



Harnessing Agricultural Trade
for Sustainable Development

Guatemala

Potato, cocoa and cardamom





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Executive summary

This study is part of a series of UNCTAD publications that focus on policies in three countries, Guatemala, Vanuatu and Malawi, aimed at upgrading and diversifying specific agricultural sectors of rural economies in developing countries with a view to raising living standards among small-scale farmers in a context of female empowerment and food security and above all, sustainable development.

The study analyses three agricultural sectors in Guatemala – potato, cocoa and cardamom - in terms of opportunities derived from trade of primary and processed products. The focus is on the growing trend among consumers in high income countries for artisanal, fair-trade, organically grown, single-origin products that allow niche market penetration by integrating into their traded products a narrative on the history and lives of local farming communities where the primary product is cultivated.

The study bears in mind the heavy costs to implement Voluntary Sustainable Standards, internationally-accepted certification systems, or consumer-driven specific standards set by retailers, looking at domestic sales opportunities, for example within Guatemala's growing tourism sector, which also allows farmers to hedge against price fluctuations in international markets.

According to the study's sustainability analysis, the strategies presented are aligned with sustainable development goals, integrating environmental, social welfare, gender equality, a more equitable distribution of income, and, more diversified income opportunities. Outcomes are expected to be positive overall, but the study nevertheless advises care in implementation to minimise any unforeseen and potentially negative long-term impacts, for example on issues such as staple food production. It further cautions on possible perverse consequences whereby, without successfully integrating small-scale farmers in the product value-chain, the strategies' principal beneficiaries may rather be intermediaries.

This report concludes with a set of recommended sustainable development policies that take into account food security and the importance of agriculture not only for small-scale farmers but for Guatemala's economy as a whole.

The study's five sustainable development policy recommendations are:

- Enhance policy coherence and multi-stakeholder dialogue supportive of the development of smallholder farmers. This means aligning trade and agricultural policy, bringing all stakeholders, including small-scale farmers, into the policy

and development dialogue, and ensuring that all policies are aligned with Guatemala's 'National Development Policy and "Plan K'atun: Our Guatemala 2032".

- Promote farmers' groups and associations as a means of pooling resources and expertise and enhancing the flow and exchange of information among small-scale farmers. Such groups can also encourage the creation of green and sustainable business, and, by inviting female membership, narrow the gender gap.
- Develop and implement competition policy and legislation to reduce anti-competitive behaviour among intermediaries detrimental to small-scale farmers, support market behaviour and a more sustainable use of resources and encourage domestic and foreign investment.
- Target the growing international market in high-value, niche/boutique sustainable agricultural products: (a) taking full advantage of Guatemala's rich and diverse genetic pool while addressing the capacity to cultivate the primary product in sufficiently large and homogenous quantities using the traditional techniques, culture and know-how associated with the niche/boutique market; (b) devise a national strategy to market niche/boutique products locally through the tourism industry and reinforce national and internationally the 'Guatemala Made' brand; and (c) introduce and promote a proper agricultural certification scheme that is in line with world-accepted norms for varieties native to the country.
- Promote Good Agricultural Practices (GAPs) and encourage feedback from Good Manufacturing Practices (GMPs) on recommendations for production, processing and food transport. GAPs should be based on principles of sustainability, be gender-inclusive and ensure that products are ecologically safe, of consistently higher quality and do no harm, and contribute to food security.

Since the vast majority of Guatemala's inhabitants live and work in rural areas, rural development is the main driver of poverty reduction and will be essential to achieving Sustainable Development Goals. It is anticipated that raising rural to the level of urban incomes will help reverse the current pattern of rural-urban migration that is fueling unsustainable urbanisation.

This UNCTAD study has drawn upon some of the best available expert information on the challenges Guatemala faces on its road to development.

Acronyms and abbreviations

Guatemala

ADECAR	Asociación de Exportadores de Cardamomo
AGEXPORT	Association of Exporters from Guatemala
AMACACAO	Meso American Association of Fine Cocoa and Chocolate
ANAKAKAW	Asociación Nacional del Kakaw
ASOCUCH	Asociación de Organizaciones de Los Cuchumatanes
CARDEGUA	Cardamom Producers Association of Guatemala
CONADUR	Urban and Rural Development National Council
CONADEA	Agricultural and Farming Development National Council
CONRED	National Coordinator for Disaster Reduction
CRIA	Regional Consortiums for Agricultural Research
CUNAKakaw	A standard being implemented, adopted and monitored by AMACACAO
ENCOVI	Guatemala Living Standards Measurement Survey
FEDECOVERA	Federación de Cooperativas de las Verapaces
FENAPAPA	National Federation of Potato
FUNDAECO	Fundación para el Ecodesarrollo y la Conservación
FUNDALACHUA	Lachúa Foundation
GTQ	Guatemalan Quetzal
ICTA	Science and Technology Agricultural Institute
INACOP	National Institute of Cooperatives
INSIVUMEH	National Institute of Seismology, Volcanology, Meteorology and Hydrology
MAGA	Ministry of Agriculture, Livestock and Foods
MEM	Ministry of Energy and Mining
MINECO	Ministry of Economic Affairs
PAFFEC	Family Agriculture Programme to Strengthen the Rural Economy
PNDRI	Rural Development Integral National Policy
PRONACOM	National Competitiveness Programme
SEGEPLAN	Presidential Secretariat for Planning and Programming
SEPREM	Presidential Secretariat for Women

International

AMCs	Approved Modified Checklists
CACM	Central American Common Market
CECI	Centre d'étude et de coopération internationale (Canada)
DR-CAFTA	Dominican Republic-Central America Free Trade Agreement
EFSA	European Food Safety Authority
EUR	Euro
FAO	Food and Agriculture Organization
FAOstat	Statistics arm of FAO
FITS	Foreign Trade Information System of the Organization of American States
GAP	Good Agricultural Practices
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GMPs	Good Manufacturing Practices
GNI	Gross National Income
GSP	Generalized System of Preferences
HACCP	Hazard analysis and critical control point
HPSS	Harmonized Produce Safety Standard
HS	Harmonized System
ICCO	The International Cocoa Organization
IFA	Integrated Farm Assurance
IFOAM	International Federation of Organic Agricultural Movements
IICA	Inter-American Institute for Cooperation on Agriculture
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ITC	International Trade Centre
IUCN	International Union for Conservation of Nature
MDGs	Millennium Development Goals
MENA	Middle East and North Africa region
MERCOSUR	Southern Common Market (South America)
MRLs	Maximum residue levels (for pesticides)
NAFTA	North American Free Trade Agreement

NAPPO	North American Plant Protection Organization
NAPPRA	Not Authorized Pending Pest Risk Analysis (United States)
NTMs	Non-tariff Measures
OAS	Organization of American States
OIRSA	Organismo Internacional Regional de Sanidad Agropecuaria
PPP	Purchasing Power Parity
QMS	Quality Management System
RA/SAN	Rainforest Alliance / Sustainable Agriculture Certification
RTA	Regional Trade Agreement
SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade
UN COMTRADE	International Trade Statistics Database
UNDP	United Nations Development Programme
UNEGEEW	United Nations Entity for Gender Equality and the Empowerment of Women
UNITERRA	A Canadian International Development Program to combat poverty and empower women and youth
US\$	United States Dollar
USDA APHIS	United States Department of Agriculture Animal and Plant Health Inspection Service
UTZ	A certification programme for sustainable farming of coffee, tea, cocoa and hazelnuts. The program is part of the Rainforest Alliance, an international non-profit organization working to create a better future for people and nature.
VAT	Value-added tax
VSS	Voluntary Sustainability Standards
WTO	World Trade Organization
WFP	World Food Programme

Introduction

This study was conducted to generate knowledge and build awareness and understanding of the social effects of trade-led, structural transformation in agriculture. It mainstreams concerns about social inclusiveness and sustainability in order to assist the government in developing sound and complementary trade and agricultural policies supportive of rural livelihoods, food security and social inclusiveness. The publication was reviewed and validated by the Ministries concerned and is intended to provide sector-specific, evidence-based insights and policy guidance in the following areas:

- Costs and benefits for small-scale farmers from agricultural diversification and commercialisation;
- Ways to counter abuse of market power and to rebalance supply chains in favour of small-scale farmers;
- Schemes and trade measures to internalise the environmental costs and benefits of different farming systems and ways to ensure complementarity with trade rules;
- Income and consumption effects on rural households of staple food liberalisation and whether the country enjoys sufficient leeway under current bilateral, regional and multilateral rules, for agricultural stabilisation policies supportive of rural livelihoods and food security;
- Market access and market entry barriers in key export markets and how to tackle them through structured supply chain initiatives; and,
- Gender issues and other social inclusiveness dimensions.

The study focuses on three sectors – potato, cardamom and cocoa – particularly in the municipalities that can benefit most from the new opportunities that diversification and upgrading can offer. The selected sectors were studied in three geographical areas with very distinctive conditions: Franja Transversal del Norte, covering the northern municipalities of the departments of Alta Verapaz, Quiché, Huehuetenango and Izabal; Boca Costa, a thin strip parallel to the southern coast, which stretches from the department of San Marcos (bordering with Mexico), passing through Quetzaltenango, Retalhuleu, Suchitupéquez, Sacatepéquez and others all the way to Jutiapa (bordering with El Salvador); and Altiplano Occidental, located in the north-western region and surrounded by a number of municipalities from the departments of Quetzaltenango, San Marcos, Huehuetenango and Totonicapán (see map on page 12).

The summary on agronomic conditions, marketing links and processing techniques might serve as an important guide for stakeholders' engagement in the agricultural product chain and for strengthening institutions and achieving sustainable policy interventions in the agricultural sectors studied. The authors based their analysis on publicly accessible data collected and provided by national experts and international consultants, as well as findings during missions conducted by experts. The analysis highlights a significant challenge posed by the substantial differences between the crops studied. While cocoa and potatoes are deeply rooted in the familial agriculture and consumption tradition and can be regarded as native to Guatemala, cardamom is an introduced crop for which the country, without itself having an established domestic market, has become the world's top exporter due to favourable climatic conditions. The sustainability impacts of upgrading and diversification in these sectors are discussed in depth. This study, after providing crop-specific characteristics, focuses on the common traits in all three sectors to create a basis for sustainable policy interventions.

Providing a sustainable framework for trade-led agricultural policies goes hand-in-hand with a holistic analysis of the associated agronomic, socio-economic and environmental context as well as other relevant research and investigation. The structure of this study reflects the broad scope of the underlying work. Chapter 1 provides a brief overview of the Guatemalan economy and outlines key trends in its socio-economic development and their relation to environmental and climatic concerns. Chapters 2, 3 and 4 summarise the agronomic, processing and marketing (both domestic and international) states of the sectors studied – respectively potato, cocoa and cardamom. Chapter 5 builds on the preceding analysis and outlines the upgrading and diversification options. Chapter 6 relates the analysis directly to the Sustainable Development Goals (SDGs) and focuses on providing sustainability outcomes to efforts to upgrade, expand and diversify the sectors studied. The report concludes with a summary of key policy recommendations with the potential to enable sustainable, trade-led policies in Guatemala.



CHAPTER 1



Country overview
and development
background

Country overview and development background

Guatemala is located in Central America, bordering both the Pacific and Atlantic oceans between the Equator and the Tropic of Cancer. It shares borders with Mexico, Belize, El Salvador and Honduras, occupying an overall area of 108,889 square kilometres. Administratively, the country consists of 22 departments with 340 municipalities. The Guatemalan territory is mountainous, with coastal plains in the south, central highlands and northern lowlands. Its geographic location and complex topography provide diverse climatic conditions and vegetation. The range of climatic zones is a source of rich biodiversity and potential for agriculture, forestry and hydropower generation. Located in a highly seismic zone at the meetings point of three tectonic plates – North American, Caribbean and Cocos - the country is highly vulnerable to earthquakes and volcanic eruptions. Guatemala is also vulnerable to extreme events such as hurricanes, floods and landslides.



Economy

Guatemala's economy is highly prone to shocks from natural events. It is estimated that, between 1991 and 2010, the economic impact of just the most prominent storms and droughts was an average reduction of 0.51 per cent of GDP per year (WBG 2012). This led the country to strengthen risk identification and monitoring systems by adopting methodologies to analyse and evaluate hazards and vulnerabilities. This means that Guatemala has started its transition from dependency on the ex-post budget allocations for reconstruction and disaster response caused by natural events to more preventive mechanisms.

These mechanisms are included in a development agenda and planning, and are the result of coordination between the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH), the Presidential Secretariat for Planning and Programming (SEGEPLAN), the Ministry of Agriculture, Livestock and Foods (MAGA) and the National Coordinator for Disaster Reduction (CONRED). Despite this progress, Guatemala needs to incorporate the principles of risk reduction into the broader scope of its economic system, including an investment programme.

With an overall Gross National Income of US\$ 135,262 million (at PPP) in 2017 and GNI per capita of US\$ 8000 (at PPP), Guatemala is Central America's largest economy and constitutes a quarter of the Central American Common Market (CACM). Firm macroeconomic fiscal and monetary stability has been endorsed over the past few years, resulting in a 3.2 per cent growth in GDP in 2017, forecast to rise to 3.4 per cent in 2018 and 3.6 in 2019 (IMF 2018). As illustrated in Figure 1, the share of national value-added generated by agriculture is falling. This fall has partially contributed to structural changes in the economy: nevertheless, this chapter emphasizes that changes must be managed in a sustainable way especially given the rise in population and risks associated with climate change.

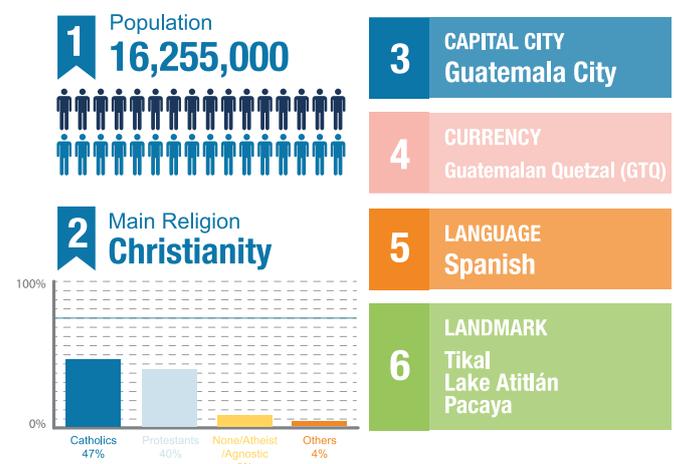
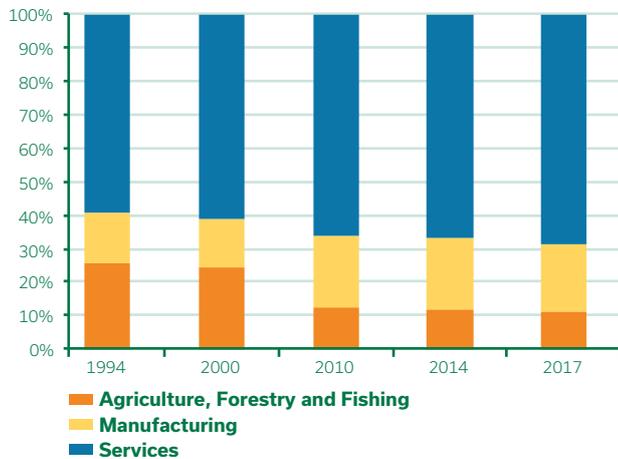


FIGURE 1: Value-added GDP composition, Guatemala

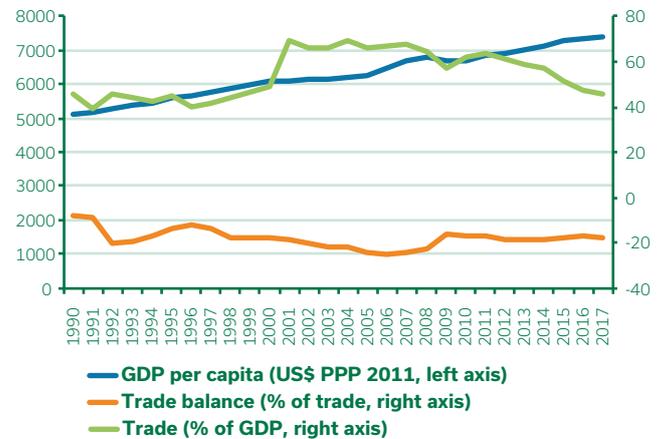


Source: UNCTAD secretariat calculations based on World Bank World Development Indicators data.

The Guatemalan economy still faces, despite recent improvements, higher rates and share of informality than other Latin American and Caribbean countries (WBG 2017). Such practices discourage the formalisation of business initiatives and result in lost tax revenues. Thus, only 81.4 per cent of the fiscal target was met in 2017. Since 2012, Guatemala has introduced modifications to the tax system, where there is evidence of considerable improvement in tax administration, but more structural reforms are needed to decrease informality and expand the tax base. Currently, about a quarter (24 per cent) of fiscal revenue comes from VAT on imports: an expanded internal tax base would reduce this level of dependency on external tax sources.

The relative appreciation of the national currency, the Quetzal (GTQ), of about 10% since 2014, has made exports relatively more expensive and imports cheaper. As illustrated in Figure 2, this did not affect the relative trade balance – which registered around a 20 per cent deficit in 2017 – but widened the trade deficit (around US\$ 6.1 billion in 2017, 12 per cent higher than in 2016). A rising GDP per capita set against a decreasing share of trade in GDP means that the Guatemalan economy has started to develop a domestic market and has the potential to improve internal consumption capacity.

FIGURE 2: Development and trade indicators, Guatemala



Source: UNCTAD secretariat calculations based on World Bank World Development Indicators data.

The United States of America is the country's largest goods trading partner, accounting for 36.2 per cent of exports and 38.8 per cent of imports. Central America (El Salvador, Honduras, Nicaragua and Costa Rica) represent the second most important trading partner, followed by Mexico, the European Union and Canada. Four out of the five main exports by value are agricultural products: clothing and apparel US\$ 581.9 million (12.4 per cent); sugar US\$ 383.4 million (8.2 per cent); coffee US\$ 379.9 million (8.1 per cent); banana US\$ 318.1 million (6.8 per cent) and cardamom US\$ 203.4 million (4.3 per cent) (Banguat 2018b). The trade deficit is largely financed by remittances from workers abroad (mostly in Mexico and the United States). Remittance inflows nearly doubled between 2010 and 2017, amounting to US\$ 8.2 billion (Banguat 2018a).

Over the past couple of decades, trade policy has led to the liberalisation of the financial, energy, and telecommunication sectors. The country lags significantly behind in energy production and is categorised as a net energy importer. According to the Ministry of Energy and Mining (MEM), out of total energy consumption for 2017, 56 per cent was firewood, followed by petroleum derivatives, accounting for 36 per cent, with the remaining 8 per cent corresponding to electricity. This low electrification and high dependency on wood for residential demand highlights not only the energy risks but also the extent of deforestation in the rural parts of the country. About one third of the country's surface area is forest; it is estimated that it is facing deforestation of 38,597 hectare a year (Regalado et al. 2012).

Guatemala has been a member of WTO since 1995 and, since 1985, a constitutional duty has been in place to promote domestic and foreign investment. Legislation prohibits discrimination and guarantees national treatment for foreign investors, regardless of their nationality. With few exceptions, the country's investment regime guarantees the free exercise of economic activities. This has created a favourable investment climate and the country is a net recipient of foreign direct investment – particularly from

Colombia (US\$ 160.2 million), Mexico (US\$ 204.1 million), the United States (US\$ 208.5 million), Peru (US\$ 81.6 million), Spain (US\$ 57.0 million) and Luxembourg (US\$ 55.7 million) in 2017 (Banguat 2017). However, an uncertain investment climate remains a main concern for foreign investors. Over the past two decades, the country has been in a relatively stable position despite low implementation capacity in public institutions and a fiscal deficit.

Despite the overall decrease in primary sector employment - from 18 per cent in 2000 to 12 per cent in 2006 - agriculture, forestry and fishing remain the most important rural activities. Agriculture is fundamental to the rural economy and its development and creates synergies with other sectors, enhancing their growth. According to FAO, about 70 per cent of Guatemalan land area is dedicated to agriculture and forestry (FAO 2014b). However, there are disparities in access to assets. An estimated 8 per cent of producers account for 92 per cent of the productive land (Sánchez, Scott, and López 2016), whereas the remaining holdings are on average less than 0.7 hectare in size and mostly directed to subsistence agriculture.

There is a need for structural transformation in Guatemalan agriculture due to a certain mismatch in the way it contributes to the country's development: although about three quarters of exports are agriculture-related, the country remains a net food importer, with several nutrition-related issues present. This transformation can be advanced through an enabling environment for the improvement of subsistence agriculture and for the inclusion of small-scale farmers in agricultural production chains, accompanied by the sustainable targeting of value-upgrading strategies in agricultural sectors.

TABLE 1: Agricultural plot characteristics, selected sectors

	Overall	Potato	Cardamom	Cocoa
Average plot size (hectare)	0.7	0.22	0.25	0.42
Estimated production area (hectare)	3 855 222	15 599	97 390	2 500

Source: UNCTAD secretariat estimations based on collected data.

Social development

The Guatemalan population growth rate has remained relatively stable at about 2.1 per cent since 1990, one of the highest in Latin America. The population is relatively young and has a low dependency ratio of 65 per cent - one third of Guatemalans are aged between 10 and 24 years, whereas only 5 per cent are aged 65 or older. The country is ethnically diverse: in 2014, 60.9 per cent of the population identified themselves as Ladino (mixed ancestry), while 38.5 per cent identified as indigenous, figures that have not changed dramatically since 2000. It is

important to highlight that the country is multi-ethnic and the indigenous population is not homogeneous. Most are of Mayan descent, out of which K'iche' represent 11.2 per cent of the overall population, Q'eqchi' 9.2 per cent, Kaqchikel 7 per cent, Mam 6.1 per cent and other Mayan 5 per cent.

World Bank data indicates that there is a rapid urbanisation process underway: the proportion of population living in the urban areas increased from 40 per cent in 1990 to about 52 per cent in 2017. This rapid urbanisation has implications for development and the economy, such as increased rural poverty and pollution, demand for higher food supply to urban areas, pressure on infrastructure and inequality. However, according to the 2014 Guatemala Living Standards Measurement Survey (ENCOVI), registered internal migration is relatively low - less than 3 per cent of the population. This may underestimate the cumulative values, seasonal work migration and unregistered workers. Approximately 8 per cent of Guatemalans live outside the country, most of them in the United States or Mexico, and send remittances back home.

Guatemala has one of the highest poverty rates in Latin America, with around 60 per cent of its population living below the national poverty line and some 23 per cent in extreme poverty. It ranks among the poorest economies by GDP per capita in Latin America (US\$ 4,471.0) and faces major obstacles to reducing poverty, one of which is increased climate variability. Overall, according to the US\$ 4 per day poverty line, the poverty rate increased from 55 per cent in 2000 to 60 per cent in 2014, which means that almost 10 million Guatemalans were living in poverty. This is a striking trend compared to the rest of Latin America, where there has been a significant reduction of poverty levels.

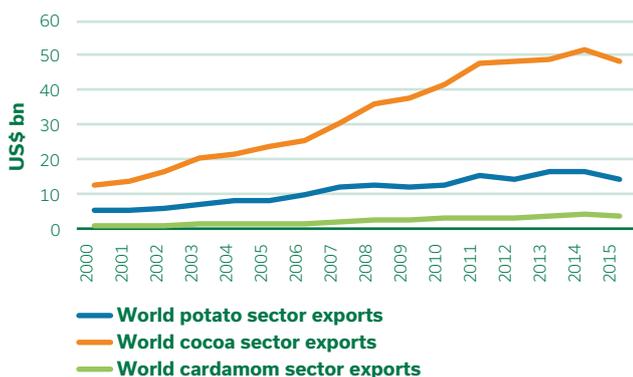
According to the World Bank, there is no rural to urban poverty migration but both areas suffer from worsening livelihoods over time and therefore face an increase in poverty rates. However, rural poverty is more prominent among indigenous people, with about 80 per cent living below the poverty line and about half in extremely poor conditions. The indigenous population is an overwhelming majority in three departments: Sololá (96.8 per cent), Totonicapán (93.6 per cent) and Alta Verapaz (93.5 per cent) where the percentage of poor people exceeds 70 per cent.

Income is not the sole measure of inequality: issues related to other basics such as food security, access to health, education and the overall standard of living should also be considered. Guatemala has the second lowest proportion of middle-class population in Latin America, surpassed only by Haiti. Between 1995 and 2015, the wages of workers steadily increased at a rate of 2.4 per cent while profits grew at nearly twice that rate, at 4.3 per cent. This lack of pass-through into wages may be representative of the complex, non-transparent ownership structures that potentially enhance inequality. Guatemalans still suffer from malnutrition, as household surveys (2010 and 2014) revealed that 53 per cent could not afford the basic food basket and up to three quarters could not acquire basic necessities for their household.

Trade in all three sectors has been growing internationally, as measured by export flows in Figure 3, with the cocoa sector being the most internationally traded of the three at US\$ 40 billion. At the same time, according to FAOstat, globally, potato production and the area planted are much higher than for cocoa – respectively 476 million tons (25 million hectare) compared to 4,5 million tons (10 million hectare) in 2016.

While potato is heavier and much more used locally – factors that contribute to potato's lower international trade despite its much higher production – its exports have tripled since 2000. International trade in the potato and cocoa sectors has been growing both extensively and intensively in recent years⁵, while the growth of the relatively smaller cardamom sector has been concentrated in core consumption markets. The unique climatic conditions where cardamom can be grown and the rise of international demand provide a stable environment for trade-led agricultural strategies in the cardamom sector.

