory	Target Markets (2017/2018)	Further Information on Firms
6	Mocaju/ METL	primary processor & exporter	1	• Murrupula, Nampula	Foreign (India)	2016	3.000	720	manual	• export: U.S., Lebanon	
7	ETG Korosho	primary processor & exporter	2	• Chiúre, Cabo Delgado • Nampula city	Foreign (multi-national)	2005 2015	5.500 4.500	800 800	semi-mechanised	• export: South Africa, UAE, Russia, U.S., Australia	Korosho is part of ETG, a multi-national company that exports a variety of agri-cultural products from Mozam-bique to Asia.
8	Olam	primary processor & exporter	4	• Angoche, Monapo & Mogincual & Geba, Nampula	Foreign (multi-national)	2005	18.000 (all factories)	5.066	semi-mechanised	• export: South Africa, Netherlands, Canada, U.S., India, Italy Vietnam	Olam is a multinational food and agri-business company that runs several cashew pro-cessing plants in Mozambique and other African countries. Olam exports all the cashew kernels it processes in Mozambique to its branches in other countries.

#	Company	Type	# of Factories	Location of Factories	Origin	Year opened	Capacity (tons of RCN/year)	# of Employees	Technology used in Factory	Target Markets (2017/2018)	Further Information on Firms
9	**Cashew and Rural Development Centre of Itoculo/ ADPP**	primary processor & farmers	1	• Itoculo, Nampula	Domestic	1996	40	16	manual	• domestic market	Small-scale processing facility run by an NGO. ADPP consists of a training centre, a 110 hectare cashew plantation, a cashew processing unit and a chestnut and cashew juice factory. Cashew products are sold on the local market.
10	**Jab Moz**	primary processor & comercial farmer	1	• Morrumbene, Inhambane	Foreign (South Africa)	?	200	45	?	• export: South Africa	Jab Moz is linked to the South African company Jab Dried Fruit Products. All cashew kernels are exported to South Africa.
11	**CN Caju**	primary processor	1	• Nacala, Nampula	Foreign (China)	2018	ca. 4.500	52	semi-mechanised	• export: China	This factory only implements the first processing step (deshelling of RCN) in Mozambique.

#	Company	Type	# of Factories	Location of Factories	Origin	Year opened	Capacity (tons of RCN/year)	# of Employees	Technology used in Factory	Target Markets (2017/2018)	Further Information on Firms
12	DML Cashew	primary processor	1	• Angoche, Nampula	Foreign (Dubai/ India)	2018	1.500	500	semi-mechanised	• export	Indian-owned company that started doing business in Mozambique in 2010 and runs two fish processing factories and several wholesale shops.
			19		4 domestic/ 8 foreign		73.790	17.041			

Sources: own compilation based on data collected during field research in Mozambique from February to April 2018 and on Paul (2008); Macauhub (2018); Club of Mozambique (2018b); FMCGConnect.net (2015); AICAJU (2018); Correia (2015); Fijamo (2017); Costa (2019, 40)

Annex 10. Planned primary Processing Factories in 2018

#	Company	Type	# of Factories	Location of Factories	Origin	Capacity (tons of RCN/year)
1	Gowri Shankar	primary processor	1	Liupo, Nampula	Foreign (India)	
2	Indu Caju Asia Oriental Lda.	primary processor	1	Massinga, Inhambane	Foreign (Vietnam)	
3	Indo Africa Import Export Lda	primary processor & exporter	1	Meconta, Nampula	Domestic (Indian origin)	4.000
4	Chinese investors linked to CA Company/Sunnny	primary processor	2	Moma and Angoche or Nampula	Foreign (China)	
			6		1 domestic/ 5 foreign	

Source: own compilation based on data collected during field research in Mozambique from February to April 2018

Annex 11. Secondary Processing Factories (currently operating) in 2018

#	Company	Type	# of Factories	Location of factories	Origin	Year opened	Capacity (tons of RCN/year)	Em-ployees	Target market(s)
1	Sunshine Nuts	secondary processor	1	Matola, Maputo	Foreign (USA)	2013		30	export
2	Cajú e Nozes de Moçambique	secondary processor	1	Machava, Maputo	Domestic (Portuguese origin)	2017	sales of up to 400KG/month	7	export
3	Cashew Yetu	secondary processor	1	Choupal, Maputo	Domestic	2013	2.400KG/day	10	domestic & regional
4	Sociedade Comercial Mesallo (SCM)	secondary processor	1	Mueda, Cabo Delgado	Foreign (Portuguese)	2004	up to 400KG/month	5	domestic
			4		2 domestic / 2 foreign				

Sources: own compilation based on data collected during field research in Mozambique from February to April 2018 and sunshine nut co. (2017)

Annex 12. Export Value of Raw Cashew Nuts and Processed Cashew Nuts 2007-2017

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
5.1 Cashew Raw												
5.1.1 Quantity	Ton	24.176	31.607	11.720	27.923	42.000	5.595	11.700	7.187	6.493	22.590	69.876
5.1.2 Average Price	US$/ Ton	506	735	733	886	1.300	874	850	1.150	1.200	1.400	1.560
5.1.3 Value	**US$**	**12.233.056**	**23.231.145**	**8.590.760**	**24.739.778**	**54.600.000**	**4.888.519**	**9.945.000**	**8.265.050**	**7.791.600**	**31.625.650**	**109.031.871**
5.2 Kernels												
5.2.1 Quantity	Ton	3.088	3.018	3.636	3.210	3.050	3.002	4.756	3.397	4.425	6.013	4.331
5.2.2 Average Price	US$/ Ton	3.860	4.470	3.830	5.590	5.840	5.610	6.200	6.630	7.580	7.490	6.990
5.2.3 Value	**US$**	**11.919.680**	**13.490.460**	**13.925.880**	**17.943.900**	**17.812.000**	**16.842.623**	**29.489.556**	**22.521.513**	**33.541.727**	**45.040.141**	**30.276.696**
5.3 Total value of Export	**US$**	**24.152.736**	**36.721.605**	**22.516.640**	**42.683.678**	**72.412.000**	**21.731.142**	**39.434.556**	**30.786.563**	**41.333.327**	**76.665.791**	**139.308.567**

Source: own compilation based on INCAJU (2018)

Annex 13. RCN Export per Destination, Average Price and Export Surtax 2016-2017

	2016				2017			
	Exports in KG	Share of Exports in %	Average Price per KG in USD	Export Surtax in MZN	Exports in KG	Share of Exports in %	Average Price per KG in US$	Export Surtax in MZN
Bangladesh					96.192,00	0%	$1,44	1.738.276,45 MZN
China	252.000,00	1%	$1,26	3.555.593,31	103.020,00	0%	$1,83	2.357.617,10 MZN
India	13.656.121,00	74%	$1,67	205.671.902,95	45.162.909,40	69%	$1,57	899.108.889,82 MZN
South Africa	17.450,00	0%	$0,50	81.084,92	330.664,00	1%	$1,34	5.533.621,39 MZN
Vietnam	4.521.512,00	24%	$1,46	67.723.353,66	19.531.950,00	30%	$1,67	411.386.466,71 MZN
UAE	11.970,00	0%	$109,44	11.629.627,59				
	18.459.053,00	100%	$22,87	288.661.562,43	65.224.735,40	100%	$1,57	1.320.124.871,47 MZN
			Surtax in USD:	$4.759.465,17			Surtax in USD:	$21.766.279,83

Source: own compilation based on Alfândega de Moçambique and Autoridade Tributária de Moçambique (2018)