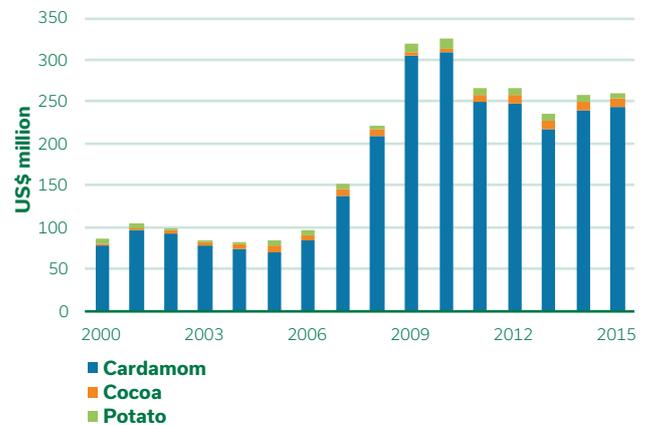
FIGURE 3: World sector-specific trends



Source: UNCTAD secretariat based on UN COMTRADE based on available data.

According to UN COMTRADE data (Figure 4), cardamom constitutes the biggest, in terms of value of exports, of the three sectors studied, which is in line with Guatemala's position as global leader. Creating an environment that bolsters both sustainable support and development of the cardamom production chain could maintain the country's global leader status. At the same time, its potato exports lag behind the world average – world trade has tripled since 2000, while Guatemalan exports grew by about 20 per cent, highlighting missed trade opportunities for the country's potato producers. The cocoa sector seemingly exhibits a contrasting trend with export growth of 600 per cent since 2000, compared to a world average of 42 per cent. However, export levels were extremely low in 2000 and, as discussed further in this report, Guatemala mostly exports low value-added cocoa products, which limits the ability to extract gain from cocoa production by the volume produced.

FIGURE 4: Guatemalan export trends (value, US\$ million)



Source: UNCTAD secretariat based on UN COMTRADE available data.

Agriculture has traditionally been one of the "primary" – low processed, extractive and quite often low value-added – sectors, while in recent years the trend has been to view it in conjunction with the food processing industry. This study follows this approach by attributing a different level of value-added to products derived from agricultural inputs. Table 3 depicts the value breakdown of the key products in the sectors studied and their corresponding Harmonized System (HS) 6-digit codes. It should be noted that this breakdown is based on considerations for this study and international trade, and final market information – the actual added value in certain cases – may vary due to pricing or quality.⁶

Gender issues

Labour segregation between women's and men's work in agriculture tends to be based on traditional social and cultural norms. Indeed, as in most of rural Latin America, women in rural Guatemala have a predominant role in the household and as a part of the subsistence farming unit. Women tend to be in charge of domestic work, children, small animals and some tasks related to plant cultivation; men more often work in the fields, make production-related decisions and attend associated meetings. Although financial decisions are traditionally in the hands of men as heads of the household, off-farm related activity, like selling the product in the market, is nevertheless considered to be a task for women. Additionally, many small-cultivation support activities are delegated to women.

The traditional role of women in the household not only undervalues them in terms of income generation but also limits possibilities for household income diversification. The well-known labour segregation between staple and cash crops, the former perceived as "female" crops, the latter as "male" crops (FAO 2011b), highlights the exclusion of women from the role of

primary income earner. This artificially and socially constructed division is not economically viable and creates within-household opportunities for income generation and diversification. The commercialisation of subsistence farming in a gender-sensitive way can improve and diversify the livelihood of rural households and enhance food security for farming families.

Labour segregation in small-scale farmer households and the lack of related, historical, detailed data together provide a very unclear picture of the current situation of women in agriculture in rural Guatemala. The various distinct characteristics of the country's gender labour segregation, as far as they relate to the sector-specific information required for this study, are discussed as part of the marketing structures detailed in the corresponding chapters.

The implications of the absence of a conspicuous gender-specific breakdown in functional tasks are twofold. It can indicate the

“unaccountancy” of female labour in the household, as there is no monetary value assigned to the task that women undertake, and underlines the potential of policy interventions in the sectors studied targeting any given production step to improve of the status of women.

The role of women in agriculture is not limited to their potential to provide better and more sustainable livelihoods. Subject to a more detailed discussion in Chapter 6, policies emphasising downstream value-addition and product-differentiation can yield gender redistributive outcomes. However, it should be noted that, in recent years, in particular with help from the United Nations Entity for Gender Equality and the Empowerment of Women (UN WOMEN), the World Food Programme (WFP), the Food and Agriculture Organization (FAO), the International Union for Conservation of Nature (IUCN) and Helvetas, there is evidence of the existence of some farmers' organisations mainly composed of women in the sectors studied in Guatemala.

TABLE 3: By-value sector breakdown for the study

	Potato	Cocoa	Cardamom
Raw / Semi-processed	Tubers dormant (060110); tubers in growth or in flower (060120); seed potatoes, fresh or chilled (070110); other potatoes (070190); potatoes uncooked or cooked, frozen (071010)	Cocoa beans (180100); cocoa shells, husks, skins (180200)	Cardamom flower (090831)
Intermediate	Potato flour meal and powder (110510); potato flakes, granules and pellets (110520); potato starch (110813)	Cocoa paste not defatted (180310); cocoa paste defatted (180320); cocoa butter, fat and oil (180400)	Cardamom powder (090832)
High value-added	Potatoes prepared or preserved other than by vinegar – e.g. potato chips (200410; 200520)	Cocoa powder not sweetened (180500); cocoa powder sweetened (180610); chocolate (180631; 180632); white chocolate (170490); other cocoa food preparations (180690)	Sugar confectionery (170490); tea and coffee (210120); essential oils (330129); chemicals (291219)

NOTES

¹ UNDP Human Development Indicators at <http://hdr.undp.org/en/countries/profiles/GTM>.

² UNDP Gender Development Index at <http://hdr.undp.org/en/content/gender-development-index-gdi>

³ See <https://www.tridge.com/intelligences/cardamom/export>.

⁴ “Companion planting in gardening and agriculture is the planting of different crops in proximity for any of a number of different reasons, including pest control, pollination, providing habitat for beneficial insects, maximizing use of space, and to otherwise increase crop productivity. Companion planting is a form of polyculture.” McClure, Susan (1994). Companion Planting. Rodale Press. ISBN 978-0-87596-616-8 and Wikipedia at https://en.wikipedia.org/wiki/Companion_planting.

⁵ This relates to more countries entering both the exporting and processing market in cocoa and potato, as well as new products traded in each sector.

⁶ Or, for example, in the case of Voluntary Sustainability Standards (VSS), due to the final consumer's perception of the social value of the product – further explained in Box 3.



CHAPTER 2



Potato Sector

Potato sector

The potato is native to Guatemala and it is estimated that over 36 varieties are grown there.⁷ The high-altitude range for potato farming (1500 to 3600 metres above sea level) and rapid cultivation cycle (90-150 days depending on the altitude) mean that potato production is spread throughout the country and constitutes the fifth most important temporary/annual crop by size of planted area – surpassed by white maize, beans, yellow maize and sesame (INE 2004). Based on information gathered for this report, three quarters of national production is concentrated in Quetzaltenango, San Marcos and Huehuetenango, providing permanent or semi-permanent employment to at least 70,897 families, of which two-thirds belong to indigenous ethnic groups. Nationally, about 88 per cent of rural families cultivate potatoes at least as a backyard crop, where every farmer decides his own time for planting and harvesting. The overall prevalent crop cultivation calendar for small-scale farming of potatoes by broad geographic region is presented in Table 2.

Currently there is a bi-modal trend for the types of potato cultivated: the native creole varieties produced mostly for domestic, local consumption, and varieties introduced from Peru and Mexico used for commercial production of higher value-added products. While the former varieties possess unique taste and consistency characteristics, they usually do not meet certain industrial standards and come in very diverse sizes and qualities, with half the yield of imported varieties. Additionally, it is estimated that only about 5 per cent of the area planted with potatoes uses certified seeds. These two factors mean that unique indigenous potato varieties serve mostly subsistence needs while imported (certified, semi-certified or non-certified) varieties are used in the processing of higher value-added products.

Overall, the Guatemalan potato yield is relatively low at about 25 tons per hectare per year, with a high risk of further decrease; whereas the world average is 35 tons per hectare rising to 80 tons in Europe and North America. The various factors contributing to the current situation include the emergence and/or persistence of diseases and pests, unavailability of irrigation, growing climatic vulnerability and loss of biodiversity. Another key factor contributing to the persistent low yield is the use of uncertified seed tubers. Specifying certified seeds increases the cost of agricultural inputs by about Guatemalan Quetzal (GTQ) 30,000 per hectare without a decrease in manual labour costs (in money equivalent) but improves the yield by about 40 per cent (to about 35 tons per hectare) and lowers the risk of pests and diseases.

Potatoes are a root vegetable that can potentially endanger biodiversity if not cultivated sustainably: not only are they in general a monoculture that cannot be easily intercropped but their cultivation also rapidly drains minerals and elements from the soil. Hence crop rotation is essential to achieving consistent or higher potato yields and constitutes part of the Global Good Agricultural Practices (Global GAP) for the sector. In Guatemala, potatoes are commonly rotated with maize at lower altitudes. There is no information available on whether the use of organic and non-organic fertilisers for potatoes is widespread.⁸

Uses and processing

The relatively short cultivation cycle and high climatic niche for potato cropping allows potatoes to be cultivated on the plateaus and highlands of the country throughout the year, providing fresh potatoes for subsistence consumption almost half of the year.

The low level of technological equipment available to farmers increases the preponderance of manual labour in potato production. This preponderance is much lower in farms with irrigation systems but these are available to only about a quarter. Due to the low level of irrigation (less than 10 per cent of potato fields are irrigated), potato farmers depend a lot on the rainy season and have two-to-three harvests per year depending on altitude.

After being harvested, potatoes are sorted into seed tubers, potatoes for own consumption and potatoes to be sold. For families in the regions studied, the breakdown is roughly 20-10-70 per cent respectively. Sorting is carried out ad hoc, usually with no rules, and most frequently at the family home. Interestingly, it is often undertaken by women.

Annex I details the product chain for potato worldwide, although in Guatemala small-scale farmers are engaged only in fresh potato production. Rising population and internal migration in the country contribute to the growing internal demand both for fresh potatoes and for more processed potato products. To serve the internal market for higher value-added products, the large enterprises work with their own imported potato varieties (e.g. Frito-Lay) or on leased plantations.

Even though the potato sector offers product diversification opportunities, production and export of fresh potatoes is deadlocked. This is the result of existing long-standing, low-value product market links, rising populations in the ultimate export markets, the high cost of processing equipment and the heterogenous quality and characteristics of the initial agricultural inputs (i.e. fresh potatoes) that cannot meet industrial demands (see box 1 for further detail). Due to the presence of different varieties and the absence of a common standard for either agricultural practices or for products, there are insufficient agricultural inputs for processing potatoes into more value-added products.

Nationwide, only about 5 per cent of the potato harvest is processed and constitutes the input to artisanal potato chips produced by Alimentos C&P, Industrias Rick's, S.A. operating

through supply agreements with several farmers' groups in the Western Altiplano, and by Frito Lay, operating nationwide through contract farming with a number of large-scale producers. These contracts set very specific product standards developed for their own purposes.

As illustrated in Annex II, the potato sector has a variety of uses in secondary processing, primary processing being fresh potatoes. Fresh potato tubers can be frozen, transported to other areas or preserved for a later time. Or they can be processed for production of potato flour and used in the production of various foods and drinks. Potato flour is gluten-free and rich in protein and has, in recent years, become a trend in developed countries. It has also been used as an additive to protein mixes in some countries to help in the fight against malnutrition.

Box 1: Harmonisation of potato sector efforts

The *Ministerio de Agricultura, Ganadería y Alimentación (MAGA)* is responsible for potato seed certification, mainly as a quality control mechanism to verify that all seed potatoes comply with the prescribed genetic, physical, physiological and sanitary characteristics. However, there is a widespread practice of using non-certified potato seeds, which undermines quality and productivity. Despite the challenges posed by such practice, there are ongoing efforts focusing on the possibilities for homogenising potatoes cultivated in Guatemala.

MAGA operates as the Guatemalan seed authority through the administration of the National Seed Certification Service. The latter was instituted in 1961 by means of Government Decree. The specific mandate of MAGA involves regulation for seed production, certification, commercialisation, supervision and the coordination of efforts with other entities for the conservation of plant genetic resources. Its functions comprise the organisation of a production system for private entities, promotion of quality seed use, processing and production control, quality analysis, seed trade audits, registry of varieties, and seed import control. The process of seed certification for potatoes is based on the general "Seed certification procedure manual". Every seed variety released for agricultural use by a research centre (public or private) must be previously tested for purity, vigour and germination.

Independent from MAGA, the Science and Technology National Institute (ICTA) has contributed to national agricultural development through the generation and promotion of technology since 1973. Regarding potato seeds, ICTA has developed a three-stage methodology for the production of improved seed varieties. The techniques introduced have allowed for the elimination of viruses, conservation of potato varieties and exchange of germplasm. Technical expertise has been disseminated through leaflets, such as leaflet No. 26 on "Storage of seed potatoes".

A harmonisation initiative, funded by the government of the United States, is underway to strengthen institutional capacities related to agricultural research in Guatemala. The programme is titled "Regional Consortia for Agricultural Research (CRIA)" and is being carried out by the Inter-American Institute for Cooperation on Agriculture (IICA) along with MAGA. The main objective is to integrate actions undertaken separately by MAGA, ICTA, and regional university research centres in order to shape them into becoming effective leaders in national economic development and reliable partners for international cooperation.

Additionally, remarkable efforts have been undertaken in the private sector by producers' organisations such as the National Federation of the Potato (FENAPAPA). This association is conducting field research on the adaptation of new potato varieties to agroclimatic conditions in the Altiplano Occidental region. Based on market requirements expressed by the United States Potato Board, FENAPAPA is evaluating potato varieties to develop local industries for potato processing aimed at export markets in the United States. The organisation has also established an agreement with the French company GERMICOPA for the introduction and evaluation of modern materials under the conditions in the western highlands.

Marketing structure

Being a traditional staple food, potatoes are grown in one way or another by almost 90 per cent of rural or semi-urban farmers. It is a common backyard activity, while a large proportion of families have separate plots for potato planting. These plots of 0.16 to 0.25 hectare on average are often side by side and together form a joint, bigger field. Most potato farmers live within walking distance of the potato field and in general only have basic education allowing them to read and write.

Potato farming in rural Guatemala is higher in places with higher levels of poverty. There are a number of farmers' associations but even in the prioritised departments they amount to less than 10 per cent of potato farming families⁹. Hired labour is not common among potato-growing families and they overwhelmingly have a family approach to agriculture, using the labour of all household members at different stages of production.

Potato farmers in general plant other vegetables on other sides of their plot, most commonly broccoli, Brussels sprouts, French bean, sweet peas or Chinese peas. Despite the market for these vegetables being relatively small, highly fragmented and dispersed, in recent years there is some evidence of successful experiences in sub-contracting small-scale farmers for their surplus harvest. These contracts – apart from price and volume – regulate the seasonality of the harvest (specifying dates for planting and harvesting), the varieties planted, and practices to be followed. There is limited evidence on the existence and success of such schemes for the potato sector.

There are a number of farmers' associations and NGOs that concentrate on providing technical and management assistance to farmers. So far, these activities have had a strictly private character. Whereas MAGA, for its part, is currently working on strengthening the extension services system and promoting its plan "Family Agriculture Programme to Strengthen Rural Economy (PAFFEC)" to promote integral and sustainable rural development. At the moment, there are also centralised multi-stakeholder efforts in Huehuetenango coordinated by the Asociación de Organizaciones de Los Cuchumatanes (ASOCUCH) on value-chain actor integration aimed at value-upgrading in the local potato sector.

Potato farmers sell their potatoes to local intermediaries who either sell them at the municipal level to retail chains or collect and transport them to bigger regional intermediaries, who then ship them to El Salvador. The absence of a proper infrastructure system in most rural areas limits the ability of farmers to reach intermediaries.

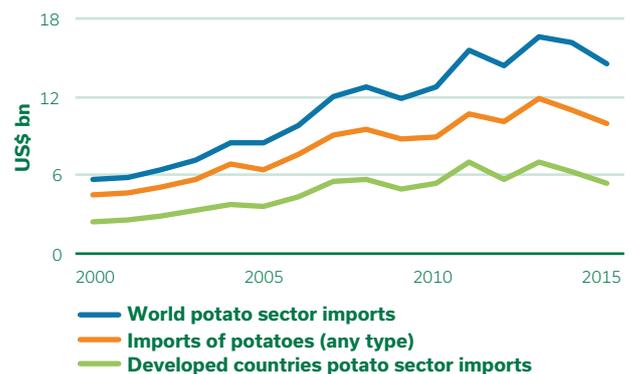
Women in Guatemala participate actively in potato cultivation: among the households surveyed in the priority municipalities, about half of the producers were women, and some of them

were officially registered participants in farmers' groups and cooperatives. It was further noted that, overall, women are more likely to be put in charge of pre- and post-harvest support activities such as seed tuber cutting and preparation (for sowing), ridging soil and harvest sorting for seed tubers, tubers to be consumed in the household and tubers to be sold. The interviews suggest that it is likely that the absence of specifically female-led activities may by virtue be the result of a long-standing family tradition among small-scale farmers cultivating potatoes in Guatemala.

Market access in global and regional trade

The growing world potato trade is due mainly to two factors: a growing proportion of the urban population demanding more potato products and an increasing demand overall for a variety of high value-added potato-sector products, both for consumption and industrial processing (FAO 2008). While potato cultivation is traditionally viewed as a developing country activity, developed countries are importing more and more potatoes, consuming about one third of total world potato imports – as illustrated in Figure 5. Some developed countries¹⁰ have managed to achieve a four-times higher yield per hectare than the world average. As for low value-added potato products – fresh and frozen potatoes – most world imports are directed to the developing countries (70 per cent in 2015, not shown in figure).

FIGURE 5: World imports of potatoes



Source: UNCTAD secretariat based on UN COMTRADE.

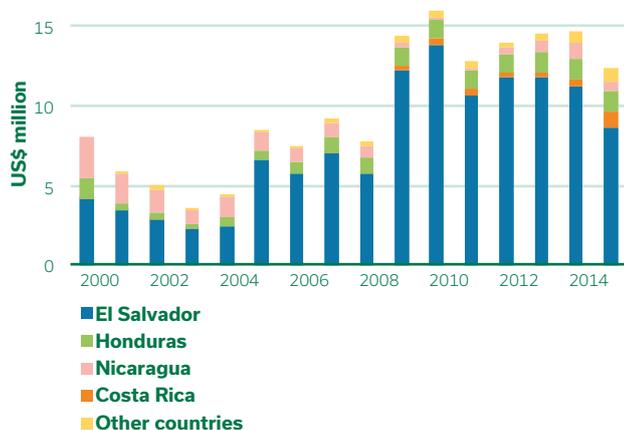


FIGURE 6: Potato sector trade balance

Source: UNCTAD secretariat based on UN COMTRADE.

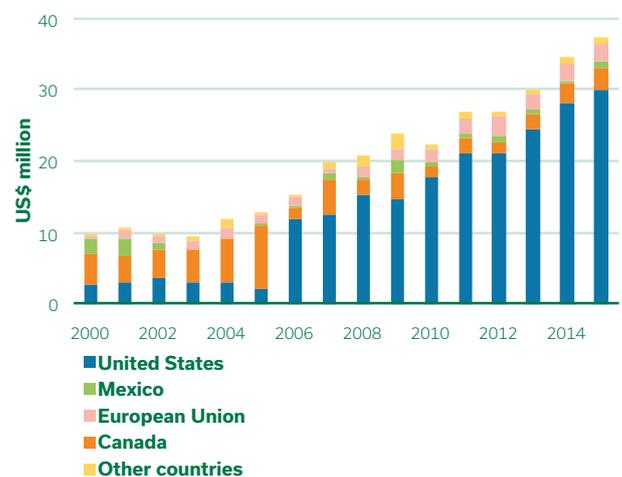
Guatemalan potatoes are destined for domestic and regional consumption only, in part due to the bulkiness of the low value-added product and absence of proper documentation to export to other, more regulated markets such as the United States or Canada. Currently, from highland small-scale farms, the product makes its way to domestic or – mostly – Salvadorian markets. The sector generally produces fresh potatoes for consumption, which represent the low value-added, almost unprocessed product. The lack of homogeneity of potatoes grown in Guatemala is an impediment to the domestic processing of higher value-added potato products, which increases potato imports into the country for processing.

The Guatemalan potato sector does not satisfy absolute demand within the country, either for fresh or frozen potatoes or for higher value-added potato products. Thus, potatoes and potato products are imported, as shown in Figures 6 and 8: Potato sector trade balance; however, while the volume of exports is consistently higher than imports, their value is negative and decreasing. Together, these factors indicate a decrease in the capacity of the country's potato sector to serve rising internal demand.

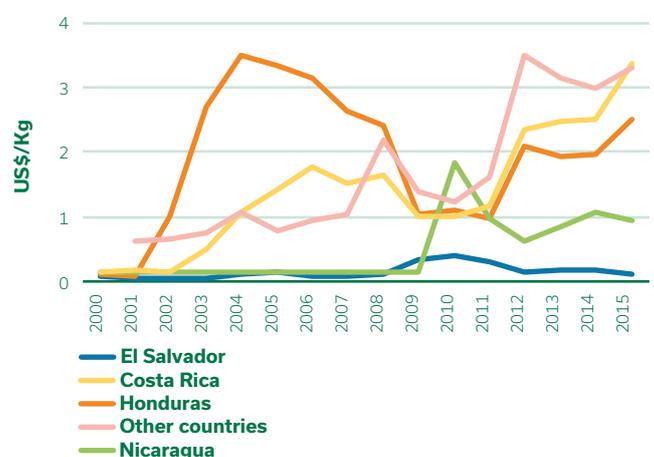
FIGURE 7: Guatemalan potato exports, by destination

Source: UNCTAD secretariat based on UN COMTRADE.

Figure 7 and Figure 9 present correspondingly the breakdown by destination of export unit value and relative price. Potato sector exports are highly concentrated on the El Salvadorian market, but with the lowest price per kilogram of export value. This means that potato sector exporters sell products at raw or near-raw state and, with minimal accompanying certification (relating to general requirements on tracing and tests), mostly to the El Salvadorian market; the products with a higher relative price – and higher level of certification – are being exported to other destinations, but in much lower quantities/values. Thus, the Guatemalan potato sector would benefit from the introduction of a national certification standard against which to measure relative quality.

FIGURE 8: Guatemalan potato imports

Source: UNCTAD secretariat based on UN COMTRADE.

FIGURE 9: Export unit value of Guatemalan potato exports, by destination

Source: UNCTAD secretariat based on UN COMTRADE.

Market access for Guatemalan potato products benefits from a number of Regional Trade Agreements (RTAs) that the country is part of and from the General System of Preferences applied by specific countries. Table 4 shows the duties applied to potato products from Guatemala before the tariff reduction in various trade agreements in force with some of its main trading partners. With the exception of the Free Trade Agreement signed with Mexico, these agreements include progressive elimination of duties (base rate, per cent) for medium value-added agricultural products. As illustrated in Table 5, ad-valorem duty free is already in force for most of the countries and, from 2021, following progressive reduction of tariffs on exports to the Taiwan Province of China, will be in force in all the RTAs Guatemala is a party to.

It should be noted that tariff escalation in the potato sector is observed in countries that produce and process potatoes themselves, even among RTA partners. In this regard, Colombia, Mexico and Chile are examples of countries with high production capacity in the potato sector and a large internal market for high value-added potato products. In each of these countries, tariffs for higher value-added potato products are greater than for lower- and medium-value products. The examples of Canada and Mexico (Applied ad valorem (per cent) or specific tariff) illustrate that the effective rates applied to imports of Guatemalan potatoes are relatively higher for the non-low value-added products.

Agricultural exports also tend to face several non-tariff measures that impede trade flows from developing countries. Guatemalan potato exports encounter technical regulations and sanitary and phytosanitary measures that relate to certain non-price characteristics. The specific requirements for potato imports are set mainly in domestic regulations or international standards and vary by destination. International standards are quite commonly "looser" than national-specific – "tighter" – regulations. Both the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) and the WTO Agreement on Technical Barriers to Trade (TBT) provide the basic rules for state intervention as it relates to international trade in goods.

The SPS Agreement addresses the appropriate application of food safety, animal health and plant protection measures, issues directly related to international agricultural trade, and compliance is a fundamental requirement for the export of agricultural produce. The agreement promotes harmonisation of sanitary and phytosanitary measures aligned to international standards, guidelines and recommendations formulated by relevant international organisations, such as the Codex Alimentarius Commission, the International Standardization Organization (ISO) and other organisations operating within the framework of the International Plant Protection Convention (IPPC). However, each country has the right to decide unilaterally its appropriate level of protection, subject to adopting only measures necessary to achieve specified objectives, and that are consistent and apply in a non-discriminatory manner, thereby minimising negative trade impacts.

The TBT Agreement sets the framework for the preparation, adoption and application of unilateral measures, notably technical regulations, standards or conformity standards. It asks for state interventions not based on international standards to be applied only when necessary. Their implementation should be non-discriminatory, least trade restrictive and based on the available science, whenever effective and appropriate. The agreement can be viewed as a means of avoiding state interventions so as not to impose disproportionate costs on international trade.

For example, all fresh potatoes imported into Canada, Mexico and the United States must undergo customs and phytosanitary inspections and be certified to meet certain requirements, which are nation-specific. The potatoes have to go through an inspection procedure in accordance with the applicable general tolerances. Notably, signatory countries to the North American Free Trade Agreement (NAFTA) have been implementing a Resource System Planning Model to reduce phytosanitary risk associated with the movement of potatoes into their common territories. This model generated a regional (NAFTA) standard titled "Movement of potatoes into a NAPPO member country" with the IPPC standard ISPM 33 "Pest free potato (*Solanum* spp.) micro propagative material and mini tubers for international trade". This process, while ongoing, is indicative of a trend through which issues related to potato-product certification and certification compliance, with either international, regional or national systems, are becoming key elements in successful potato exporting.

Compliance with the Non-Tariff Measures (NTMs) described above implies costly processes to be undertaken by public institutions and other stakeholders in the potato value chain. In Guatemala, there have been a number of initiatives using a similar approach, notably the creation of a Regional Sanitary and Phytosanitary International Organization (OIRSA). OIRSA adopted Sanitary and Phytosanitary legislation; created a Potato Value Chain Committee to tackle seed-quality deficiencies and promote the production, storage and use of certified potato seeds; developed and is implementing a system of agricultural extension services; and implemented a National Quality System and corresponding Guatemalan Standardization Commission. However, the food control system must be assessed in terms of infrastructure, equipment, systems development, personnel recruitment and training, technical assistance capacities, coordination systems and inspection capacity.

Table 4 summarises the most crucial measures adopted by Canada, the United States and Mexico for the import of potatoes. The compliance costs of certification for potato producers and traders are explained in a separate box (see box 2 at end of chapter).

TABLE 4: Key TBT and SPS applicable to potato sector in NAFTA countries

	Canada	United States	Mexico
Technical regulations	<p>The Fresh Fruit and Vegetable Regulations comprise the mandatory rules that every product, either imported or produced locally, supplied fresh to the consumer or for food processing, shall observe.</p> <p>The Consumer Packaging and Labelling Act establishes the requirements for the standardisation of containers, the rules on packaging, the allowed and prohibited representations, declarations and advertisements; all matters relating to price marking, date and storage marking and the size and shape of containers for pre-packaged products.</p> <p>According to the Food and Drugs Act, food imports shall comply with the prescribed standards and be labelled accordingly. When imported into Canada, fresh potatoes shall meet the applicable standard for each type and size: Canada No. 1, Canada No. 1 Small (TM), Canada No. 1 Creamer (TM), Canada No. 1 Chef or Canada No. 1 Large.</p>	<p>The Food and Drug Administration regulates the safety of substances added to food, as well as processing, packaging and labelling of all foods.</p> <p>Food Contact Substances details food packaging and food additives.</p> <p>All fresh articles must be packed in insect-proof packaging that has been pre-approved by the Animal and Plant Health Inspections Service (APHIS) of the United States Department of Agriculture.</p>	<p>Official rule NOM-050-SCFI-2004 comprises a set of rules on the labelling of products destined for consumers in Mexico, regardless of their origin.</p> <p>NOM-008-SCFI-2002 defines the symbols and rules of writing for measure units which must be used by all industries.</p> <p>The agreement establishing risk mitigation measures for the import of potato tubers into Mexico comprises requirements of weight and labelling for fresh potato imports for consumption.</p>
Sanitary and phytosanitary requirements	<p>The Plant Protection Act comprises regulations for the control of pests, including restriction on the import of anything that is or could be infested with a pest or that could constitute a biological obstacle to the control of a pest. It also sets the guidelines to be observed by the Canadian Food Inspection Agency when conducting inspections on imports.</p> <p>Plant Protection Regulations establish the import requirements for eradicating and preventing the spread of pests, including that the phytosanitary status of imports must be certified by the government of the country of origin of the product through a foreign Phytosanitary Certificate based on IPPC's model phytosanitary certificate approved by FAO (IPPC 1997).</p> <p>Various Policy directives: D-97-04 guides importers on how to apply for the required Permit to Import for regulated commodities, including potatoes; D-98-01 governs the import of field-grown seed potatoes, true seed, and potato plant parts for propagation in Canada; D-99-06 comprises the procedure for the issue of phytosanitary certificates; D-12-02 sets the plant protection import requirements for potentially injurious organisms from all origins which may be harmful to plants.</p>	<p>The Code of Federal Regulations comprises all regulations of federal agencies, including phytosanitary treatments, plant health inspections, foreign quarantine notices, import of seeds, and others.</p> <p>The USDA APHIS website displays Fruit and Vegetable Import Requirements for all products from all origins allowed into the US.</p> <p>The United States classifies potatoes as Not Authorized Pending Pest Risk Analysis (NAPPRA). Importers must submit a request in accordance with the Code of Federal Regulations. APHIS will then develop a Pest Risk Analysis to determine whether import should be allowed or not. The procedure may take several years. Potato tubers, for example, may be imported into the United States only from Australia, Canada, Dominican Republic, Japan, Liberia, Mexico, New Zealand, Philippines, the Republic of Korea, and Sierra Leone.</p>	<p>The Plant Health Federal Law provides the legal framework for the application, implementation and certification of risk reduction systems regarding the physical, chemical and microbiological contamination in the primary production of vegetables.</p> <p>The "Agreement to establish the phytosanitary requirements module for the import of regulated products into the national territory by the Secretariat of Agriculture, Livestock, Rural Development, Fish and Food, regarding Plant Health" sets an online transparency mechanism called "Phytosanitary Requirements for Imports Consultation Module". This database provides information on all phytosanitary measures implemented to reduce the risks associated with the import of plants and agricultural commodities.</p> <p>The "Agreement establishing risk mitigation measures for the import of potato tubers into Mexico" introduced a series of specific phytosanitary measures for the potato sector including the use of certified seeds, the application of germination inhibitor, and inspection proceedings.</p>

Source: UNCTAD secretariat, based on information from the Animal and Plant Health Inspection Service, United States Department of Agriculture (United States), Canada Justice Laws Website (Canada), Unidad General de Asuntos Jurídicos, Secretaría de Gobernación (Mexico).

TABLE 5: Tariff structure for Guatemalan potato sector exports

Type of potato products (as per report)	HS6	European Union (in force since 01.12.2013)		Mexico* (in force since 01.09.2013)		Colombia (in force since 13.11.2013)		Taiwan Province of China (in force since 01.07.2006)	
		Base rate (%)	Ad valorem duty-free from	Base rate (%)	Applied ad valorem (%) or specific tariff	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from
Low value-added	060110	5.1	01.12.13	MFN	Exempt	0	13.11.09	Free	01.07.06
	060120	6.4	01.12.13	MFN	10	0	13.11.09	Free	01.07.06
	070110	4.5	01.12.13	MFN	Exempt	0	13.11.09	Free	01.07.06
	070190	-	-	MFN	75	Exempt		20	Exempt
	071010	14.4	01.12.13	MFN	15	15	01.01.19	15	01.01.21
Medium value-added	110510	12.2	01.12.13	MFN	10	20	13.11.09	10	01.01.16
	110520	12.2	01.12.13	MFN	10	20	13.11.09	10	01.01.16
	110813	-	-	MFN	10	20	01.01.15	10	01.01.16
High value-added	200410	14.4; 7.6; 17.6	01.12.13	MFN	20	Exempt		12.5; 18	01.01.21
	200520	8.8; 14.1	01.12.13	MFN	20	Exempt		12.5; 15; 18	01.01.16; 01.01.21

Source: UNCTAD secretariat, based on the information from Foreign Trade Information System (FITS) of the Organization of American States.

(*) Mexico tariff lines on potato products are not specifically mentioned in the FTA, and can be included in further rounds of negotiations.

DR-CAFTA (in force since 01.07.2006)		Panama (in force since 20.06.2009)		Chile (in force since 23.03.2010)		Dominican Republic (in force since 15.10.2001)		Canada GSP (created in 1974)
Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Applied ad valorem (%) or specific tariff
3.5	01.07.06	0	20.06.09	-	-	MFN (14.08.98)	15.10.01	Free; 5
1.4	01.07.06	0	20.06.09	-	-	MFN (14.08.98)	15.10.01	Free; 5
0	01.07.06	0	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	US\$ 4.94//kg
0	01.07.06	Exempt		Exempt		MFN (14.08.98)	15.10.01	US\$ 4.94/kg
14	01.07.06	30	01.01.18	Exempt		MFN (14.08.98)	15.10.01	Free
0	01.07.06	0	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	Free
0	01.07.06	15	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	Free
0	01.07.06	15	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	5
6.4; 8	01.07.06	20	01.01.18	Exempt		MFN (14.08.98)	15.10.01	6
6.4	01.07.06	15; 54	20.06.09	-	-	MFN (14.08.98)	15.10.01	6

NOTES

⁷ The International Potato Center has reported that "there are over 4,000 edible varieties of potato, mostly found in the Andes of South America." Estimations for Guatemala are based on UNCTAD interviews to farmers in 2017/2018. See https://cipotato.org/potato_variety/.

⁸ All fertilisers are registered at the Department of Registration of Agricultural inputs following the Government Decree 5-2010 "Law of Registration of Agrochemicals", but there is no regulation of their limits/uses.

⁹ Notably, about one third (38.3 per cent) of registered potato producers in the departments of interest are women. There is anecdotal evidence of female potato-farmers' groups, but that is still an exception. As potato farming is a traditionally male activity, in such a male-dominated culture it most likely indicates high dependency on potato farming among female-headed households.

¹⁰ For example, the Netherlands, Germany.

Box 2: Potato certification compliance costs

It is impossible to cover all possible voluntary sustainability standard (VSS) systems applicable to potato producers, traders and producer organisations due to the complexity of the voluntary codes of practice. The costs of certification may vary depending on plot-size, number of crops, crop yield and other considerations. The following table lists key VSS applicable to the potato agricultural value chain and the monetary costs related to the certification process. Fees were calculated based on either a small plantation owned by a single farmer or a producer organisation of maximum 25 members covering up to 1 hectare of land per producer.

Organisation	Standards	Description	Applicable to	Certification cost	
				Application fee and first year	Annual fee
Fairtrade Certification	Fairtrade Standard for Vegetables	This standard applies to all Fairtrade vegetable producers and all companies that buy and sell Fairtrade vegetables	Producer Organisations Traders	EUR 2,100	EUR 1,200
	Fairtrade Standard for Small Producer Organisations	The requirements in this Standard apply to small producers that are part of organisations with formalised structures of management. The requirements acknowledge these internal structures and expect you to find the best means to guarantee your members' continuous compliance.	Producer Organisations	EUR 2,100	EUR 1,200
	Fairtrade Trader Standard	The main goal is to allow traders to commit to supporting Fairtrade to benefit disadvantaged small producers and workers and increasing their access to markets.	Traders	EUR 3,300	EUR 2,800
International Federation of Organic Agricultural Movements (IFOAM)	IFOAM Standard for Organic Production and Processing	Covers the areas of general organic management, crop production (including plant breeding), animal production (including beekeeping), aquaculture, wild collection, processing and handling, labelling, and social justice.	Producers and processors organisations with fewer than 1,000 farmers	EUR 2,500	EUR 250
Global G.A.P.	Integrated Farm Assurance (IFA) and Approved Modified Checklists (AMCs)	Covers Good Agricultural Practices for agriculture, aquaculture, livestock and horticulture production. It also covers additional aspects of the food production and supply chain such as Chain of Custody and Compound Feed Manufacturing.	Single producer Producer Organisations (+EUR 1 per producer member)	EUR 35.60 EUR 140.60	EUR 35.60 EUR 140.60
	Harmonized Produce Safety Standard (HPSS)	Serves the needs of the United States fruit and vegetable producers, and those selling into the United States market.	Single producer Producer Organisations (+EUR 1 per producer member)	EUR 35.60 EUR 140.60	EUR 35.60 EUR 140.60
	Crops for Processing	Covers crops that are slated to be frozen, juiced, used to make pre-cooked meals, and used for animal feed, among other types of processing.	Single producer Producer Organisations (+EUR 1 per producer member)	EUR 46.20 EUR 151.20	EUR 46.20 EUR 151.20
	Sustainable Agriculture Certification	This standard is used to certify farms and producer groups involved in crop production.	Producers Producer Organisations	Fees depend on the certification body	Fees depend on the certification body





CHAPTER 3



Cocoa sector

Cocoa sector

Cocoa grows between 200 and 900 metres above sea level, in mild, humid climates (1500-3000mm per year) with temperatures between 21 and 26 degrees Celsius. It is shaded by other, taller trees to limit the damage to the cocoa tree from direct sun rays. Cocoa trees can grow both on flat lands and moderate slopes, up to an inclination of 16 degrees, making them widespread throughout Guatemala. Depending on the type of tree nursery used, cocoa trees bear cocoa pods two to three years after being planted and produce cocoa for up to 15 years.

Guatemala is a secondary origin country for cocoa, where it has been grown for thousands of years. This has created a diverse genetic pool of local native varieties with their own unique taste and flavours that vary by region, altitude and climatic conditions.¹¹ There is no official, comprehensive organoleptic map, which hinders collection of precise data, but based on interviews, the potential area for cocoa cultivation is thought could be near 160000 hectares (roughly 5 per cent of forest-covered Guatemala). However, this study's estimates show that an area as low as 3 per cent was cultivated in 2015 – a figure that may highly underrate the actual cultivation area due to a high level of subsistence, backyard farming, as cocoa trees can grow without high maintenance and with almost no weeding and pruning.

However, this practice decreases the yield and the quality of the seeds produced: for consistent, commercially-acceptable cocoa, there is a need for at least minimal selection and consistent rules of harvest management and post-harvest management. Among the vast local genetic material, three varieties are the most common – Creole, Stranger and Trinitarian. No national statistics are yet available on the actual distribution among these varieties of cocoa planted for subsistence or commercialisation.

Due to the improved global cocoa market and increasing demand for original cocoa flavours, a number of efforts have been undertaken in Guatemala in recent years. While historically there were experimental agricultural stations in Los Brillantes (Santa Cruz Mulua, Retalhuleu) and Navajoa (Morales, Izabal) working on local varieties, these closed in the 1990s. Since that time, the improved global situation and high agronomic potential of Guatemalan cocoa have led to the creation of the 'Grupo de Trabajo de la Agrocadena del Cacao' in MAGA, which devised a multi-stakeholder 'Strategic Plan for the Agrocadena del Cacao de Guatemala 2016-2025'.

The Plan is structured around four themes: improvement of productivity, strengthening procedures to generate added value, promoting organisational development for competitiveness, and market access. In the Plan quality is defined as a priority so as to gradually be able to meet the demands of both national and international markets. Increasing productivity will allow a reduction in cocoa imports for the domestic processing industries. Improving the value chain directly involves strengthening primary and secondary transformation in the agro-industry and implementing a traceability system. Promoting organisational development involves capacity-building, public-private partnerships and access to credit, as well as promoting inclusiveness in all corporate governance structures associated with the 'Agrocadena del Cacao'. As implementation progresses, the plan aims at increasing Guatemala's share in the international market while developing sustainable agroforestry systems that reduce the country's carbon footprint.

The 'Agrocadena del Cacao' working group has been developing a code of agricultural practices based on local experience and assistance from various international actors, thus enhancing cooperation between small-scale farmers' groups and the private sector. Their work has had a positive effect on the quality and quantity of the product, on the decrease of the spread of cocoa diseases and on a reduction in harmful practices.

There is currently no national scheme for cocoa tree certification and several initiatives among local farmers' groups and associations have emerged aimed at local plant selection and cultivation for commercial purposes. There are twelve nurseries identified in the prioritised municipalities created and used by the small-scale farmers' organisations. This internal process of cocoa selection highlights the need for higher clarity in what types of cocoa are in demand commercially.

Cocoa trees can grow well on their own but the fact that fertilisers can increase the number of cocoa pods per tree by up to 100 percent provides an incentive to use them. While there are some private sector practices on certifying the fertilisers used as organic, there are no common guidelines on types and techniques, and farmers follow their own practices. Apart from the possibility of bringing about soil degradation over time, use of different fertilisers can lead to different flavours of the cocoa bean.

In the municipalities studied, it was found that the yield per hectare is almost half (156 kg/hectare) the national average of 276 kg/hectare. This coincides with the fact that the smaller the cocoa producer's plot, the lower the level of technology used, and the lower attention the plant receives, resulting in a decrease in yield. The lack of care of cocoa trees among small-scale farmers is a major obstacle to increasing both the quality and quantity of cocoa produced. Since the setting up of the cocoa working groups, programmes have been implemented aimed at improving the attention paid to cocoa trees. One common and successful technique for ameliorating the harvest is intercropping cocoa with other cash crops or using trees that can be commercialised (such as timber or fruit trees for example) as cocoa shade. While this requires long-term investment, it has the potential to increase the attention paid to cocoa trees, increase yield, and diversify the income of farming households, thereby improving their livelihood.

Uses and processing

Although not part of a basic human diet, cocoa is profoundly ingrained in Guatemalan food culture. It is hard to estimate the volume of backyard-farmed cocoa produced and consumed domestically as a cocoa drink, but such subsistence production illustrates the deeply-rooted tradition of cocoa farming in rural parts of the country and the abundance and varieties of cocoa. The Agricultural Census 2014 registered a harvest of 2408 tons annually from 14,301 trees in the 1096 hectares cultivated with cocoa in the departments prioritised. It should be noted that this number could be inaccurate due to the proliferation of backyard-farmed cocoa.

After gathering, cocoa beans have to be fermented – which can be carried out by smallholder farmers – before being dried. Both fermentation and drying can affect the flavour of the bean so all farmers have to follow similar procedures to obtain a similar taste.



As outlined further on, Guatemala currently exports cocoa beans and cocoa butter while importing high value-added products. Annex 1 provides a detailed map of the stages in the cocoa sector production chain. The most commercially sound product of the country's cocoa sector is cocoa nibs.¹² The market for higher value-added cocoa products is limited to a number of artisanal local stores and chocolate boutiques in the large cities of Guatemala and Guatemala Antigua, where there are the highest concentration of tourists. To expand beyond these few outlets for cocoa products from small-scale farmers, the selection of certain types of cocoa cultivated in the appropriate volumes for processing and procedures for fermenting and drying should be envisaged.

On one hand, the diversity of varieties of cocoa complicates its commercialisation: this requires a sufficient quantity of dried cocoa beans of similar taste and flavour, especially for higher



value-added production. On the other hand, the high diversity of tastes can be a plus for "niche" market players such as boutique chocolatiers and luxury chocolate brands, which are not looking for bulk quantities but rather for limited amounts of unique cocoa with unique flavours. An example is Cacao Verapaz, which links fine cocoa smallholder farmer associations in Guatemala with specialty chocolate makers in the United States, such as Lake Champlain Chocolates, with a focus on exporting the best cocoa beans produced by Maya farmers (Cacao Verapaz 2018). Nevertheless, even these high-end market players require certain quantities of homogenous cocoa beans.

Small-scale farmers cocoa production is also being challenged by other agricultural products, such as sugar cane, rubber, coffee, African palm, and mango for increasing prices and/or demand. This creates further scattering and dispersion of cocoa production. However, these challenges can be overcome through integration into an Association such as the Association of Exporters from Guatemala (AGEXPORT) which is a positive step towards reaching global markets with their cocoa products.

Box 3: Cocoa certification

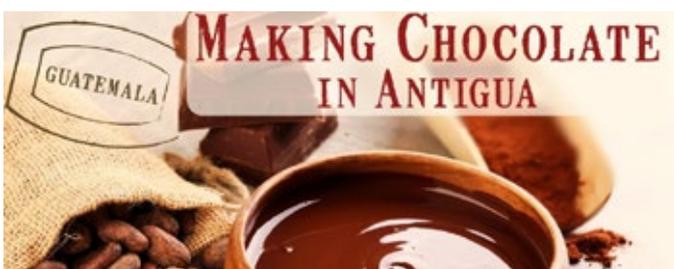
The cocoa trade, like any other food or food-related trade, is subject to a variety of government measures: tariffs, regulatory requirements, or sanitary and phytosanitary measures aimed at the protection of human, animal or plant life or health from certain specified risks. Special attention is paid to the latter measures in food or food-related trade at national and international level because of food-borne risks, pests and diseases. However, none of them are specifically directed towards preventing biodiversity losses due to pollution, soil degradation or land conversion.

In contrast, voluntary sustainability standard (VSS) systems - of which there are various types - generally use a similar, non-governmental innovative approach to promoting sustainable production and business practices, driven by the appeal to final consumers. The aim is to differentiate and drive sustainable production and consumption by increasing market demand. At the core is a standard that defines "good" - or specific - social and environmental practices or performance. However, a standard by itself is not enough to drive change. Thus, each system integrates five fundamental components: standards, assurance, labels and claims, traceability, and capacity building:

- Standards specify requirements for a product or process that producers, traders or retailers must meet in relation to sustainability indicators;
- Producers are assessed to determine whether they comply. Generally, compliance is measured through independent, third-party audits leading to certification;
- Most standard-setting entities provide a label or claim on the product packaging appealing to buyers and consumers. For example, Fairtrade-certified chocolate;
- Traceability systems trace products from where they were produced, through the whole supply chain to the final product to provide proof of origin;
- Capacity building is not always provided directly by standard-setting organisations although some provide capacity-building services through partner firms to help producers, operators, or enterprises achieve compliance.

Although, VSS systems can deliver positive economic, social and environmental benefits to small-scale farmers, the high costs of certification and compliance can easily result in a prohibitive increase in production costs. As their use becomes increasingly popular in international trade, particularly in niche/boutique markets, there is concern that they will end up functioning as disguised protectionist barriers. However, no agreement has been reached within the World Trade Organization (WTO) to regulate their use. VSS systems should therefore be viewed as intended: non-governmental tools for achieving social and environmental change. There are a number of success stories on the demand for single-origin products:

- Cacao Verapaz sources the best fermented and dried cocoa beans from indigenous Maya and other cocoa producers in the lush tropical hills of Guatemala. All cocoa is centrally fermented and dried, carefully selected, and packed in high-quality jute sacks lined with Grain-Pro before export to fine chocolate makers. The small-scale producers who grow and later sell them the cocoa are in the process of certification, although most of them have never applied a chemical to their cocoa trees;
- Lachuá Foundation (FUNDALACHUA) and the International Union for Conservation of Nature (IUCN) have been working alongside each other in projects to tackle deforestation through capacity building. The aim is to reduce poverty levels by developing alternative income generating activities, sustainable forest management, control and vigilance, and ecotourism. In 2013, FUNDALACHUA signed its first commercial agreement with Lake Champlain Chocolate, a United States company committed to achieving increased transparency and traceability along the supply chain. Similarly, yet separately, UNDP has been supporting female cocoa producers in improving the profitability of artisanal chocolate by promoting the recovery of cocoa plantations and implementing good agricultural practices to mitigate the effects of climate change.



Courtesy: travelcollecting.

Marketing structure

Cocoa cultivation is a traditional agronomic activity and most rural households in Guatemala have access to cocoa trees. It is common practice for families to grow cocoa for their own needs along with other crops. This leads to an overall association of cocoa sales among low-income households (on average less than GTQ 1000 in the prioritised municipalities) and its disassociation

as an income source. Thus, the small size of the plot - in the prioritised municipalities the average size of a cocoa plot is 0.42 hectare - and this disassociation leads to a very small number of farmers growing cocoa with an intentional surplus.

As explained earlier, fermenting and drying is crucial for preserving the consistent flavour and aroma of the cocoa bean. In Franja Transversal del Norte, the fresh cocoa bean is collected from several small-scale farmers' plots to enhance the homogeneity of the resulting product. Organisations like IUCN, the Fundasistemas Foundation, the Heifer Project, the ProPeten Foundation, FEDECOVERA and ANAKAKAW have taken a region-specific approach to reactivating and introducing technology for cultivation and primary processing among small-scale farmers within their respective regions.

Domestic demand for cocoa products is outpacing the growth of the domestic cocoa bean sector and an increasing volume of cocoa beans and higher value-added cocoa products is being imported from Honduras and Nicaragua through the international trading hubs of Coban, Santa Maria Cohabon and Guatemala City. The Cobán and Santa María Cohabón municipalities in Alta Verapaz also act as the main export hubs for the cocoa sector, with a cooperative of the small-scale farmers of FEDECOVERA being the key player. In the municipality of Ixcán in the Quiché department, the key player is the Fundalachua Foundation. In all other departments studied, the cocoa beans collected are used locally or regionally, usually following an *ad hoc* system for judging the beans' quality (i.e. they do not pay specific attention to the quality).

Market access in global and regional trade

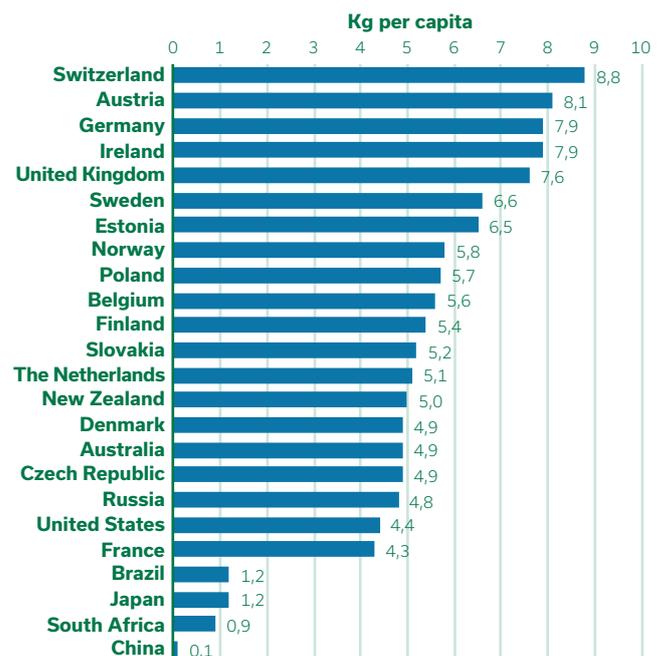
The international cocoa market is the largest among the sectors studied in this report and is the fastest growing internationally. The worldwide cocoa value chain is highly developed and fragmented, with exports concentrated in a handful of countries, and processing and consumption spread across the globe.

The worldwide cocoa value chain is very unequal both in terms of bargaining power and in distribution of revenues. It is highly fragmented at the primary processing level, i.e. fermenting and drying ('Cocoa Value Chain | World Cocoa Foundation' 2018), and highly concentrated at all other stages, i.e. secondary processing, exporting and marketing-enforced manufacturing. Such a structure has over the years led to a diminishing share of cocoa revenue for small-scale farmers growing and carrying out primary cocoa processing. According to Fairtrade Foundation and Ecobank, the expansion of the global market and its accompanying rising concentration in the cocoa value chain drove down the share of an average cocoa farmer in final sales revenue from 16 per cent in 1980 to just 6 per cent in 2012¹³. A similar, or greater share is assigned to intermediaries between cocoa farmers and cocoa and chocolate companies. These companies - Mars, Mondelez

International, and Nestlé account for over two-thirds of world chocolate trade - receive the largest share of the pie with about two-thirds of the final sales value of cocoa products.¹⁴

In recent years, the market has been evolving towards a new, fairer and more socially inclusive supply chain that redistributes revenues more in favour of cocoa bean producers. Final consumption, especially in the developed countries, has turned away from traditional bulk to niche/boutique cocoa products, i.e. mostly unique flavour, single-origin chocolate products or products with voluntary sustainable standard (VSS) certification. According to ICCO, the market for cocoa products qualifying as "niche" or "boutique" is estimated to have grown steadily over the past couple of decades by almost 10 per cent per year, overtaking the yearly average growth rate of the cocoa market at 6 to 7 per cent¹⁵. Estimates on niche/boutique sales of chocolate vary but, while about 20 per cent of the cocoa-planted area is certified under one of the four most common standards (Fairtrade International, Organic, RA/SAN and UTZ)¹⁶, the final market share has not yet matched the existing upstream potential - just US\$ 886 million of the overall US\$ 100 billion market. It is hard to make precise estimates due to the existence of a multitude of VSS (applicable to different aspects of production) and overlapping certifications. Nevertheless, the rising number of smallholder cocoa associations that certify under some form of VSS or enter the niche/boutique cocoa value chain is a robust indication of a growing trend. Recognition has also risen among final consumers - of whom an estimated some 85 per cent in developed countries buy chocolate - with about one in three buying at least occasionally unique flavour, single-origin - commonly called "craft" - chocolate¹⁷ (see Figure 10 for Per capita chocolate consumption worldwide).

FIGURE 10: Per capita chocolate consumption worldwide in 2017

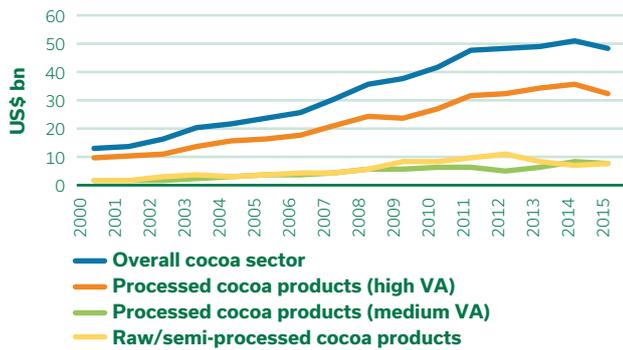


Source: Statista (last edited August 2019)¹⁸.

While the cocoa market in Latin America includes such historically important players as Ecuador and Brazil, special attention should be paid to Mexico, one of the major world exporters of the high value-added cocoa product, chocolate. Most of its production is linked to major bulk traders but, in recent years, Mexican products have been entering the international niche/boutique markets, with 15,300 hectares certified for organic cocoa production.

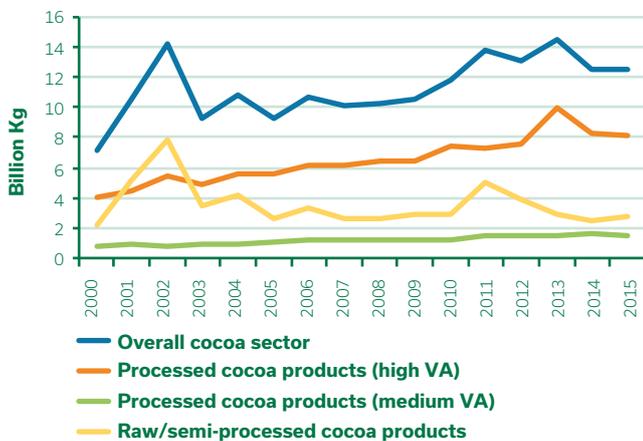
Figure 11 shows the rapid growth of the cocoa sector globally up to 2011, after which it evens out. It highlights the fact that a major part of the growth was registered in the high value-added sector (i.e. the final market for chocolate and chocolate-based products). Indeed, while the value of international trade in the bulkier and less processed products, such as dried cocoa beans, has seen an overall modest rise, the volumes have been flattening out more recently (Figure 12), underlining new trends in traditional international cocoa supply associated most likely with the lower volumes of higher quality products that command significantly higher consumer prices (source: interviews).

FIGURE 11: World cocoa trends (value)



Source: UNCTAD secretariat based on UN COMTRADE data.

FIGURE 12: World cocoa trends (volume)

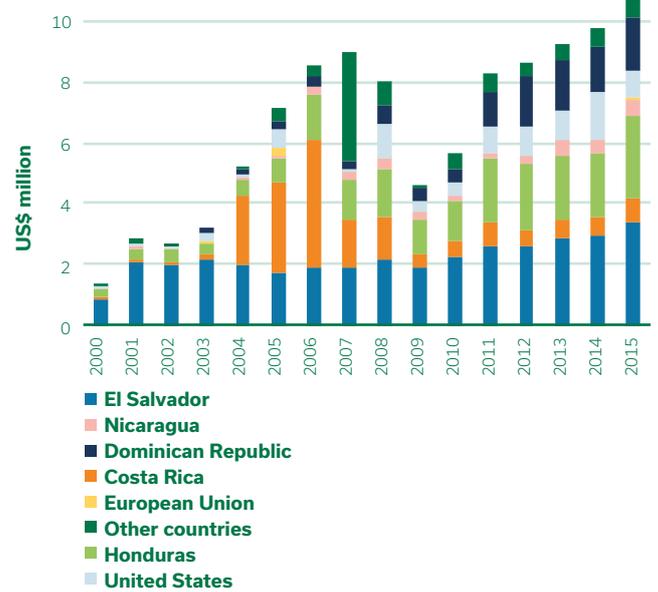


Source: UNCTAD secretariat based on UN COMTRADE data.

While historically many local cocoa varieties are grown, the sector falls far short of meeting local demand for processed cocoa products and has no strong export presence.

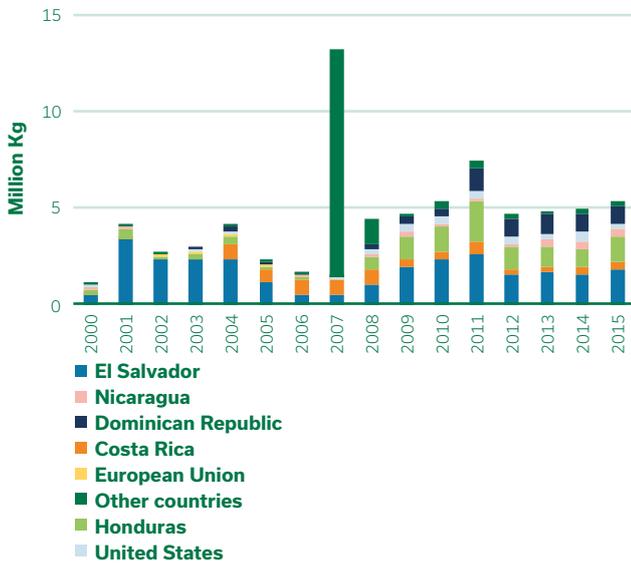
Guatemalan exports, as one of the secondary origin countries for cocoa - and growing - are growing slower than the world average. In fact, the overall growth of the country's cocoa exports (value) has been about 350 per cent (see Figure 13) since 2000, against a world average of 420 per cent. The figures below show that, while the country's cocoa-related exports (apart from the after-effects of the global trade slowdown) have grown to over five times their initial value since 2000, the corresponding volume of sales has not fluctuated the same way. This may suggest that the Guatemalan economy may be failing to seize all the available opportunities that the current market offers.

FIGURE 13: Guatemalan cocoa-related exports by destination (value)



Source: UNCTAD secretariat based on UN COMTRADE.

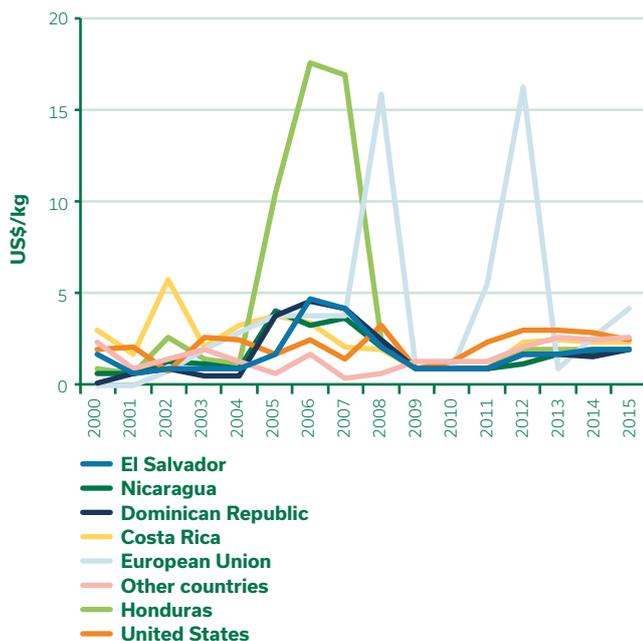
FIGURE 14: Guatemalan cocoa exports by destination (volume)



Source: UNCTAD secretariat based on UN COMTRADE.

This - added to the fact that the relative price of the cocoa exports has been highly volatile (Figure 15), with a high share for the almost raw product - highlights the exclusion of Guatemalan cocoa exporters from established global cocoa links and supply channels.

FIGURE 15: Relative price of cocoa exports, US\$/kg



Source: UNCTAD secretariat based on UN COMTRADE.

Following the value breakdown adopted in this study, table 6 provides the tariff information on the RTA and non-RTA concessions to Guatemala’s main, or main potential, trading partners. In a similar way to the potato sector, the country faces tariff escalation for higher value-added products, as can be seen from the applied tariff rates in Canada and Mexico. Chocolate blocks, slabs or bars and other food preparations are taxed at 20 per cent ad valorem tariff in Mexico; whereas imports of certain food preparations to Canada are taxed up to a maximum of 265 per cent. A similar pattern is also observed among other countries, with low and medium value-added products subject to lower tariffs than high value-added products.

Thus, apart from generally high fixed costs, opportunities for diversification into high-value cocoa products are also hindered by tariff protectionism, making niche/boutique sales of traditionally low and medium value-added products more appealing. Niche/boutique sales are associated with the premium that consumers pay for a product when compared to traditional bulk sales. This premium does not necessarily reflect the profits allocated to actors in the value chain, but it does highlight the fact that market opportunities exist for agricultural products produced in low volume but with unique characteristics. While there is no centralised information on the breakdown of VSS certified cocoa products in Guatemala, it has become apparent that small-scale farmers are currently excluded from access to niche/boutique market outlets (See Box 4 and 5).



TABLE 6: Tariff structure for Guatemalan cocoa sector exports

Type of cocoa product (as per report)	HS6	European Union (in force since 01.12.2013)		Mexico* (in force since 01.09.2013)		Colombia (in force since 13.11.2013)		Taiwan Province of China (in force since 01.07.2007)	
		Base rate (%)	Ad valorem duty-free from	Base rate (%)	Applied ad valorem tariff (%) or specific tariff	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from
Low Value-Added	180100	Exempt	-	MFN	Exempt	10; 15	01.01.14	Free	01.07.06
	180200	Exempt	01.12.13	MFN	Exempt	10	01.01.14	Free	01.07.06
Medium Value-Added	180310	9.6	01.12.13	MFN	Exempt	15	01.01.14	Free	01.07.06
	180320	9.6	01.12.13	MFN	Exempt	15	01.01.14	Free	01.07.06
	180400	7.7	01.12.13	MFN	Exempt	15	01.01.14	Free	01.07.06
High Value-Added	180500	8.0	01.12.13	MFN	5	20	01.01.14	Free	01.07.06
	180610	8*	01.12.13	MFN	0; 20; 326.59 US\$/ton	20	01.01.15	2	01.07.06
	180620	8.3; 15.4	01.12.13	MFN	20; 326.59 US\$/ton	20	01.01.15	12.5	01.01.21
	180631	8.3	01.12.13	MFN	20; 326.59 US\$/ton	20	01.01.15	11.8	01.01.21
	180632	8.3	01.12.13	MFN	20; 326.59 US\$/ton	20	01.01.15	11.8	01.01.21
	180690	8.3	01.12.13	MFN	20; 326.59 US\$/ton	20	01.01.15	5	01.01.11

Source: UNCTAD secretariat, based on information from the Foreign Trade Information System (FITS) of the Organization of American States; (*) the RTA with Mexico does not include any provisions on cocoa and it can potentially be included in further rounds of negotiations

DR-CAFTA (in force since 01.07.2006)		Panama (in force since 20.06.2009)		Chile (in force since 23.03.2010)		Dominican Republic (in force since 15.10.2001)		Canada GSP (created in 1974)
Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Applied ad valorem tariff (%)
Free	Free	15	01.01.13	6	01.01.14	MFN (14.08.98)	15.10.01	Free
Free	Free	15	01.01.13	6	01.01.14	MFN (14.08.98)	15.10.01	Free
Free	Free	10	20.06.09	6	01.01.14	MFN (14.08.98)	15.10.01	Free
0	01.07.06	10	20.06.09	6	01.01.14	MFN (14.08.98)	15.10.01	Free
Free	Free	10	20.06.09	6	01.01.14	MFN (14.08.98)	15.10.01	Free
0	01.07.06	0	20.06.09	6	01.01.14	MFN (14.08.98)	15.10.01	Free
10	01.07.06; MFN	15	01.01.13	Exempt		MFN (14.08.98)	15.10.01	3; 5
8.5		15	20.06.09	Exempt		MFN (14.08.98)	15.10.01	Free; 5; 265
5.6	01.07.06	5	20.06.09	Exempt		MFN (14.08.98)	15.10.01	4
2; 4.3; 5; 8.5; 10	01.07.06; MFN	5	20.06.09; 01.01.13	Exempt		MFN (14.08.98)	15.10.01	4
3.5; 6	01.07.06; MFN	5; 10; 15	01.01.13	Exempt		MFN (14.08.98)	15.10.01	4; 5; 265

NOTES

- ¹¹ ANAKAKAW (Asociación Nacional del Kakaw) is an association of small-scale farmers that operates on the marketing the different taste of the same cocoa type (see Box 8).
- ¹² ANAKAKAW products are not certified to be organic or another type of VSS (see Box 3); they follow various know-hows acquired from different sustainable production techniques.
- ¹³ See https://www.fairtrade.at/fileadmin/AT/Produzenten/Kakao/2016_04_Fairtrade_Foundation_Commodity_Briefing_Cocoa.pdf and <https://ecobank.com/group/investor-relations/key-figures/performance>.
- ¹⁴ See International Cocoa Organization (ICCO) at <https://www.icco.org/about-cocoa/chocolate-industry.html>.
- ¹⁵ See International Cocoa Organization (ICCO) at <https://www.icco.org/about-cocoa/chocolate-industry.html>.
- ¹⁶ See <http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/Sustainability%202018%20layout-FIN-web-v1.pdf>
- ¹⁷ International Cocoa Organization (ICCO) at <https://www.icco.org/about-cocoa/chocolate-industry.html>.
- ¹⁸ <https://www.statista.com/statistics/819288/worldwide-chocolate-consumption-by-country/>

Box 4: Self-organisation, self-compliance and niche/boutique marketing

Kakaw National Association (ANAKAKAW) is an organisation comprising small scale producers from all over Guatemala oriented towards the production of fine cocoa. ANAKAKAW is fully funded by its own private funds. Its operational structure is divided into four business units: i) Services; ii) Primary processing; iii) Secondary processing; and iv) Financial trusts.

The association has developed its own seedlings based on a careful selection and recovery process of native Guatemalan germplasm. Furthermore, ANAKAKAW has introduced its own agricultural practices for pre-harvest and post-harvest. In the absence of a national classification for cocoa beans, the association has created an internal distinction for three kinds of cocoa beans, differentiated by soil and elevation (0-500 m.; 501-900 m.; and 901-1500 m). This classification has allowed it to successfully replicate the production of each kind nationwide, depending on the agroforestry system in each geographical area. ANAKAKAW's model is aimed at creating a business plan for developing Guatemala's productive capacity. It comprises five components: i) Quality; ii) Sanitary and phytosanitary measures; iii) Agricultural good practices for cocoa; iv) Traceability; and v) Cocoa quality and transformation.

In 2017, ANAKAKAW had the capacity to produce only 2 tons per month but Guatemala has a production deficit of about 850 tons of cocoa beans per annum. Using internal resources, the association has developed a medium value-added product (cocoa nibs) produced in accordance with the global rules for Rainforest Alliance VSS certification. At this time, it is establishing links to buyers in markets in the European Union, Canada and the United States. The experience of ANAKAKAW illustrates the internal capacity in Guatemala for adapting to VSS-like production (in the absence of proper certification) and the entrepreneurial potential within the local population.

Regional certification efforts

CUNAKakaw is a standard being implemented, adopted and monitored by the Meso-American Association of Fine Cocoa and Chocolate (AMACACAO), which consists of exemplary cocoa and chocolate companies from the traditional Mayan territories in Belize, El Salvador, Guatemala, Honduras, Nicaragua and the South of Mexico.

CUNAKakaw aims at regenerating cocoa and chocolate production in Meso-America together with providing a guarantee for quality products, managed under a strict Internal Control System. The standard covers cocoa beans and nibs, refined cocoa liquor and chocolate produced in the region. It further covers private farms, cooperatives, and artisanal and industrial chocolate makers from all the region united under a collective brand. In Guatemala, FEDECOVERA, Cacaos de Mesoamerica and Finca La Cruz use the brand as a guarantee of quality, and social and environmental responsibility.



Box 5: Accessing the European Union cocoa market: requirements

European Food Safety Authority (EFSA). Regulation (EC) 178/2002. The regulation established the EFSA which provides scientific advice and scientific and technical support in all fields related to food safety. Additionally, the regulation provides a rapid alert system for the notification of risk to human health from food, emergency measures and crisis management.

Food hygiene. Regulation (EC) No 853/2004 comprises certain basic food hygiene requirements. Every food business operator in third countries is responsible for monitoring the food safety of products and processes. The regulation requires that third countries, after primary production, must put in place, implement and maintain procedures based on hazard analysis and critical control point (HACCP) principles and comply with applicable Community legislation or national law.

Contaminants in foodstuffs. Regulation (EC) No 1831/2003 explicitly imposes on suppliers the burden of ensuring that imported foods of non-animal origin comply with European legislation. Foodstuffs containing an unacceptable toxicological level are barred from entering the European Union market. Maximum levels are set based on the advice of EFSA for the contaminants of greatest concern to European Union consumers, either due to toxicity or potential prevalence in the food chain e.g. aflatoxins, heavy metals (cadmium), dioxins and nitrates.

Maximum residue levels for pesticides (MRLs). Regulation (EC) No 396/2005 defines a fully harmonised set of rules for pesticide residues. In the European Union Pesticides database, the only MRL applicable to cocoa products is classified under code number 0640000 (cocoa beans, fermented or dried, after removal of shells).

Microbiological criteria. Regulation (EC) No 2073/2005 comprises criteria to ensure that foodstuffs do not contain micro-organisms or their toxins or metabolites in quantities that pose an unacceptable risk for human health.

Process and production. Regulation (EC) No 834/2007 covers production, processing, packaging, transport and storage of products bearing a reference to organic production methods. Directive 2009/32/EC harmonises national laws relating to extraction of solvents used in the production of foodstuffs and limits their use for the protection of health (Hexane).

Labelling. Regulation (EC) No 1169/2011 sets mandatory general rules on food labelling i.e. nutrition information on processed foods, highlighting allergens in the list of ingredients, better legibility, etc. Directive 2000/36/EC defines specific common rules for cocoa and chocolate products, which complement the applicable legislation to foodstuffs.

Phytosanitary requirements. Regulation (EC) No 882/2004 authorises the European Commission to request third countries to provide accurate and up-to-date information on their SPS regulations and control and risk assessment procedures. These must be carried out in accordance with a control plan addressing potential risks enshrined in national laws of Member States. The regulation does not require third countries to have reference laboratories. However, laboratories engaged in verifying compliance with European Union food standards must be accredited. Annex I to Regulation (EC) No 669/2009 implementing Regulation (EC) No 882/2004 lists the foods of non-animal origin subject to controls at the point of entry into the European Union, based on known or emerging risks.

Sprouts or seeds Regulation (EC) No 211/2013 requires certification for the import of consignments of sprouts or seeds intended for the production of sprouts, excluding sprouts which have undergone a treatment which eliminates the microbiological hazards.

Additional buyer requirements. Product-specific quality standards and Quality Management Systems (QMS) regarding the production and handling processes are not compulsory but usually requested as extra guarantees. There are two different kinds of certification: those applicable to processors and those for producer organisations and exporters. The former are HACCP-based and required by buyers, importers, food processors and retailers. The most important food safety management systems are recognised by the Global Food Safety Initiative. Whereas the latter – certification for producer organisations and exporters - are key for safe and traceable products.

European buyers usually develop their own Corporate Social Responsibility policies and codes of conduct to ensure good practices and address social and environmental concerns. In addition, there are industry codes and Voluntary Standard Systems to guarantee compliance, such as the Business Social Compliance Initiative and Social Accountability International.



CHAPTER 4



Cardamom sector

Cardamom sector

Cardamom is not native to Guatemala but the country possesses unique climatic conditions for its cultivation, which may explain why it has long been a leading world exporter (US\$ 486 million in 2015, accounting for 54 per cent of the world trade, followed by India and Nepal with 20 and 10 percent). The major difference from other countries exporting cardamom is that Guatemala does not consume cardamom domestically, with 99 per cent of production going to the international market, making it solely an income-extracting activity significantly exposed to international price fluctuations.

Cardamom is well suited to small-scale forestry farming and global best practices tend to recommend around a 30 to 60 per cent shadow from other trees depending on the stage of cultivation, with the later stages requiring less. With a productive life span of about 15 years for the tree, cardamom bears fruit on the third year, with peak quality between 5 and 10 years. Cardamom production is not labour-intensive: after planting around March to June - usually through rhizomes, although seed reproduction can produce better results but requires more time and preparation - it needs to be weeded and then harvested through July to November with the majority of the harvest in October or November. The flower buds need to be quickly dried over a fire after harvesting to preserve the quality of the product.

The cardamom cherry is produced in small batches by a multitude of farmers - over 350 000 families take part in the initial harvesting, spread through the departments of Alta Verapaz, Quiché and Petén. It is viewed as a cash-cropping activity as there is little domestic demand or tradition related to cardamom: families engaged in cardamom farming do so only for sales income. After collection, cardamom is exported mostly to countries with a long-standing tradition of cardamom consumption in coffee, food or as a scented incense or oil.

Cardamom cultivation requires large surface areas, preferably with forest cover. This study indicates that production is shared among some 350,000 small-scale farming families, in about 60 per cent of the cases it is not under forest cover. This leads to lower yields per hectare. In the National Agricultural Census (2003), an estimated 50,000 hectares were under cardamom cultivation. No data has been collected since then; however, according to estimates of national experts - based on the expansion of export volumes (according to COMTRADE, Guatemalan exports increased 2.3 times by volume between

2003 and 2015, and 3.08 times by value while the average world export price increased 2.3 times during the same period) and the decline in product quality due to thrips¹⁹ - some 97,000 hectares of land are under cardamom cultivation.

The current productivity of Guatemalan plantations lags significantly behind world best practice of 60 quintals of cherry cardamom per hectare, a level achieved by just 1 per cent of the country's plantations, located only in Uspantan, Quiché, Coban and Santa María Cahabón and Alta Verapaz. The remainder produce about 33 quintals per hectare.²⁰

Uses and processing

Cardamom, one of the worlds' most expensive spices with a variety of final uses as described in Annex III, is traded mostly as a dried grain. The grain's quality is determined by its colour, size and shape before it is processed into powder to be used as input into a final product (e.g. bakery, cosmetics). Improvement to the quality of exported cardamom should be addressed alongside the development of an internal market for cardamom products in Guatemala. Domestic demand can help absorb international price shocks and enhance the governability of the local production chains.

After harvesting, cardamom must be dried within two days to preserve its colour, smell and flavour. The drying process takes between about 36 and 40 hours, with about 0.5 cubic metres of wood used per 100 kg pile of cardamom, and has to be supervised constantly. Cardamom can only be stored in its dry form, which is about 4 to 5 times lighter than non-dried, and storage must be in specialised facilities to preserve the wholeness of the flower.

The need to preserve the flower in its original dried form comes from the customary system of product quality detection for exporters and importers. There is no universal cardamom quality standard and the size, colour and integrity of the seed matter in order to determine the taste and flavour characteristics of the processed spice. Exporters use these characteristics to determine the presence of thrips infestation, which has been spreading throughout Guatemala in recent years (see Box 6). In the absence of a direct link to the cardamom farmer, this is

the only way to acquire information on the possible export price, as price depends on quality. A similar logic is followed by importers: the complexity of determining quality and maintaining a crushed seed reinforces the dominance of international sales of non-crushed cardamom, or cardamom as a part of another secondary, processed product. Although current technologies would allow for the development of equipment to test the quality of crushed cardamom, a high level of buyer bargaining power and market concentration reinforce the customary approach. Together, all the above results in cardamom being exported in the form of dried seeds, packaged in plastic bags, then crushed at the importer/processor's site.

The processing sites are concentrated in the municipal centres of cardamom-growing regions, from which the cardamom is transported mainly to Guatemala City, the principal export hub for the cardamom trade. Twelve out of thirteen cardamom exporting companies operate from the city, accounting for about 70 per cent of cardamom exports. Other companies are located in San Pedro Carchá and Cobán, both municipalities of Alta Verapaz.

Cardamom exporters in Guatemala have very high exposure to world price fluctuations. Due to a substantial lack of transparency in the sector and almost inexistent pass-through from intermediaries (see Box 7), a rise in the world cardamom price tends not to benefit cardamom farmers while exporters

bear all the losses from a fall in price. These factors have contributed to a decline in quality and increase in tensions among the cardamom farming communities as they lack the ability to assess the changing market situation.

The proliferation of the thrips disease since 2014 has added to the problem: cardamom exporters mostly accept the price regardless of the quality of the product, which now has a high infestation of thrips, leading to lower export earnings and profitability. The lack of a backward link from exporter to farmer with information on quality and price is creating a deadlock that could lead to a decline in the cardamom sector.



Courtesy: Heifer International.

Box 6: Cardamom thrips

The cardamom thrips (*Sciothrips cardamomi*) is a destructive pest which lacerates the surface tissues from leaf sheaths, unopened leaf spindle, panicles, flowers and tender capsules and sucks the exuding sap, causing qualitative and quantitative losses of the cardamom flower. The life cycle of thrips is 25 to 30 days. Both larvae and adults affect cardamom.

Thrips infestations were first spotted in 2011 and are estimated to have directly affected as much as 30 per cent of total harvest in certain areas, for example from 15 to up to 50 per cent of every plantation in Alta Verapaz and Baja Verapaz. The department of Quiché has not reported the presence of thrips. These falls in plantations' productivity reveal a loss of genetic strength caused by phyto-zoo-pathological problems.

The threat has called for international cooperation. The European Union contributed by developing a manual titled "Cardamom Thrips Integrated Plan", which combines strategies and methods to manage pests in an economically sound and environmentally responsible manner. It comprises identification and monitoring, prevention methods and control. Similarly, Canadian international cooperation has funded the CECL and Uniterro programme in their collaborative work with ADECAR in Cobán, Alta Verapaz, to assess the effectiveness of the control methods put in place by a team of technicians led by biologist Claudio Nunes. In parallel, MAGA, FEDECOVERA and CARDEGUA have launched joint efforts to combat thrips resulting in the design of an integrated management calendar for cardamom cultivation.

Management of the thrips threat has posed serious challenges given that it is alien to Guatemala. There are cultural, mechanical, ethological, physical, biological and chemical methods, which may be recommendable depending on the economic damage caused by thrips, the geographic location, the effectiveness of less harmful methods and the resources available.

Marketing structure

Cardamom production in Guatemala relies fully on small-scale farming involving about 350,000 families spread over the whole zone of cultivation in the Franja Transversal del Norte region, who are mostly Mayan Q'eqchi. Countrywide, the drying process is carried out by about 2,000 processors, which makes their availability and accessibility dependent upon proximity or infrastructure and means of transport. The shortage of processing plants is influenced by the size and cost of the equipment installed and the seasonality of the need for processing services. Annex III illustrates the cardamom marketing chain.

The cherry cardamom must be dried within two days of harvest, so there needs to be a processing facility nearby due to poor transport infrastructure. The timely drying of cardamom defines the quality and colour of its spice and allows for storage of up to about one year. Some farmers' organisations have opted to invest in their own processing equipment, the so-called "benefit" i.e. a warehouse with a cardamom washing machine, drying machine and polishing machine. However, non-associated producers or organised producers without a "benefit" depend on the services of a processor and, most of the time, on an intermediary to transport their produce to the processing site. Afterwards, the producer or processor needs to sell the dried cardamom to the exporter, which usually takes place over long distances, so intermediaries play a key role in the cardamom marketing chain.

In many of the cardamom-producing communities, links to intermediaries represent the only opportunity to commercialise their production. Some producers are located in remote villages with poor road infrastructure; others are unable to dry or pack their own produce. While there is an undeniable need for intermediaries, their excessive number is problematic, with often as many as eight intermediaries between the producer and the exporter (see Box 7). Informal arrangements between intermediaries create a high level of price fixing at the farm gate or at processing, frequently at a fraction of the price paid on the world market. Furthermore, intermediaries, as the only link between farmers and processors, sometimes exhibit explicitly non-market behaviour and can impede the flow of information through the value chain. Thus, although there is a need to address excessive reliance on intermediaries, the fact that they are necessary to remote farming communities should also be taken into account.

Cardamom exports are highly concentrated. Information gathered for this study indicates that, out of 13 registered export companies, only four actively export cardamom each year, with the Asociación de Exportadores de Cardamomo (ADECAR) representing the smaller cardamom exporters. In recent years, a number of cardamom farmers' associations and groups were created to tackle the problem of the intermediaries by setting up processing facilities or upgrading communication between farmers and exporters. This has proven to be a successful arrangement that enhances the transparency of the value chain, provides access to information for farmers and improves the quality of the product.

The Federación de Cooperativas de las Verapaces (FEDECOVERA) is an example of a successful farmers' association focused on the economic and social development of smallholders. It is a second-level, cooperative structure present all along the 'Franja Transversal del Norte', grouping a series of autonomous and democratic legal entities that own land and grant their associated producers the right of usufruct over plots. Every first-level cooperative in theory should be capable of channelling the agricultural production of its members to the agro-industry to obtain the highest level of profit. Additionally, FEDECOVERA provides its affiliates with a number of services including technical assistance, credit assistance, legal advice, accounting services, health assistance, planning and project development, agricultural entrepreneurship training and more. The production scheme is structured as a value chain in which all the associates represent the producers, who benefit from training and technical assistance. The cooperatives act as collectors and carry out the drying of the cardamom to then sell it to FEDECOVERA, which adapts the product to meet consumers' standards by classifying the cardamom according to its quality and packing, or even by transforming it into cardamom oil.

Cardamom production in Guatemala differs from other cardamom-producing countries such as India, Bhutan and Nepal, where it is heavily reliant on women's labour, including mid-season and post-harvest. Whereas, in Guatemala, women are usually in charge of specific tasks related to cultivation and harvesting. An additional impediment to female participation is the culturally imposed role of women, which places them at a disadvantage when dealing with intermediaries, who are overwhelmingly male, and trying to bargain for a fairer price. Although, as a cash crop perceived as "male", globally cardamom is more of a "female" crop due to its light weight – women can both harvest it and carry it to the dryer.

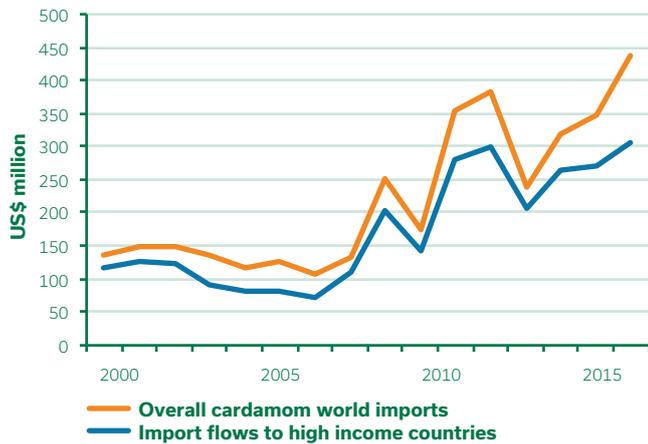
Market access in global and regional trade

Although cardamom is produced in only a handful of low- or middle-income countries such as Guatemala, India and the United Republic of Tanzania, its consumption is mostly concentrated in high-income countries (see Figure 16). There is a significant mismatch between the countries producing and the countries consuming cardamom worldwide due to its high dependency on very specific climatic conditions as well as its distinct patterns of use.

International trade in cardamom has a huge influence on the exporter-importer relationship. Compared to the other two sectors in this report, the global market for cardamom is relatively small. According to COMTRADE, as of 2015, Guatemala continued to occupy the top position, with US\$ 240 million in exports, followed by India (US\$ 80 million) - although India is catching up due to increased demand (including domestic demand, which helps absorb export price fluctuations) and improved productivity. To remain competitive, Guatemalan cardamom production needs to address the decline in quality and productivity, for example by more quickly addressing the thrips outbreak. Similarly, the

cardamom import market is highly concentrated regionally in countries of the Middle East and North Africa (MENA), driving up buyer power. As a result of market concentration and subject to product quality, international trade in cardamom tends to generate long-term exporter-importer links.

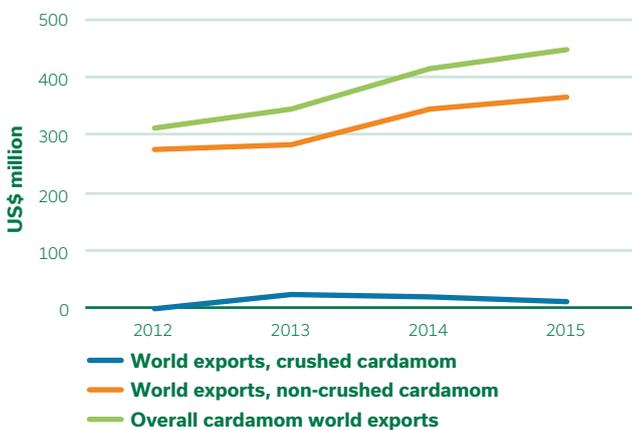
FIGURE 16: World imports of cardamom by income groups



Source: UNCTAD secretariat calculations based on COMTRADE data.

The growth in the global cardamom market, which doubled between 2003 and 2015, was heavily weighted towards final consumers in core markets: thus, cardamom consumption in MENA countries grew twice as fast as elsewhere. This, together with the afore-mentioned customary rule on exporting cardamom in its non-crushed form (see Figures 17 and 18), leads to a situation where cardamom production – despite multiple possibilities for diversification – actually has limited production options within current international trade links. In particular, statistics on exports of crushed cardamom highlight evolving trends in traditional cardamom trade: Guatemala occupies only the 5th place, with India at the top and three non-cardamom-producing countries in between – the Netherlands, Sweden and Germany. Developed countries’ markets are continuously growing in importance as cardamom processing hubs.

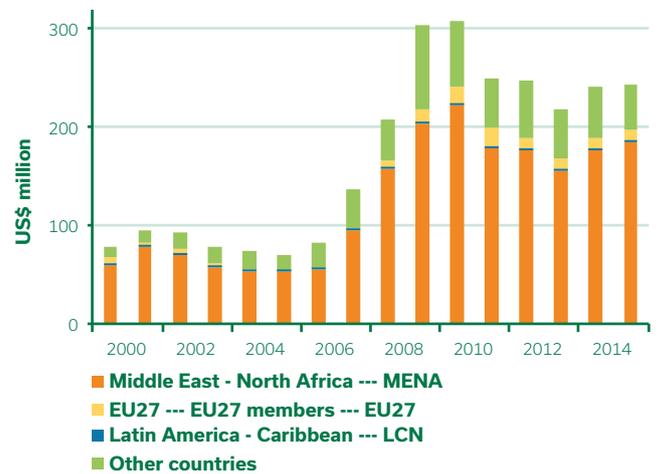
FIGURE 17: World exports of cardamom by type



Source: UNCTAD secretariat calculations based on COMTRADE data.

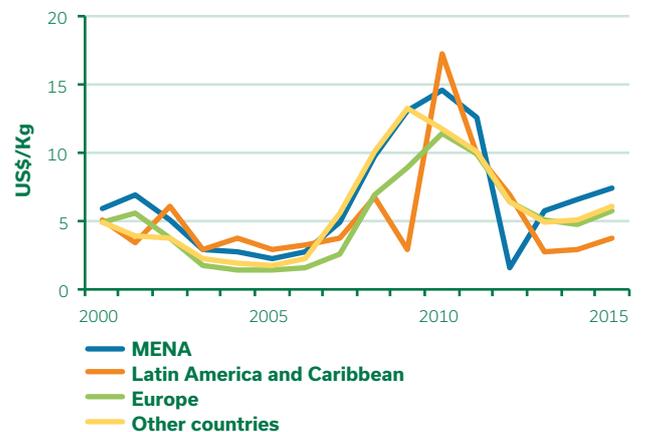
This demonstrates that new, potential global markets for cardamom products should include non-traditional (i.e. non-MENA) developed markets such as the European Union or other Latin American countries. Remarkably, the current price dynamics of Guatemalan cardamom exports already exhibit a trend towards new export destinations. Although the unit price of exports across regions has been relatively similar over time (see Figure 19), the markets that have seen highest growth in both value and volume are France, the Republic of Korea and the United Kingdom of Great Britain and Northern Ireland (Figure 20). As indicated in Annex III, bakery items, cosmetics, and tea and coffee, can be manufactured with cardamom, then exported. Considering the other sectors in this study, one of the products that could be explored is cardamom-flavoured chocolate.

FIGURE 18: Regional breakdown of Guatemalan cardamom exports (value)



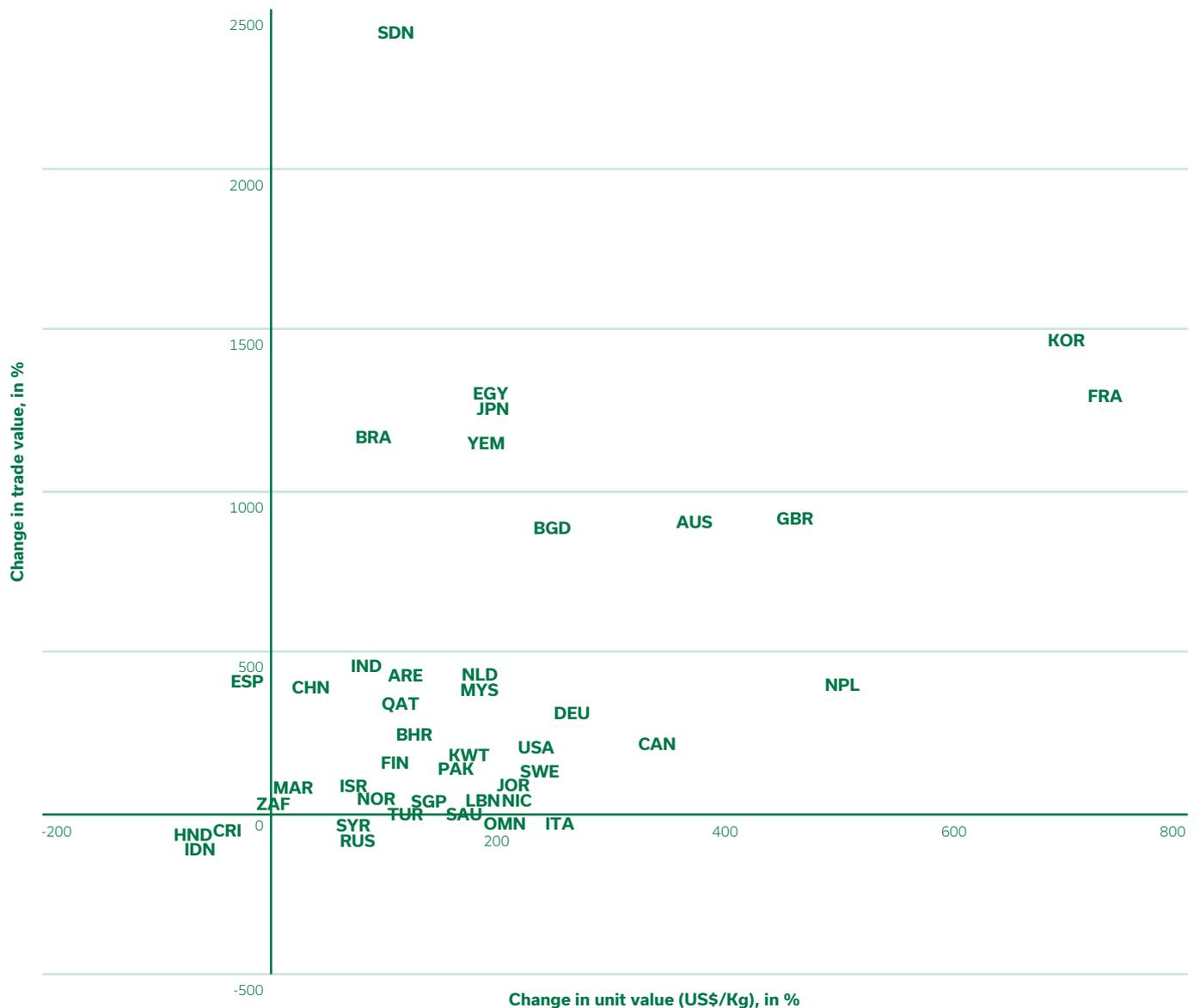
Source: UNCTAD secretariat calculations based on COMTRADE data. Exports of both non-crushed and crushed cardamom. Geographical breakdown as per World Bank classification.

FIGURE 19: Regional breakdown of Guatemalan cardamom exports (price)



Source: UNCTAD secretariat calculations, based on COMTRADE data. Exports of both non-crushed and crushed cardamom. Export price is defined through unit values – US\$ per kilogram of the product.

FIGURE 20: Changes in the cardamom export price and value ratio, by destination, 2000 to 2015



Source: UNCTAD secretariat calculations based on COMTRADE data.
Exports of both non-crushed and crushed cardamom.
Export price is defined through unit values – US\$ per kilogram of the product.

The difference between crushed and non-crushed cardamom was only introduced into the Harmonized System (HS) in 2012 and there is no distinction between their tariffs. Clearly, this breakdown can be exploited in further negotiations. The low (or nil) tariff exists across all product destinations, including the major Gulf Cooperation Council (GCC) importers. However, a different situation exists regarding tariffs on products that use cardamom as part of their inputs, such as chocolate, tea or coffee (illustrated in Table 7), which indicates tariff escalation for medium and higher value-added agricultural products.

SPS and TBT treatment of crushed and non-crushed cardamom is very favourable: during the production process, it goes through a heat-induced dehydration process that eliminates many food safety concerns. The colour of the product is in itself indicative of the conditions under which it has been cultivated and stored, so the level of SPS and TBT measures is lower than for most other agricultural products. However, products that use cardamom as an input are just as likely as other products to be subject to SPS and TBT measures.

Box 7: Suppressing competition in the cardamom sector

Multiple intermediaries are present across the cardamom value chain: between the farmer and the processor, and between the processor and the exporter. They act as a logistical service due to poor infrastructure in the areas where cardamom is cultivated and are fundamental to the sector, usually buying the unprocessed product from farmers at the farm gate, then either processing it themselves or selling it to a processor. Subsequently, the dried cardamom must be passed on to packers and exporters.

Guatemala is the only country in Central America still without either competition legislation or a dedicated competition authority to enforce it. Existing responsible authorities lack the necessary tools to address anticompetitive practices e.g. price fixing, abuse of market power. Intermediaries take advantage of asymmetric information and power, and the lack of cartel regulation allows them, in certain geographic areas, to take full control over the production chain: manage the distribution of revenues, interrupt the flow of information for their own benefit, and fix the price according to their own convenience, thereby eliminating the pass-through from world prices. It should further be noted that these intermediaries do not transmit market information on the consequences of thrrips and the decline in value it causes.

Although *de facto* not illegal in Guatemala, globally the act of price fixing generally constitutes an anti-competitive practice since it eliminates competition and distorts trade links. From the first shipping transaction, the intermediary restricts competition by paying the producers a non-market based price at the farm gate, regardless of product quality. Given that, on many occasions, intermediaries may be the principal (if not the only) transport option, they possess a disproportionately high bargaining power over the markets in which they operate. In most cases, even when alternatives exist, they also operate under the same conditions. Such practices are a disincentive to value-addition by producers themselves because the farm gate price barely covers the operational costs of drying cardamom. Thus, the key problem in Guatemala is not the lack of drying equipment per se, but the inability to gain a fair benefit from processing cardamom. This means that, even if cardamom is dried, the gross profit producers make is almost the same as selling cherry cardamom and the benefit from processing cardamom is negligible. In addition, it is quite common for these cartel-like intermediaries to be processors as well, motivated by acquiring cheap inputs for their own processing businesses.

Collectively, these factors inhibit reciprocal benefits from business activities along the cardamom agricultural value chain both horizontally and vertically. Horizontally, they prevent numerous independent entrepreneurs competing in the same sector from making a profit. Vertically, they distort information on a product's market success and create disincentives for quality or value upgrading. While intermediaries provide logistical advantages, their cartel behaviour harms more than benefits the sector and underscores the need for a regulation to diminish the great power of the so-called "coyotes", as the intermediaries are commonly known. This total lack of transparency in the value chain transfers all market risk to the exporters but enhances the profits of the intermediaries - while delivering low and unfair revenues to the farmers.



Dubai market, 2017.



Street food market, Italy.

TABLE 7: Tariff structure for the Guatemalan cardamom sector

Type of cardamom product (as per report)	HS6	European Union (in force since 01.12.2013)		Mexico* (in force since 01.09.2013)			Colombia (in force since 13.11.2009)	
		Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Applied ad valorem tariff (%) or specific tariff	Base rate (%)	Ad valorem duty-free from
Low value-added	090831	Exempt	01.12.13	-	-	20	10	13.11.09
Medium value-added	090832	Exempt	01.12.13	-	-	20	10	13.11.09
Special lane	091099	7	01.12.13	-	-	20	10	01.01.15
High value-added, used cardamom	180690	8.3	01.12.13	-	-	20; 326.59 US\$/ton	20	01.01.15
	090240	Exempt	01.12.13	-	-	20	20	13.11.09
	090111	Exempt	01.12.13	-	-	20	-	-

Source: UNCTAD secretariat, based on information from the Foreign Trade Information System (FITS) of the Organization of American States;

(*) the RTA with Mexico does not include any provisions on cocoa, and it can potentially be included in further rounds of negotiations;

(**) Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Bahrain and Oman.

Taiwan Province of China		DR-CAFTA (in force since 01.07.2006)		Panama (in force since 20.06.2009)		Chile (in force since 23.03.2010)		Dominican Republic (in force since 15.10.2001)		GCC countries (**)
Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)	Ad valorem duty-free from	Base rate (%)
Free	01.07.06	Free	Free	0	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	Free
Free	01.07.06	Free	Free	0	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	Free
15	01.07.06	1.9	01.07.06	Free	20.06.09	6	01.01.2020	MFN (14.08.98)	15.10.01	5
5	01.01.11	3.5; 6	01.07.06; MFN	5; 10; 15	01.01.13		Exempt	MFN (14.08.98)	15.10.01	5
18.2	-	Free	Free	15	20.06.09	6	23.03.10	MFN (14.08.98)	15.10.01	Free
Free	01.07.06	Free	Free	Exempt		6	23.03.10	MFN (14.08.98)	15.10.01	Free

NOTES

¹⁹ See box 6

²⁰ Source: interviews to main cardamom exporters.



CHAPTER 5



Upgrading
trajectories

Upgrading trajectories

As detailed in chapters 2 to 4, the competitiveness of the Guatemalan potato, cocoa and cardamom sectors is affected by a combination of a decrease in productivity due to quality issues and the volatility of primary commodity prices. The sectors studied offer a variety of options for small and medium agro-processing, artisanal and handicraft enterprises, as well as tourism. Commercialisation options should include any one or a combination of the following: product diversification through designations of origin, compliance with existing VSSs, packaging and brand strategies, and small-scale downstream processing to serve local markets. All of these can benefit from demand-side drivers, such as linking current sector capacities to boutique buyers, the hospitality industry, such as hotels and restaurants, and local stores, as well as from coordinating farmers' groups and training them in export processes.

Realising the high potential of demand-side drivers for enhancing rural transformation goes hand-in-hand with solving supply-side challenges. Addressing these requires a multi-stakeholder approach according to the principles of sustainable agricultural trade policy, as detailed hereafter.

Industrial demand requirements

Previous chapters have highlighted the need for a more homogenous primary product in terms of type, quality, or both. It should be noted that a variety of factors contribute to quality including both genetic material and the care and skills applied in all production stages. The focus should therefore be on addressing inputs and skills to ensure the inclusion of small-scale farmers in the value chain.

Agriculture is not isolated for manufacturing despite seeming so in Guatemala due to geography and lack of infrastructure. The interconnection between the two goes beyond the processing of food and foodstuffs to include chemicals, cosmetics or other products.²¹ These industrial links can provide additional opportunities for employment and significant added value. However, the processing of high value-added products requires important human and capital investment and may not be feasible as a short-term industrial plan.

In Guatemala, a highly diverse genetic pool is available to small-scale potato and cocoa farmers. This, combined with the current wide variety of pre-harvest and post-harvest techniques, creates

a very heterogenous input base upstream for primary product processing but is a hindrance to secondary processing. The challenge is to set up national regulatory structures that protect small producers and enable them to make a profit and, at the same time, avoid assigning a power of monopoly to large, multinational, vertically-integrated, agro-industrial enterprises.

In this regard, some efforts are underway by private and public entities, particularly MAGA, to promote Good Agriculture Practices (GAP) and Good Manufacturing Practices (GMP), but they must be adopted as general rules at national level.

The adoption of GAPs and GMPs can, in the short term, form the basis for the greater, medium-term inclusion of small producers in global agricultural value chains through the upgrade of local products. The diversity of current practices inhibits secondary processing such as the manufacture of potato chips or potato flour of the same consistency, or chocolate butter or other higher value-added products. The promotion of GAPs for cardamom can increase yield per hectare and help control the spread of pests and diseases such as thrips.

The selection of varieties should focus on:

- Taste characteristics;
- Qualities of consistency (for potato: starch consistency, flavour and "mouth-feel"; for cocoa: bitterness, aroma, texture; for cardamom: shape, size and colour of the dried cherries);
- Practices that must be followed to cultivate the variety;
- Whether the volumes that can be cultivated are high enough for commercial purposes.

Bearing in mind the wide variety of product characteristics stemming from Guatemala's climate and geography, the selection of the varieties of potato or cocoa most suitable for commercialisation is advised to increase the uniformity of small-scale farmers' products. The existence and sometimes the characteristics of many native types of potato and cocoa in Guatemala depend on very specific climatic and geographic conditions.

With regard to affordable seed certification, private nurseries currently cultivate seedlings at a price that is prohibitive to small-scale farmers and only 0.5 per cent of potatoes are grown from certified seeds. While provision of sufficient certified seed should generally be the long-term goal, it is widespread practice to multiply certified seed to make it affordable, and this constitutes a part of the activities of the Science and Technology Agricultural Institute (ICTA).

However, multiplication and selection techniques should be introduced into the agricultural production chain at the same time as principles related to traceability, which are crucial to respecting regulations in export markets or conforming to private standards (see Box 3).

Efforts aimed at improving the quality of Guatemalan potato, cocoa and cardamom products should, in the long term, focus on creating and meeting international market standards. However, in the short-term, developing a standard to measure the consistency of the three products on the domestic market seems critical. The transparency of rules and standards in agricultural value chains will both enhance internal business capacities and attract foreign investors capable of assessing the market opportunities for Guatemalan products.

Institutional capacity and transparency

One of the key tasks of policymakers seeking to revitalise the rural economy through sustainable trade in agriculture is to provide a framework that facilitates the engagement of small-scale farmers. (FAO 2014a). This is an extremely complex task requiring a multi-stakeholder approach as well as a two-way flow of information between stakeholders, for which there are a number of key challenges.

The first of these is to provide coherency between, on the one hand, trade and agricultural policies and, on the other, natural resource management. A number of policies have been enacted to develop a framework for compliance with the major goals of the 'National Development Policy and Plan: K'atun Our Guatemala 2032'; and within the current inbuilt capacity of each ministry. In this regard, the National Integral Rural Development Policy (PNDRI), the Agricultural, Fisheries, Forestry and Hydro Biological Policy and the Economic Policy are together contributing to the design of sustainable production models. These should be culturally pertinent as regards agriculture and forestry and contain a vision for human development in rural communities. One of the aims of the National Policy on Food Security is to strengthen production chains and decrease the level of intermediation between producers and consumers. The National Policy for the Promotion and Integrated Development of Women and the Equity Plan place emphasis on the search for funding to cover female entrepreneurship projects, particularly in rural areas. In addition, the National Strategy for the Restoration of Forestry Landscapes is based on measures to generate income from alternative production and contribute to the competitiveness of agroforestry systems. However, the coordination of effort and the reinforced commitment of many government institutions mandated to advise on sustainable development is required to ensure successful implementation. These efforts currently comprise the formation and functioning of:

- The Presidential Secretariat for Planning and Programming (SEGEPLAN), which is the public entity in charge of planning and providing technical assistance and advice to the Executive Branch of government and the Development Councils System to link public policies, planning and programming with the national development policy and plan;
- The Presidential Secretariat for Women (SEPREM), which is mandated to advise and coordinate public policies to promote the integration of women into the development process;
- The National Competitiveness Programme (PRONACOM), which is mandated to facilitate inter-institutional alliances between public and private sectors and civil society and academia to develop competitiveness in the context of human capital and enterprises, to generate investment, promote decentralisation and improve living standards;
- The National Agricultural and Farming Development Council (CONADEA), which is a unit of MAGA designed to facilitate the latter's interaction with all non-governmental institutions and organisations involved in the agricultural sector to organise agricultural chains and set up working groups, in which all actors may be represented, as spaces to promote dialogue;
- The National Urban and Rural Development Council (CONADUR), which is responsible for organising and coordinating public administration through the drafting of urban and rural development policies, as well as land-use planning.



UNCTAD team at Ministry of Economy, MINECO, 2018

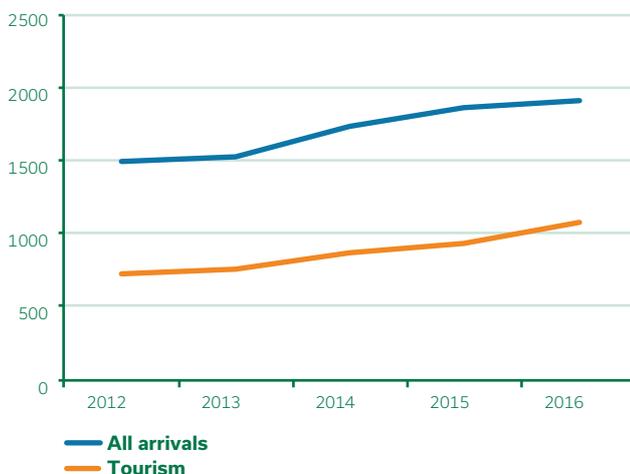
Facilitating regular cooperation between these bodies in trade-related agricultural policy is therefore an important step towards improving institutional capacity and transparency in Guatemala. This implementation framework, together with a review and endorsement of the recommendations in this study, is encouraged to ensure smooth progress towards sustainable agriculture and the achievement of the Sustainable Development Goals.

The second challenge is to enhance the link between government institutions and other stakeholders. Multi-stakeholder initiatives such as the Sectoral Table of the Potato of the Department of San Marcos and the Agro-alimentary Chain of the Potato of San Marcos and Quetzaltenango,²² which bring together research institutions, academia, industrial actors and government, can form the basis for planning, formulating appropriate trade policies and boosting rural agriculture. Such efforts share the ultimate objective of targeting poverty and the exclusion of vulnerable groups and protecting the environment. Note that enhancing the link between government institutions and other sector stakeholders can also tackle the negative effects of the cartel behaviour of intermediaries described in Box 7; and help in formulating regional and sectoral plans of action that contain concrete policy goals and actions that can be implemented in a sustainable way.

A third challenge relates to improving information and cooperation at the primary level between the smallholder farmers. As previously noted, the sectors studied are: heavily dependent on small-scale farming; spread throughout Guatemala; and are the main activity of the most remote regions of the country, where access to technology, capital, education, and infrastructure is the lowest. These limitations can be overcome by creating self-governing groups; notably farmers' groups and associations, which are recognised as vital instruments in achieving the SDGs (FAO 2016a).

Addressing the above challenges will enhance the overall institutional governance of agricultural production chains in Guatemala and unlock the internal potential of the rural economy, thus improving the lives of small-scale farmers. Most importantly, a better and more structured institutional environment should be combined with sustainable agricultural trade policies.

FIGURE 21: Tourism trends, Guatemala



Source: World Tourism Organisation

Niche exports

Trade analysis on cocoa and potato has emphasised how high value-added products can increase trade opportunities in rapidly expanding markets.²³ Moreover, trends indicate a surge in overall consumer demand and an expansion of products traded. At the same time, recent decades have seen growing opportunities within the specialty niche/boutique markets.

Throughout this report, specialty agricultural products are defined as widely marketed, differentiated food products, including but not limited to fair trade, organic and origin-based. Such products are differentiated in an unconventional way through characteristics related to consumer concerns over certain aspects or sustainability of production. While commonly certified under Voluntary Sustainability Standards (VSS), these products may benefit from a geographic indication or the "selling" of a specific narrative.

Unique genetic pools in the cocoa and potato sectors in Guatemala provide a strong basis for taking advantage of these specialty opportunities. The commodity chain overview in this study focuses on potential trade partners for traditional products. However, the ability to serve specialty markets worldwide is an additional advantage for the Guatemalan rural economy. The specialty products relate only to the cocoa and potato markets but the term specialty is also relevant to products using cardamom as an ingredient (FAO 2011a).²⁴

According to FAO, in 2012, the global cocoa market – including domestic and subsistence consumption – amounted to US\$ 83 billion, with the global chocolate market valued at approximately US\$ 830 billion (Potts et al. 2014). Figure 13 shows that, according to UN COMTRADE, high-value, cocoa-related exports doubled between 2005 and 2015, confirming the global rise in consumer demand for chocolate.

Within this global market, the specialty chocolate segment (bean-to-bar, single-origin, fine-flavour, gourmet chocolate) is growing at the fastest pace. Since 2011, growth has been between about 7 and 10 per cent year-on-year, while sales growth in the traditional bulk chocolate of major companies (Nestle, Mars, The Hershey Company, Mondelez) has been between 0 and 4 per cent. This indicates increased opportunities within the non-bulk segment of the cocoa market (ICCO 2018).²⁵ In 2014, about one third of the global cocoa trade was already certified under VSS (Potts et al. 2014), with current, global VSS-certified amounting to as much as US\$ 300 billion. However, VSS or VSS-like certification is not evenly spread among Latin American countries: 100 per cent of the exports of the Dominican Republic are certified, followed by Peru, with about 80 per cent; however, VSS certification is less than 10 per cent in the exports of other countries (e.g. Brazil, Ecuador, Colombia). Nevertheless, overall there is a rising regional trend for VSS certification of cocoa production.

Statistics for the global sustainable potato market are scarce but, in recent years, concern has been growing over the sustainability of the potato and its production (Lutaladio and FAO 2009). Many concerns derive from the biological characteristics of the potato itself: potato cultivation is susceptible to seed-borne insects and pests so seed quality is important; the speed of seed multiplication is slow; and there is a need for open field cultivation to avoid deforestation. Addressing seed provision for small-scale farmers alongside good agricultural practices are therefore key to sustainable potato production in Guatemala.

An increased commercial emphasis on accessing specialty markets will have a direct impact on smallholders. Potatoes and cocoa are frequently smallholder crops, ready for export at the very early stages of processing. They can be handled in fairly small amounts, which makes them more suitable for sale at the farm gate or small-scale processing (e.g. fermenting and drying for cocoa). Boutique/niche markets and certification generally favour traditional-type farming over heavily capitalised production. This preference implies higher labour intensity as well as benefits for the land. Furthermore, it makes possible an increase in gains in the longer term because the value produced per unit of land in labour- and knowledge-intensive smallholder agriculture can outweigh that of large-scale agriculture (HLPE 2013). In addition, niche/boutique traders and brand manufacturers buy and sell the stories and relationships behind the product they are trading and they can empower small-scale farmers to become a centrepiece of their marketing and sourcing strategy (UNCTAD 2014).

Niche/boutique exporting could be more inclusive for small-scale farmers and improve their livelihoods but there are still a number of internal, industrial constraints that need to be addressed to unlock its potential, notably a sufficient volume of products with similar quality or characteristics, as well as other pre-requisites on traceability and documentation.



Sustainable tourism

Small-scale farmers engaging in export-oriented activities face a number of challenges from international agreements and domestic regulations. Although niche exporting is the long-term goal, a more short- to medium-term alternative may be to focus on enhancing higher-value agricultural products alongside rapidly growing domestic tourist attractions, notably linking artisanal producers to tourist service providers such as hotels, cruises or business flights. Tourism is a convenient way to export non-tradable goods and services: when tourists visit a country, they buy local products and use local services. This enables local producers to reach foreign markets without facing certification and regulation requirements.

An already growing sector since 2012 (illustrated in Figure 21), tourism in Guatemala has mostly been concentrated in a few areas such as Guatemala City, Antigua Guatemala, Lake Atitlán and Petén. Several development challenges should be addressed when creating tourism streams such as agritourism. They include low agricultural productivity, monocropping, high food imports, poor public health, low level of education and youth unemployment.

Basic commodities such as cocoa, potatoes and cardamom can be transformed into value-added goods using home food-processing techniques. The majority - for example, cardamom baked goods, chocolate bars or potato chips - can then be sold to the tourism sector. Tourism therefore has the potential to create the right incentives for a more diversified and value-added form of agriculture. Although small-scale farmers are unlikely to become direct suppliers to hotel chains and business services, they can immediately be integrated into the excursion business with their offer of agritourism products. Agritourism can thus re-position rural, small-scale farmers and establish sustainable links between tourism and agriculture.

It might be more economically viable and sustainable to establish strategic partnerships between the tourist sector and organised small-scale farmers' groups and associations. First, a broader base of suppliers diversifies the risks of the upstream processor and final trader. Second, a farmers' group or association puts less strain on the skill composition of each farmer as they do not need to possess the full set of organisational, business and economic skills to be a part of value-added production. Furthermore, while dealing with local retailers or hotel chains does not require the same degree of certification and documentation as exporting, there could be certain minimal requirements set by the buyer that reflect health and safety concerns and tourist preferences.

These can be very difficult or virtually impossible for an individual, small-scale farmer to meet; but, accumulating their expertise under the umbrella of a farmers' group or association may help them achieve compliance (see Box 8: Cooperatives and the Sustainable Development Goals). The capacity of such organisations to meet on-farm and off-farm investment in productive assets, and requirements for quality assurance and tracking systems, will thus stimulate the development of an agriculture-tourism link. By pooling knowledge and skills, farmers' organisations can not only succeed with the necessary certifications but also advertise themselves via various various online and audiovisual channels channels.

Guatemala is sometimes called the "heart of the Mayan culture" because of its abundant natural and cultural heritage from pre-Hispanic times. This has attracted tourists from inside and outside the country, mostly from the Americas (90 per cent) and by land (58 per cent). The majority are from Central American countries because of their close proximity and common language but there are a number of local efforts which attract tourists from other areas. These include a vast urban art project called "Pintando Santa Catarina Palopó". Its aim is to transform the lakeside town of Santa Catarina Palopó in Lake Atitlan into a cultural destination, initially by painting all houses and buildings in vibrant hues and symbols that recall the traditional hand-woven huipil blouses worn by local women and handed down through generations.

Furthermore, these efforts already include successful examples of the collaboration of rural, small-scale farmers' groups and associations through a single entity (processor, lead entity or

presenter). One is the cardamom and cocoa products by "Te Nutritivo del Norte" or "Dieseldorff Kaffee" in Alta Verapaz, which are sold in small shops in the areas where they are processed. The key challenge is to identify a strategy to scale up and replicate successful models linking tourism with small-scale agriculture in other areas of Guatemala with a potential for ecotourism or cultural tourism and ensure that the benefits are evenly distributed among participants.

The development of sustainable tourism is very important for the Transversal Strip in the North of Guatemala: the region is very rich in natural resources, landscapes and attractions but has poor access to infrastructure and other services. The current 'Comprehensive Development Plan for the Transversal Strip of the North' developed by SEGEPLAN, summarises the obstacles and formulates possible actions. A similar approach can be used in other places or regions of possible tourist interest.

Tourism has strong potential for triggering the development of rural regions but care is needed: tourism strategies implemented in an unsustainable way can harm the biodiversity of virgin nature and disrupt fragile ecosystems. Furthermore, some evidence suggests that the expansion of tourism can lead to only a marginal increase in the incomes of the poorest households whereas richer and middle-class households benefit more (UNCTAD 2011). An integrated approach is therefore needed to assess the pro-poor and sustainability outcomes of tourism strategies, considering that sustainable tourism can activate the rural economy by including and building the capacities of poor, vulnerable and under-represented groups.

Box 8: International Cocoa Organization

The International Cocoa Organization (ICCO) is a global organization, whose membership includes cocoa producing and cocoa consuming countries. It was established in Geneva in 1973 at a United Nations International Cocoa Conference. It combines experiences from all relevant actors globally, highlighting the importance of the private sector in the world cocoa economy and the fundamental role of trade and industry. ICCO's mandate is to work towards a sustainable world cocoa economy.

The Organization acts as a global information centre for the collection, exchange and dissemination of information relating to cocoa and cocoa products. Members of the Organization benefit from market transparency for the efficient functioning of the world cocoa market; annual analysis on the world cocoa market; links to a global chocolate industry web; insights into the costs of cocoa production worldwide; guidelines on best known practices; inventory of diversification practices; information on tariff duties and taxes related to cocoa consumption and processing; price risk management for farmers through cooperatives.

Nowadays, ICCO focuses on achieving sustainable cocoa production and consumption in conjunction with governments and the private sector. Issues include coordination of production policies; improvement of the income position of smallholder cocoa farmers; promotion of cocoa and chocolate in emerging markets; development of the cocoa trade; the use of cocoa by-products; chain management and traceability.

In Central America, Nicaragua, Honduras, Belize and Panama are parties to the ICCO Agreement. According to the definitions comprised in the text of the latter, all four are considered exporting countries given that their exports of cocoa beans exceed their imports. On the contrary, Guatemala (not a party to the Agreement) has, since 2010, been considered an importing country because its imports of cocoa beans surpass its exports. The Agreement is open for accession, subject to the constitutional provisions of each country's legal system.

Box 9: Cooperatives and the Sustainable Development Goals

Globally, about one billion people are involved in cooperatives in some way, either as members/customers, as employees/participants, or both. In Guatemala, cooperatives duly registered and incorporated are associations which have a legal statute and own a democratically controlled economic enterprise in the service of its members and their common economic, social and cultural needs and aspirations. According to the National Institute of Cooperatives (INACOP), by the beginning of 2018 there were 2,123 registered cooperatives, out of which 969 are currently active, the majority dedicated to agricultural activities. About 13 per cent of Guatemalans are members of a cooperative, with a gender distribution of about 53 per cent men and 47 per cent women. Nationwide, cooperatives produce 60 per cent of basic grains, making them more efficient, within smallholder farming, in relation to the rest of the agricultural sector and therefore crucial to issues related to agricultural activities, nutrition and food security.

ILO defines cooperatives as, by nature, a sustainable and participatory form of business. They create jobs and provide improved working conditions, pay competitive wages, promote additional income through profit-sharing and distribution of dividends, foster gender equality, reduce poverty, and contribute to social integration through their support of community facilities and services such as health clinics and schools. They are considered to be self-help organisations, fostering democratic knowledge, practising social inclusion and allowing for the personal economic growth of their members and their local communities.

The jobs created by cooperatives are either permanent or temporary: the former comprise technical and administrative support, the latter refer to seasonal productive activities involving their members. Nevertheless, job creation is only one of their many contributions to sustainable development, particularly in rural areas. Agricultural cooperatives are recognised for their role in poverty reduction. They help farmers access the inputs required to grow crops, control pests and diseases, and process, transport and market their produce. Furthermore, they facilitate access to extension services and to good quality household supplies and other products at affordable prices. However, the Guatemalan cooperative system faces a number of challenges, reflecting those of society. For instance, women are little represented in traditional cash/export ("male"), crop-related cooperatives such as coffee and cocoa, where crop ownership is mainly male.

At present, a number of farmers' groups and associations within the cocoa, cardamom and potato sectors provide a positive example of how to develop efficient collaborative links that lead to the dissemination of information. With appropriate technical assistance, these organisations could benefit economically from the commercial focus of a cooperative structure to harness their members' entrepreneurial capacity. In the sectors studied, cooperatives can assist with a number of constraints and problems faced by smallholders. These include: geographical remoteness and lack of access to information about food prices on national and international markets; high unit-costs in logistics; access to high-quality inputs; low bargaining power in contractual relations; limited access to finance, technology and extension services; and lack of transport and other infrastructure in rural areas.

Cooperatives have proved their relevance to sustainable development through their contributions to the realisation of the Millennium Declaration Goals and their involvement in strategies towards achieving SDGs 1, 5, 7, 8, 11, 12 and 15. As enterprises that endeavour to further the economic progress of members, while satisfying their socio-cultural interests and protecting the environment, cooperatives are the type of organisation best suited to address poverty reduction and exclusion. The promotion and expansion of this form of organisation has been a national priority for Guatemala since the adoption of the General Cooperative Law in 1978. Thus, if accompanied by a sustainable and inclusive strategy, the cooperative system could certainly help achieve the goals set out in the 'National Development Policy, K'atun: Our Guatemala 2032'.

NOTES

²¹ See Annexes on the product maps in the sectors studied.

²² Cadena Agroalimentaria de la Papa

²³ Analysis in the chapters on potato and cocoa illustrated the higher growth rate of higher value-added products.

²⁴ In the case of cardamom, although there is also growth in demand for sustainable spices, it is still lower than for other agricultural products.

²⁵ The market distinguishes between two broad categories of cocoa beans: "fine or flavour" cocoa beans, and "bulk" or "ordinary" cocoa beans. Fine or flavour cocoa beans are generally from Criollo or Trinitario cocoa tree varieties, while bulk, or ordinary cocoa beans, derive from Forastero trees, with some notable exceptions. As reported by the ICCO, "the difference between fine or flavour cocoa and bulk cocoa is in the flavour rather than in the other quality factors. Fine flavours include fruit (fresh and browned, mature fruits), floral, herbal, and wood notes, nut and caramel notes as well as rich and balanced chocolate bases".

UN MUNDO MEJOR

**POR UN SANTIAGO
ATITLÁN LIMPIO
NO TIREMOS
BASURA EN LA CALLE**



CHAPTER 6



Sustainability
outcomes

Sustainability outcomes

The goal of this chapter is to assess the sustainability of efforts to upgrade, expand and diversify the potato, cocoa and cardamom sectors in Guatemala. More precisely, to ensure such endeavours are in line with the objectives, goals and strategies laid out in the 'National Development Policy: K'atun Our Guatemala 2032', which is the country's highest development framework, drawing inspiration from the 2030 Agenda for Sustainable Development.

The Sustainable Development Goals (SDGs) focus on the elimination of poverty, the reduction of inequality, the protection of the planet and the guarantee that all people will enjoy peace and prosperity. These are the principles behind Guatemala's National Development Policy, whose goals shape collective action in support of an economically viable, socially inclusive and environmentally friendly development path. The next step is to ensure that the policies in the Plan put these goals in to practice, which will have a positive impact on the nexus between trade, agriculture and sustainable development.²⁶ Ensuring the sustainability outcomes of agricultural trade policies can thus boost and develop the rural economy, contribute to overall economic growth and reduce poverty.

Smallholder agriculture, food security and nutrition

Rural agriculture in Guatemala plays a major role in the overall economy. As noted in Chapter 1, about 52 per cent of the country's population lives in rural areas and about one third of its GDP comes from agriculture. Trade-led diversification policies can guide structural rural transformation, provide better and more diverse income opportunities and reverse flows in rural-urban migration.

Guatemala faces challenges in relation to Sustainable Development Goal 2 on ending hunger, achieving food security and improved nutrition, and promoting sustainable agriculture (WFP 2017). The risk is much higher in the Altiplano Occidental and Dry Corridor areas²⁷ due to the volatility of rainfall patterns in the past few years (FEWS NET 2018). This regularly translates into low harvests for small-scale farmers and, for some households in remote, marginalised areas, continuing poverty or an increased risk of falling into poverty.

Agricultural commercialisation and diversification do not automatically have a positive impact on welfare and food security. However, they can, in subsistence or semi-subsistence agriculture, enhance food security and nutrition through the additional sources of cash for households. On the other hand, farmers can expose themselves to higher market risks (e.g. price fluctuations) as well as the danger of diminishing capacity to produce enough food crops. This means that policies for the upgrading and diversification of potato, cocoa and cardamom farming should be designed in a way that does not threaten small-scale farmers' permanent access to enough safe and nutritious food.

Off-farm activities accessible to farmers should also be included in the framework of sustainable policies and strategies as they offer alternative sources of income and provide opportunities for investments in support of smallholders.

Enhancing the commercialisation of small-scale farming should focus on increasing the productivity of land in a sustainable manner. The WFP has pointed out that ameliorating productive farming practices and limiting land degradation contribute to strengthening food security and improving nutrition. These two factors can make food more available to small-scale farmers by raising household income: farmers can commercialise surplus production and thus provide a wider variety of products on local markets, offering a more varied diet to the local population.

In 2003, INE noted that food consumption patterns in urban areas revealed evidence of widespread, inadequate knowledge and education about nutrition, notably a constant increase in the consumption of sweetened beverages and high-fat and high-sugar snack foods. For this reason, Guatemala's National Food Security and Nutrition Policy includes a strategy to develop and strengthen people's capacity to adequately select, acquire, store, prepare and distribute foods. Its aim is to create the market conditions to maintain stability in the general level of basic commodity prices to guarantee widespread access. In this regard, sustainable agricultural trade policy that is inclusive of smallholder farming can improve nutrition, so it is crucial to enhance the coherence of goals and policies between trade, agriculture, food security and nutrition .

Box 10: Underlying technical and agronomic model

Farming practices - The focus should be on low external-input practices well suited to smallholder production. Such practices are location, context and crop specific. They combine features of conservation agriculture (e.g. minimal mechanical soil disturbance, use of organic matter to nourish the soil, rotations or associations of crops), integrated pest management, organic agriculture, crop diversification, multiple crop/pasture systems and multifunctional landscape management, which associates agriculture, home gardening, trees and forest. They are generally knowledge- and labour- intensive with low external input. As widely noted by experts, these practices tend to perform better in well-developed, smallholder agriculture than in estate production because of the favourable incentives in self-employed farming and the significant transaction and monitoring costs of hired labour (HLPE, 2013 footnote). They also tend to be gender-sensitive, leveraging roles and knowledge associated with female farmers.

Improved planting material - The focus should be on non-proprietary genetic material and on research to develop genetic material adapted locally to Guatemalan farming systems and extreme exposure to weather incidents. The focus is on seed-breeding programmes as a public good, allowing the diffusion of locally-adapted genetic material that farmers can freely save, use and exchange. The most suitable planting material must be inexpensive to propagate, which is not the case with most hybrids. This approach should be implemented within the framework of public/private partnerships and should integrate a strong training and extension component.

Mechanical inputs - The envisaged approach promotes investment in technologies that reduce the drudgery of farm work without a change in the farming scale/model. The focus here is on relatively simple equipment and machinery, such as improved hand-held, agricultural tools, harvest bags, push and pull or rotary weeders, and threshing and cleaning equipment. This light mechanisation is also the most gender-sensitive approach, as women tend to be marginalised when heavy capital equipment and machinery are introduced.

Collective and public investment - The envisaged approach favours and stimulates collective and public investment in infrastructure (irrigation, landscape management, knowledge), and emphasises the role of support services and enabling markets.

According to FAO, another potential benefit of sustainable, small-scale farming is associated with the traditional practice of intercropping and other variations of multiple cropping. Monocropping is a common feature of industrial commercial farming but small-scale farmers employ traditional methods associated with family farming. These involve multiple crops and combine subsistence with commercial production, which can result in selling the surplus or in the creation of farmers' groups and associations that pool joint assets and expertise.

Such organisations can be more efficient in terms of both food security and information flow, governance and transparency, including addressing problems related to intermediaries (see Box 7). A combination of tree-planting and creating pasture space and raising livestock over and above traditional agricultural cropping should also be considered - but this should be on a

discretionary basis as different investment in capital and labour in different regions may be required.

Establishing better agricultural practices, which include multi-cropping, and promoting them where suitable agroclimatic conditions exist will have a positive effect on food security. Options for intercropping are summarised in Table 8. Intercropping generally has a positive direct or indirect impact on food security as it enhances the resilience of smallholder agriculture to droughts, floods and changes in rainfall pattern, as well as resilience to internal or external price volatility. Best multiple cropping practice is both crop-specific and region-specific since it depends on a variety of agroclimatic conditions: attention should therefore be paid to the internal knowledge of regional working groups in the potato and cocoa sectors and relevant national research (IICA, ICTA, MAGA).²⁸

TABLE 8: Multiple cropping possibilities

Sector	Intercropped with	Conditions
Cardamom	Allspice, Inga edulis, Eucalyptus	Well suited to provide shade for cardamom trees in the entire planted area. They can be grown under the same agronomic conditions. Help fix atmospheric nitrogen to the soil and prevent erosion. Could cover around 50 per cent of the cardamom-planted area. Growing these trees well requires good agricultural practices and long-term investment plans.
	Clove, Coffee, Vanilla, Liquidambar	Require a warm humid tropical climate with high annual rainfall. They can be grown in highlands at around 700 to 1300 metres above sea level.
	Cocoa, Cinnamon, Pepper	Grow in soft humid climates in lowlands between 200 and 700 metres above sea level.
Potatoes	Maize	Represents the ideal option for crop rotation. The relationship is 2:1 rotation in lowlands (no frost), and 1:1 rotation in highlands (frost).
Cocoa	Inga edulis, Erythrina, Gliricidia (madre cacao), Cassia, Cedar, Palo Blanco	Used as backbone species in specialised shade systems. Well suited to provide shade for cocoa trees in the entire planted-area (below 1000 metres above sea level). Grow at a fast rate and are used as permanent shade for cocoa trees. Help fix atmospheric nitrogen to the soil, prevent erosion, contribute to pest, disease and weed control. The optimal number of shade trees for timber is high, around 144 trees per hectare
	Avocado, Citrus, Zapote	These fruit varieties provide higher profitability to cocoa producers. Fruit harvest within 2 to 3 years. Require high annual rainfall. Except for some avocado varieties, their optimal development takes place at around the same altitude as cocoa (below 1000 metres above sea level).
	Banana, Plantain, Cassava, Pigeon peas	Musaceae species are the most commonly used trees to provide temporary (first 4 years) shade for cocoa. Better suited for lowlands with warm, frost-free, coastal climates.

Source: UNCTAD secretariat, based on consultant work and field mission.

While cardamom has no direct intrinsic value for nutrition, it is, an important source of income for cardamom-growing regions. Intercropping can improve the quality of the product without increasing the number of cardamom trees. It could also address the problem of neglect of cardamom trees in some areas, since farmers attending to other crops with varied frequency are also likely to check their cardamom planting. Potato production has limited potential for intercropping, but when adapted rules of crop rotation are followed, the potato harvest can increase by between about 20 and 60 per cent, depending on the technology.

Currently smallholder farmers in Guatemala tend to use organic fertilisers and there is no clear understanding on whether chemically-produced fertilisers do long-term harm to the soil. However, most of the country's smallholder agriculture is organic by default, especially in the cocoa and cardamom sectors, where, under minimal planting procedures, the farmers' effect on the soil is also minimal.

Factor endowment

Upgrading strategies can unlock additional potential for higher incomes and new employment opportunities for small-scale farmers. The following paragraphs focus on ways and means to activate additional opportunities from factor endowment.

First, rural holdings should be given incentives to enhance multiple cropping techniques. See Table 8: Multiple cropping possibilities. In Guatemala, there is documented evidence of multiple cropping, including intercropping, within the sectors studied as well as the promotion of multiple cropping among rural smallholders (Defenders of Nature Foundation). Such intercropping may be beneficial and is included in a 'Technical Guide for Rural Extension Workers, which follows national sustainable agricultural policy and promotes the use of the extension services of government ministries. It is also highly likely to increase per capita income of small-scale farmers.

It is worth bearing mind that the size of an agricultural holding does not preclude multiple cropping practices; however, an alliance of small-holders under the umbrella of a farmers' group or association can significantly improve income per hectare. Equally, intercropping strategy should be adapted to regional climatic, environmental and other circumstances.

Second, specific traditions and the unique knowledge that smallholders bring to production, in addition to a unique endowment in natural resources, can be part of strategy to reach niche/boutique markets, where purchasing decisions are not based on a product's price but on its history and origin. Thus, although more labour is generally required for sustainable than for conventional agricultural products, production itself need not be economically efficient for sustainable products to enjoy market success.²⁹ Furthermore, artisanal products, or artisanal value-added products, can be efficiently manufactured and distributed at local markets to the local population and visitors.

Infrastructure

One of the major problems of rural Guatemala is geographical remoteness: agricultural activities take place mainly outside the municipal centres where most of the processing and trading are done. The limited number of roads connecting agricultural lands to the main cities are of poor quality and unpaved. And, while some of the more urban areas have seen significant improvements, there has been little improvement in rural areas in recent decades.

The absence of a functional infrastructure system and especially functional roads in rural communities hampers the improvement of livelihoods and creates further barriers to economic and social activities. Poor transport routes, together with a limited flow of information, make rural communities unlikely to seize economic opportunities or adapt to market changes in a timely manner.

The absence of paved roads and means of transport between and among communities and municipal centres places additional stress on the latter as hubs for economic and social services. It also slows down the needed development of rural areas and the improvement of farmers' livelihoods. For some farming communities, the cost of transport to and from the hub raises the pre-market sale costs by 100 per cent.

For example, potato cultivation is most commonly an inherited family activity and many potato farmers do not look for alternative sales' routes. Moreover, as the potato is bulky, it is highly dependent on means of transport, which raises the bargaining power of the intermediary who possesses such means or has access to the market hub. According to information gathered locally, the cost of using an intermediary is about a half the freight cost and about 25 per cent of the farm-gate price, making the price of export from the farm double what the farmer receives.

Infrastructure development is included in the presidential development priorities in the Government General Policy 2016-2020 and is also mainstreamed into the development plans of government institutions. Furthermore, the Ministry of Communications, Infrastructure and Housing includes infrastructure development, comprising electrical, internet and other types of infrastructure, in its yearly operational plans, but mainly by setting targets for financial and physical capital. In this regard, a set of more tangible goals should be set, based on measurable activities such as walking distance in minutes to the nearest road or distance from village to the nearest paved road. This information can serve as a guide the aforementioned Ministry, as well as MAGA, MINECO, and other relevant authorities. Furthermore, gathering such information can be incorporated at minimal cost into the extension services of MAGA.

Gender-informed pro-poor assessment

Special attention should be paid to the heavy influence of socio-cultural norms and traditions in Guatemala in determining the role of women in the household. It results in a higher female school dropout rate (5.295 average schooling age for girls, 6.035 for boys), lower bargaining power within the household, lower participation of women in farmers' groups and overall fewer women engaged in entrepreneurship³⁰. Women's role is strongly tied to their dependency on men. The increasing internal and international migration for work in recent years has resulted in a greater number of female-headed households, making women even more exposed to the effects of the aforementioned socio-cultural norms.

Guatemalan women are no exception to the worldwide phenomenon of overlooking and disregarding women's unpaid work (UNCTAD 2015, 2016). Domestic labour and care are not regarded as equivalent to paid labour and are viewed as the responsibility of women – regardless of whether they have a paid job or not. This both significantly reduces their bargaining power in the household and limits the time available for paid work in addition to unpaid domestic work.

As previously described, the distinction between tasks performed by women and men in agriculture is unclear, especially in small-scale farming households and the sectors studied are no exception. While there is little data on the precise gender breakdown of in-household and on-farm tasks, some important observations can be made based on interviews with stakeholders and international experience. These show that trade-led value-addition and diversification strategies in the potato, cocoa and cardamom sectors, while aiming for greater sustainability of agriculture, can also leverage the position of women in Guatemalan households.

Chapter 5 highlighted improving institutional transparency and capacity in the sectors studied as one of the key steps to achieving sustainable agricultural trade – including training and teaching materials that incorporate gender-informed practices coupled with good agricultural practices.

This is well illustrated in the cardamom sector. Cardamom is light and easy to carry so women should have no significant disadvantage to men in its cultivation and trading. Chapter 2 underlines that proper harvesting practices need to be accompanied with timely access to dryers to acquire good quality cardamom – which, in rural areas, generally requires gaining access to the intermediary and, via his network, access to the dryer. Neither of these steps need exclude women; on the contrary, they are well positioned to do them. Yet dealing with intermediaries and viewing cardamom cultivation solely as an income extraction activity means that it is male-driven. Making intermediation between cardamom producer and exporter more transparent and educating farmers on gender-sensitive, good agricultural practices can create a win-win-win scenario with the potential to increase yields, improve small-scale farmers' livelihoods and empower rural women.

There are already some positive experiences in the cardamom sector, involving female farmers' groups in the north of Guatemala, where women are also managing access to dryers; however, in general they are not involved in further practices, for example trade.

The previous paragraph does not mean that these groups have to be women only. In fact, women's active participation in producer organisations, carrying out various jobs at various levels, has been proven to be a positive contribution to development outcomes (Kaaria et al. 2016; FAO 2016a). It is important to endorse and promote women's participation in farmers' groups and organisations since their current participation in already-active organisations is mostly limited by socio-cultural gender norms and the double burden of paid and domestic labour. To enhance gender equality within such groups, strategies can be envisaged, based predominantly on rules of membership and entrance, promoting better organisational governance and structures, building institutional capacity to ensure long-term gender-sensitive change and protecting and promoting products and by-products produced by women (FAO 2013, [b] 2016).

Resolving the issue of satisfying industrial demand (outlined in Chapter 5) could significantly benefit women in rural Guatemala, as there is no clear gender breakdown of the country's agricultural production chain. Introducing agricultural practices to create a more homogenous product - mostly relevant for cocoa and potatoes, - could be an enabling factor that triggers women's productive and entrepreneurial potential. While these practices generally do not address gender, they can be formulated in a gender-informed way and, specifically, consider how women should participate in training (Embondeira, n.d.). Even for male-

dominated crop production such as potato, some tasks can – and already are – performed by women. For example, women should participate in training in post-harvest procedures on potato classification to seed/consumption/sale, important for crop-quality harmonisation, as they are the people most likely to be performing such tasks.

FAO estimates that granting women access to the same productive resources as men will increase the yield on their farms by 20 to 30 per cent and, as a result, improve livelihoods, diversify household incomes and provide greater food security.

Product differentiation and niche marketing strategies can also have a positive impact on women's engagement in cocoa and potato production. For the cocoa market, obtaining the specific taste and aroma of the cocoa bean is a key pre-requisite. This is carried out in precise steps in early crop care and during the fermentation and drying of the cocoa bean, which can be easily managed by women. In the case of potatoes, introducing classification rules for seed tuber selection and preservation can have a positive impact on the homogeneity of the harvest. Training women on how to follow good practices unlocks pathways towards achieving greater gender equality and enables women to become part of product specification and good practice promotion on international markets. To make this happen, off-takers of niche/specialty products need to integrate considerations of gender equality as a component of procurement and marketing strategies (UNCTAD 2014).

Furthermore, small-scale artisanal and industrial agro-processing in the cardamom sector - for example, potato chips, cocoa drinks, chocolate, baked goods or other products - can create new sources of income for rural women who can sell them independently at local markets and places tourists often visit ('SheTrades' n.d.).

Tourism itself has a strong potential to enable entrepreneurship and self-employment among rural women who can, according to the European Commission, be at the forefront of innovation and diversification in rural areas. They can do so by engaging in or creating microenterprises that develop new activities, production lines and services, for example in agritourism, artisanal food and drink manufacture, craft enterprises, and telecommunication and caring services. Thus, despite being generally less educated and having lower access to resources than men, women often have the added advantage and knowledge of specific local needs, as well as effective interpersonal and communication skills (European Institute for Gender Equality 2016).

On the downside, upgrading trajectories in agriculture can also magnify existing gender disparities in the rural economy because production of higher value-added or niche items tends to favour commercially-oriented farmers who are better educated and have easier access to technological inputs or institutional support. This crowds out the more marginal and vulnerable groups, who

are less educated, more geographically remote and already under-represented in the marketing chain, all factors which characterise the position of women in Guatemala.

Furthermore, gender-blind agricultural policies can widen the gender gap, firstly by enlarging the area for cultivating cash crops, which impinges on the area for growing staple crops where women are more engaged and have greater control. Secondly, women can lose their decision-making power in the case of the commercialisation of subsistence products. Thus, gender-blind policies can further marginalise women in rural societies (Mudege et al. 2015).

Nationwide programmes and private sector initiatives that work with women, but not always as the direct target, provide few opportunities for them to enhance their bargaining position. For instance, despite the fact that gender equality is part of the Guatemalan National Development Policy, there are inconsistencies in its implementation. SEGEPLAN has no review process for putting the recommendations into practice. In many of the municipalities, there is currently an ongoing programme by the Ministry of Agriculture called the 'Family Agriculture Programme to Strengthen the Rural Economy (PAFFEC)', which has a significant bias against women. While the programme itself targets the poorest or most vulnerable rural households to diversify income and provide hands-on training on better practices, women and men are subject to different activities and learning sessions. Such an approach is not only openly gender-biased but it also limits both the economic and social potential of women.

Environment, climate change, deforestation and biodiversity

Trade policies can have an impact on efforts to mitigate climate change just as climate change policies can influence trade. Guatemala, like any other country, is facing environmental challenges that affect the economy. They include loss of biodiversity, deforestation due to pressure from a growing rural and urban population and high levels of internal migration, as well as construction projects. Expanding trade in the potato, cardamom and cocoa sectors can also become part of the problem if carried out unsustainably. More specifically, when environmental considerations are not taken into account, the practice of mono-cropping can widen when there is an increased cultivation of a crop. The following analysis considers the environmental implications of upgrading and diversification trajectories in trade expansion.

Biodiversity and climate change

Biodiversity and climate change are interconnected. So, while climate change has a significant impact on ecosystems, changes in biodiversity can also have an effect on climate change and influence efforts towards its mitigation. According to IUCN,

Guatemala is the fifth biodiversity hotspot in the world, with 13 per cent of its plant and vertebrate species registered as endemic (USAID; FIPA; EPIQ 2002). To preserve its unique ecosystems, the country is taking part in the 2020 Aichi Biodiversity Targets but, despite developing department-level strategic plans such as *Estrategia Departamental de Diversidad Biológica de Huehuetenango 2014-2018*, there has been a low rate of implementation (CONAP 2014)

Preserving biodiversity has a positive impact on agriculture. So, although greater efficiency and productivity generally characterise large-scale industrial production, sustainable smallholder systems are a better fit when it comes to preserving biodiversity, despite the need for more complex governance. Heavily capitalised production tends towards monocultures, which lower biodiversity in the medium and long-term and lead to overall environmental degradation. Diversified farming structures that incorporate livestock and trees are more knowledge-intensive but are usually more socially and environmentally inclusive. Enabling their development plays an essential role in the preservation of biodiversity.

Potato cultivation requires open fields with full sun exposure, which can easily lead to soil degradation and erosion without appropriate management. Crop rotation, polycropping, contour planting, and fertilisation can be used to limit the environmental impact, although it is important to regulate the use of fertilisers since they can provoke soil contamination and degradation in the long term (FAO 2008). Guatemala's current potato harvesting is low-yield (25 tons/hectare compared to 60 to 80 tons/hectare for the major global potato producers) and takes place throughout most of the year. The impact on the environment is two-fold: it depletes the land - potato fields need a lot of space - at the same time as decreasing pressure for seasonal storage facilities. Introducing proper post-harvest techniques would increase productivity and have a positive overall impact on the economy and the environment.

For the potato and cocoa sectors, both plants have a diverse genetic pool, which, as pointed out in Chapter 3, has a prohibitive effect on secondary processing, rendering value-upgrading unfeasible. Selecting certain varieties of potato for trade and preserving others for domestic consumption could increase the resilience of smallholder farmers to trade shocks: thus, sufficient quantities of the selected variety can be used for processing while the other varieties preserve unique biodiversity.



Cardamom - in contrast to cocoa and potato sectors where traditional knowledge on cultivation has been accumulated over the years - is not endemic to Guatemala and farmers cultivate it strictly as a source of cash. The lack of traditional knowledge and information frequently leads them to clear space for cardamom cultivation, leaving the tree without shade and unattended until it produces flowers. This decreases the cardamom tree's productivity by around 30 per cent and has a negative impact on biodiversity. Introducing sustainable forest management in cardamom-producing regions and providing information and training will promote intercropping with other plants (see Table 8 for options) and have a positive effect on the resilience of local ecosystems.

Water access

Access to water is self-evidently a pre-requisite to all agricultural activity. In Guatemala, sowing is planned around the rainy season to facilitate the watering of plants and ensure a certain humidity. However, in recent years, the volatility of rainfall has affected crop yields and increased the pressure for access to water. Furthermore, the drought has increased dependency on irrigation, which is not available everywhere.



It is estimated that up to 32 per cent of the cardamom harvest was lost in 2016 due to the lack of humidity, especially in the northern parts of the cardamom-growing area. Forest cover preserves water levels and conserves organic matter, and trees such as Allspice, *Inga edulis*, *Eucalyptus* can be used to shade cardamom and cocoa, improving the level of humidity, hence the quality of the products.

For the potato sector, there is a significant intra-regional difference between fields with and without irrigation, as indicated in Table 2. Where irrigation systems are in place and there are no severe frosts over the course of the year, potatoes are rotated with corn (2:1 per year) as they need large physical capital resources, such as storage and pest control. during the rainiest season. Where there is no irrigation, the rotation is (2:2) with two harvests per year, resulting in one year fully devoted to potato cultivation and the next to another crop such as corn. Absence of potato irrigation increases the exposure of small-scale farmers and lowers their food security. The promotion of responsible irrigation, most likely through low-pressure irrigation mechanisms, will therefore have an economically beneficial effect on their livelihoods and limit the impact of agriculture on water resources.

Deforestation

Cardamom is a forest plant that yields around a 30 per cent higher harvest when growing under the shade of a taller tree. The previously-noted limited local knowledge on cardamom cultivation results in an absence of shade in 53 per cent of cardamom-growing communities or in planting cardamom in the place of forest. Developing national rules for sustainable forest management and interrelating rules for cardamom cultivation is therefore an important step towards preventing deforestation. In some farmers' organisations and associations (e.g. FEDECOVERA) there is an established practice of training that explains the benefits of forest coverage. ADECAR, the association of the cardamom exporters has promoted similar activities but the presence of a complex network of intermediaries complicates the dissemination of information. Reforestation projects can also include cardamom cultivation to increase the forest's sustainability³¹. It has also been integrated into reforestation efforts as it enhances the short-term economic benefits to smallholders of preserving forests.

Monocropping and large-scale commercial cropping increase deforestation and can have significant environmental impacts. While cocoa is traditionally seen as part of a more diverse ecosystem, efforts to expand the potato trade can have a negative impact on the environment. In this regard, plant rotation, contour farming, and the introduction of organic fertilisers can address the need for improvements in yield. Thus, enhancing agronomic models that are based on multiple cropping can reduce harmful effects, have a positive economic impact, and can even be used as a part of efforts at reforestation.

Inequality

Reforms based on sustainable agriculture lower inequality by raising the income of small-scale farmers and providing them with greater food security. It is estimated that cardamom farmers receive about 70 per cent of their annual income from

this activity; potato farmers receive around 30 to 70 per cent depending on the level of specialisation; and cocoa farmers less than 25 per cent. Cardamom-growing families are highly dependent on income from cardamom sales: introducing other cash crops will diversify their source of income, ensuring their activities are more sustainable.

Without sustainable reforms that have a positive impact on rural living standards, small-scale farmers tend to seek jobs in more urban areas, limiting the agricultural production base and increasing demand for food in urban areas. Such internal migration fuels unsustainable urbanisation, increases urban poverty and accelerates pressure on urban infrastructure. The loss of young people, leaving an ageing population in their place, is a critical threat to the ongoing vitality of rural economies and communities. The threat applies across sectors but may be particularly acute in agriculture where the average age of farmers is constantly increasing. Equally, retirees to the countryside force up house prices and restrict the available housing stock for young people, further exacerbating the problem of retaining them. An ageing population also brings new challenges to rural areas – as well as new economic opportunities in the form of the delivery and accessibility of health and social services to older and less mobile people. Revitalising the rural economy through the diversification of income opportunities that are attractive to a younger population could help curb internal migration flows.

Fresh potatoes comprise a significant part of the consumption of poor households, but the share of fresh potatoes in overall food consumption is decreasing as processed potato products comprise an increasingly large share in the consumption of middle-income households. Thus, the Guatemalan small-scale farmer, by producing and relying mostly on fresh potatoes, is not reaching the middle- and high-income markets, which tend to consume potatoes produced mostly abroad.

Ethnically, only cardamom production is predominantly linked to indigenous groups whereas farming cocoa and potatoes is spread evenly throughout Guatemala. Fresh potatoes, as previously noted, comprise a higher share of the food

consumption of the poorer households, which are most likely to be indigenous population groups (INE 2014) – which means that improving the livelihoods of farmers cultivating potatoes may improve the livelihoods of the poorest households. For cocoa production, the prioritised municipalities mainly comprise ethnic minorities, predominantly the Q'eqchi' group: thus, improving the livelihoods of cocoa producing families will also have a positive impact on the lives of ethnic minorities.

SEGEPLAN has created a development corridor for the northern part of the country called the 'Comprehensive Development Plan for the Transversal Strip of the North'. It targets the value-upgrading and market-inclusion of rural farmers alongside an improvement in their living conditions. The area is specifically under-developed, with low access to health, infrastructure, education and other services. The plan draws attention to an incapacity to access global markets: enhancing the operation of farmers' groups in this region is a sustainable way to improve the lives of the local rural population.



NOTES

²⁶ This nexus is widely acknowledged and is part of UNCTAD's mandates in the Accra Accord, the Doha Mandate and the Nairobi Maafikiano.

²⁷ The Western Highlands region (Altiplano Occidental) is located in the north-western region and comprises a number of municipalities from the departments of Quetzaltenango, San Marcos, Huehuetenango and Totonicapán, the latter not covered in this study. The Dry Corridor region (Corredor Seco) covers parts of the departments of Quiché, Baja Verapaz, El Progreso, Guatemala, Zacapa, Chiquimula, Jalapa and Jutiapa.

²⁸ Grupo Técnico – Cadena Productiva de Papa. Agrocadena de Cacao Working Group for the Northern Region and the Southern Region, respectively.

²⁹ There are no widely accepted guidelines on indicators for sustainable agriculture but a well-based guide (2001) can be found on the website of the European Commission's Agriculture Directorate-General accessible at: https://ec.europa.eu/agriculture/publi/reports/sustain/index_en.pdf

³⁰ Information based on interviews during a mission to Guatemala. Despite no official statistics, it is a common phenomenon for the majority of lower middle-income countries and countries dependent on subsistence agriculture. As detailed in the upcoming UNCTAD trade and gender report on MERCOSUR, it is a very common phenomenon in Latin American countries.

³¹ An example of the success of such efforts is the FUNDAECO project in Cerro San Gil area: <http://www.livelihoods.eu/projects/fundaeco-guatemala/>

Policy recommendations

Guatemala, like other developing countries, faces a critical need for the structural transformation of its economy: while most of the population resides in the rural parts of the country, international trade currently provides disproportionately more benefits to the urban population. Agriculture is especially important as almost all the rural population is involved in subsistence farming.

To redress this imbalance, this study outlines policy trajectories in the cocoa, potato and cardamom sectors which build on the comparative strengths of the Guatemalan rural economy, provide more equal benefits to small-scale farmers, leverage existing traditional knowledge and practices, and highlight the present and potential role of women. These trajectories support environmental goals (i.e. protection of biodiversity, preservation of natural resources and resilience to climate change), draw on social welfare objectives (i.e. food security and nutrition as well as social inclusiveness), and address various objectives related to economic and social equality (including gender equality and more equitable distribution of income) and economic development (i.e. increased incomes and more diversified income opportunities). They take into account internal and external factors and outline a development path that is sustainable and enhances and revitalises the rural economy.

Furthermore, the study formulates policies, options and actions to develop Guatemala's trade in the three sectors studied in a way that is both socially and economically inclusive and environmentally sustainable. Based on technical backgrounders, international expertise and consultations with national stakeholders, it makes five key policy recommendations:

1. Enhance policy coherence and multi-stakeholder dialogue to guide national action supportive of the development of smallholder farmers

Institutional and policy coherence is crucial to implementing sustainable agricultural trade strategies and key to both the country's sustainable development and the enhancement of its population's livelihoods. Enhanced policy coherence means:

First, inter-ministerial cooperation so that trade and agricultural policies, are aligned with, and not in opposition to, policies for the preservation of natural resources. Such coordination will

ensure that sustainability is mainstreamed into issues related to the agricultural trade. This can be done through cooperation incentives, regular coordination meetings and policy dialogue.

Second, agricultural policy should integrate solid rural-oriented development policies inclusive of small-scale farmers, and encourage the participation of commercially-oriented, micro-, small- and medium-scale entrepreneurs. To do this, the various stakeholders who lack traditional economic bargaining power should be included in policy dialogue and development. The multi-stakeholder approach in the potato and cocoa chains (Technical Group – Productive Chain of Potato; Cocoa Agricultural Chain Working Group for the Northern Region and Southern Regions) has shown that interactions between the various levels of actors in the value chain can have an extremely positive impact on practices in both sectors, resulting in greater market opportunities³² for Guatemalan products.

Third, the alignment of agricultural and economic policies should be consistent with Guatemala's overall development strategy: 'National Development Policy and Plan K'atun: Our Guatemala 2032'. A mechanism to verify progress is therefore highly recommended, for example a periodic review of policies, strategies and plans, conducted by a collegiate, development-oriented technical committee that includes SEGEPLAN and SEPREM, among others.



UNCTAD team with Vice Minister for Economic Rural Development, Ministry of Agriculture (MAGA), 2018

2. Promote the creation of farmers' groups and associations and participatory forms of business

Guatemalan rural farmers are not at present included in the structures serving the country's domestic market for high-value, processed, agricultural produce. Promoting the creation of farmers' groups and associations would improve the flow of information between rural farmers and urban markets, while preserving the current underlying smallholder agronomic model.

For example, fresh potatoes can be processed into upgraded potato products only when enough homogenous potatoes of a similar quality are simultaneously available. Pooling resources and disseminating the same information within a farmer's group would render the upgrade economically feasible and thus provide farmers with an additional source of income. The current fragmentation of the production base and absence of coordination creates an additional hurdle to possibilities for upgrading for the private sector.

Farmers' groups and associations are inclusive of the poor and remote and can become a market outlet for smallholder farmers. Furthermore, they can be crucial to the transformation of smallholder farming, gains in productivity, crop diversification and an increase in income and thus contribute to the reduction of poverty and improvement of rural livelihoods.

Farmers' groups and associations also lower the relative cost of extension services because information is transmitted faster through their internal links. This has a positive impact on the implementation of policy. They can assist with the creation of farmers self-help groups through their internal pool of knowledge and expertise and provide a link to other farmers' groups with common, similar or complementary interests, overcoming issues such as asymmetry of information and helping achieve economies of scale.

Information gathered for this study reveals that, nationally, there are few farmers' groups and associations within the sectors studied: 80 per cent of farmers working in the cardamom sector do not belong, and, of the almost 90 per cent of farmers who cultivate potatoes, fewer than 10 per cent do belong, to a farmers' group or association. A similar situation is thought to exist in the cocoa sector.

In addition, farmers' groups and associations could increase the capacity of smallholders to set up green and sustainable small businesses and thus diversify their income (FAO, 2015). Such organisations are also more active in developing sustainable policies as they can pool and disseminate knowledge much faster than geographically-scattered farmers.

Policy should provide for the development of blueprints on the type and form of farmers' groups and associations and

extension officers should be trained, or provided with materials, on how to set them up.

Creating farmers' groups and associations can help address the gender gap through female education and access to resources as well as the development of their entrepreneurial skills. In a male-dominated culture, women's groups can also have a positive influence on the general "unaccountancy" of female labour, which tends to be the case in subsistence-oriented farming. Furthermore, gender equality can be enhanced by rules or programmes targeting women, such as introducing quotas for female membership in groups or training sessions (e.g. no less than 50 per cent), or by targeting female-only groups. Farmer's groups and associations endeavour to support their members' economic progress and socio-cultural interests while protecting the environment. As such, they are the type of organisation best suited to address poverty reduction and exclusion.

3. Introduce competition policy and legislation



UNCTAD capacity-building workshop, 2018

Competition policy is instrumental to the functioning of a market economy: it addresses issues such as productivity, innovation and transparency by incentivising market-led, competitive behaviour in the private sector; and enhances the efficiency of the public sector. Thus, a national authority that creates and supervises a legal and policy framework for competition will have a positive effect on the growth and sustainability of Guatemala's economy.

The need for competition rules and enforcement is well illustrated by the three sectors in this study. For example, price fixing throughout the cardamom production chain is an indication of horizontal agreements among intermediaries. Within a context of competition law, this anti-competitive price-distortion by a group of market participants is generally regarded as cartel behaviour. The lack of competition law in Guatemala means such

behaviour is not illegal and no sanctions can be imposed unless the anti-competitive practices are prohibited by other laws.

Competition policy encourages market behaviour and promotes more efficient utilisation of resources in general, further incentivising market behaviour as a contribution to sustainable growth. Guatemala lags behind the majority of countries in adopting competition policy and legislation³³ although the subject has been under discussion for over a decade and the country is already in default of its international obligations in this regard. Nevertheless, to guarantee their constitutionality and avoid any vagueness that could be misinterpreted in favour of political interests, there needs to be a complex legal and economic analysis of the thinking behind every possible restriction.

Moreover, Guatemala's competition policy and legislation framework should aim at enforcing market rules that encourage domestic and foreign investment. Such additional inflows of capital could bring together the resources needed to upgrade the quality of local products, boost efficiency and yield a more sustainable form of economic development. Investment in the sectors in this study could, for example, be in the medium-scale production of origin-based, single-aroma, single-flavour chocolate, or in the manufacture of artisanal chips, among others. Ensuring fair competition in economic activity is the prerequisite to attracting sustainable investment into agricultural value chains.

4. Target the markets for non-traditional, sustainable agricultural products

Targeting the growing market for high value, niche/boutique products can bring significant benefits to rural farmers in Guatemala. However, there are a number of challenges.

- *Structured agricultural supply chains.* In general, niche/boutique supply chains are buyer-driven and, while providing opportunities for the inclusion of geographically remote smallholder farmers with little traditional bargaining power, they require a fully coordinated and transparent chain of actors. Guatemala's rich and diverse genetic pool provides an incentive to target markets for single-origin, single-flavour chocolate as well as similar markets for other products. This requires coordination between the buyer and local smallholder farmers (most likely a farmers' group or association) through a structured agricultural supply chain. This could be a contractual farming arrangement, an outgrower scheme, or it could take other forms. These links can prove highly beneficial through the supply of extension advice, standard compliance training, and information on best practices and agricultural inputs.
- *Use of local genetic material and appropriate techniques.* Although targeting niche/boutique markets can help

overcome volume constraints, there still need to be sufficient quantities of the homogenous primary product. With regard to the selection of varieties and production techniques, appropriate training on pre- and post-harvest management should be introduced. Chapter 3 describes the management techniques involved during the pre- and post-harvest stages of cocoa, which can significantly affect the resulting product's flavour and taste. Leveraging unique traditional knowledge, local traditions and cultural specifics while raising awareness of the importance of following prescribed production techniques can not only yield a sufficient quantity of the primary product but also be a part of the "story" that traditionally accompanies the branding of niche/boutique products.

- *National strategy.* There are also a number of domestic ways to include Guatemalan smallholder farming in the product value chain. First, the local tourism and hospitality industry can provide a market for niche/boutique products without facing export certification and other procedures. Linking the hospitality industry to inclusive agricultural production chains is less costly in terms of time and resources and can serve as a stepping stone towards further accessing export markets for niche/boutique products. Second, the option of devising a national marketing strategy should be explored to raise awareness on how buying "Guatemala-made" can revitalise both existing domestic links and the rural economy. Enhancing the domestic market not only increases demand for local products but also hedges against external (i.e. international) price shocks.
- *Certification.* Guatemalan economic and trade policy should embrace the comparative advantage of the specific characteristics of its agricultural products, for which traditional competition indicators such as price and volume do not apply. It is especially important to introduce and promote a proper agricultural certification scheme that is in line with world-accepted norms for varieties native to the country. Their unique characteristics of taste and texture can then be certified through locally established norms and processes, specific to Guatemala. Certain buyers may subsequently accept the national certification for sustainable agriculture as an indication of a premium product in the same way as for VSS products.

5. Promote existing Good Agriculture Practices through various channels

Good Agricultural Practices (GAP) constitute a guide to systems of production that are based on principles of sustainability, are ecologically safe, yield products of higher quality, do no harm, and contribute to food security.

GAPs should combine improvement in short-term resilience with improvement in long-term environmental sustainability. As regards short-term resilience, GAPs can enhance the production

processes of smallholder farmers, increasing their level of income and ameliorating their livelihoods. The most efficient way of promoting GAPs is by targeting farmers' groups and associations (see point 2), which can pool skills and leverage local mechanisms for transmitting information. With regard to improvement in long-term environmental sustainability, properly formulated GAPs should go beyond the provisions of MAGA to englobe sustainability (SEGEPLAN), nature conservation (MARN), and enhanced economic potential (MINECO). Furthermore, they should be gender inclusive (SEPREM) and enhance the competitiveness of Guatemalan agricultural products (PRONACOM). In this regard, GAPs can be used as a means achieving policy coherence (see point 1) through intra-ministerial dialogue.

Account should be taken of other GAP provisions that can improve smallholder productivity such as:

- Nutritional and fertilisation recommendations, apart from setting national rules on harmful substances, must be based on specific agronomic conditions;
- Seed breeding systems that provide small-scale farmers with seeds of local varieties which are pest and disease resistant, heat resistant and GM-free;

- Introduction of appropriate pre- and post-harvest management techniques aimed at a decrease in harvest loss;

Promotion of sustainable, small-scale farming systems that combine functional complementarity between crops and preservation of biodiversity (e.g. multiple cropping).

It is important to invite feedback on GAPs (and Good Manufacturing Practices (GMPs) to ensure that Guatemalan agriculture transforms in a way that improves productivity, but remains locally-specific, inclusive of smallholder farmers, climate resilient and preserves biodiversity.

GAPs should be looked at in conjunction with GMPs as the latter can also provide recommendations applicable to production, processing and food transport. Smallholder farming agronomic models can then be of benefit both to product quality and to an amelioration of the conditions of workers and their families, including their health and wellbeing. Furthermore, care should be taken to ensure that the GAPs include issues of gender equality and female empowerment. An exploration of new gender-friendly interventions that build on existing farming models is also recommended: the easiest way is by leveraging experiences from the agricultural sector within UN Women and the World Food Programme, and mainstreaming the activities of SEPREM.



NOTES

³² For example, in the potato sector, business relationships with Frito Lay, Walmart, Hortifruti, and others.

³³ According to the World Bank, at least 100 countries have a competition policy that is both adequate and functional.

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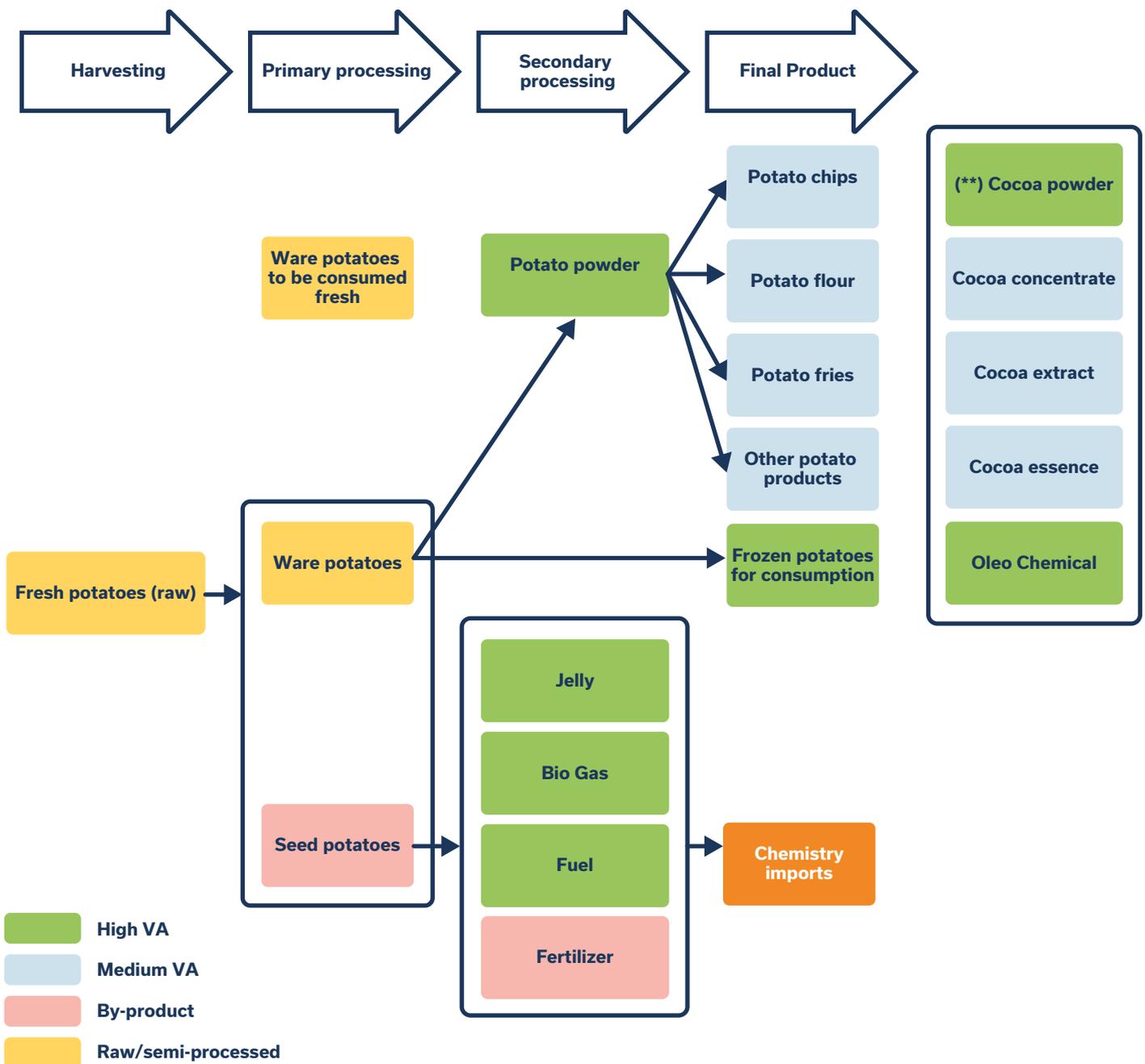
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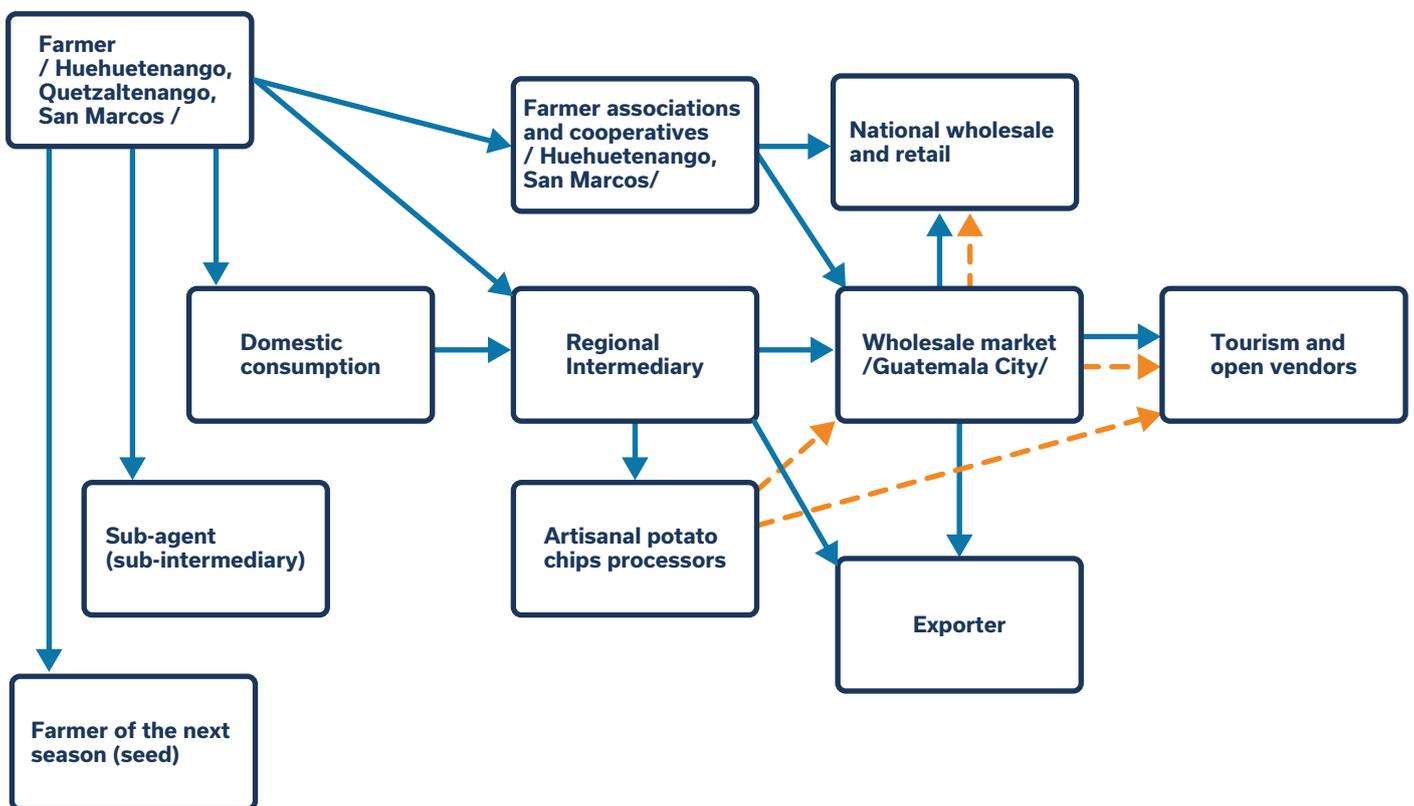
<https://www.globalforestwatch.org/dashboards/country/GTM>.

Annexes

Annex 1



Annex 2

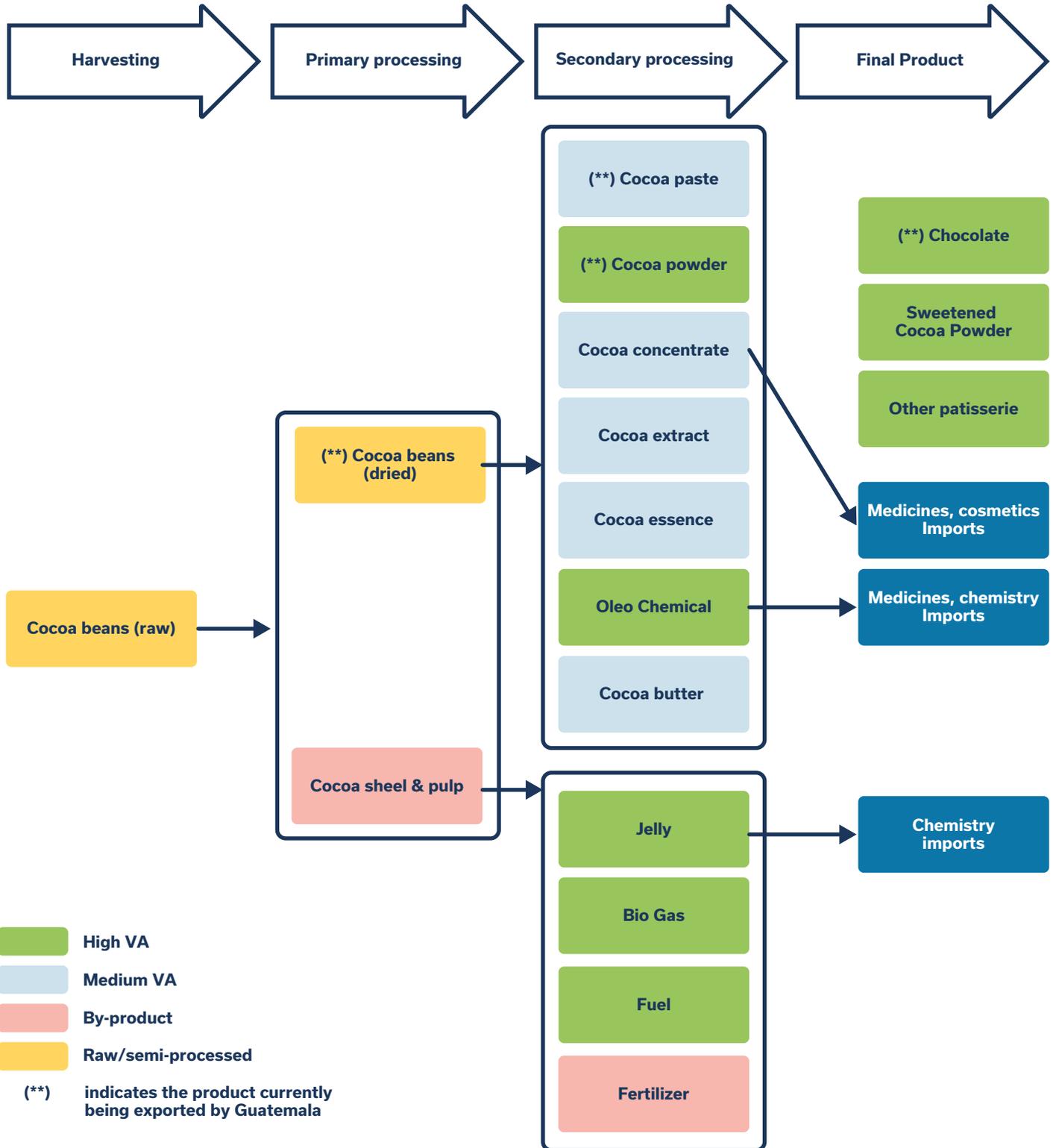


→ Fresh tubers

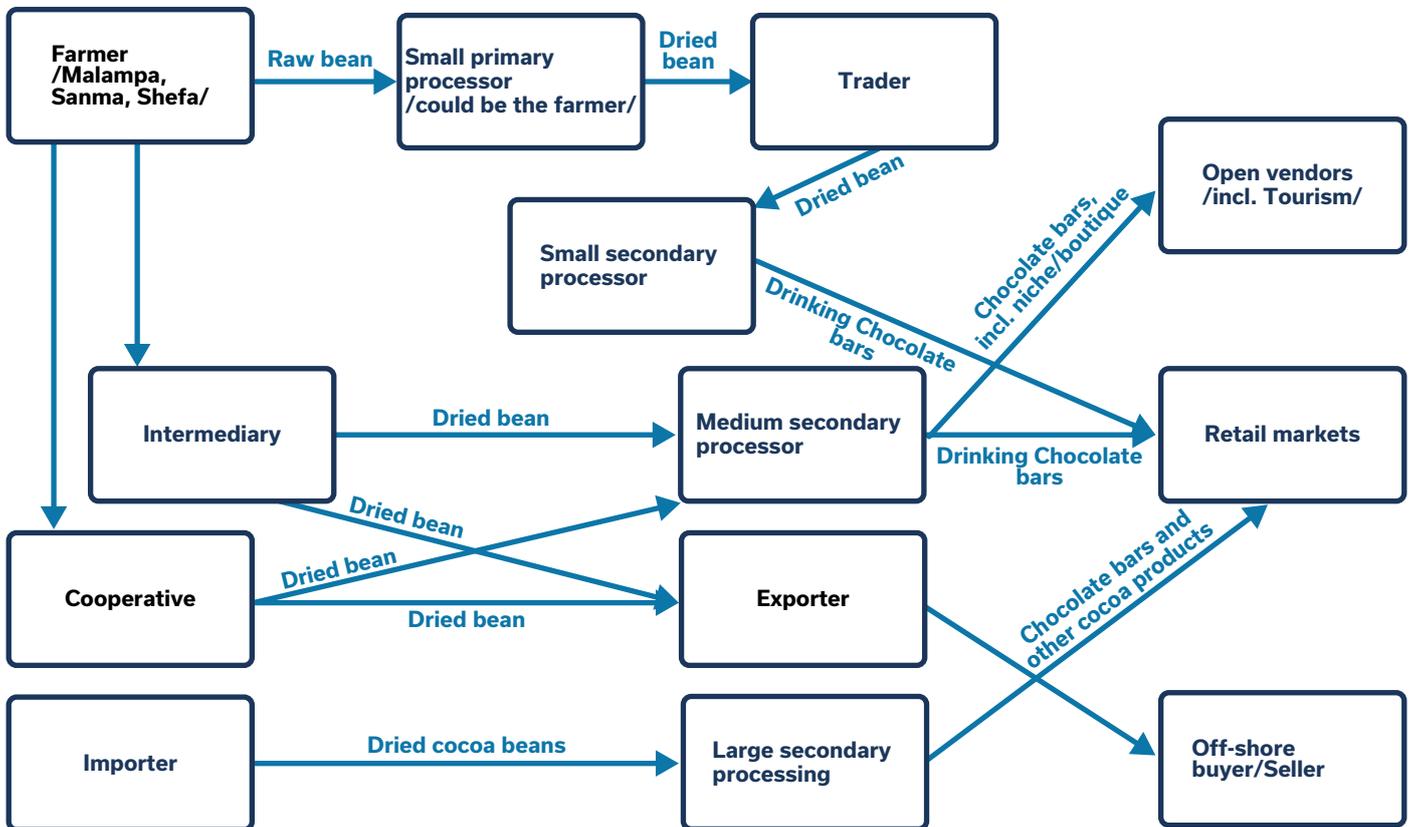
- - -> Potato chips

(**) - indicates the product currently being exported by Guatemala

Annex 3

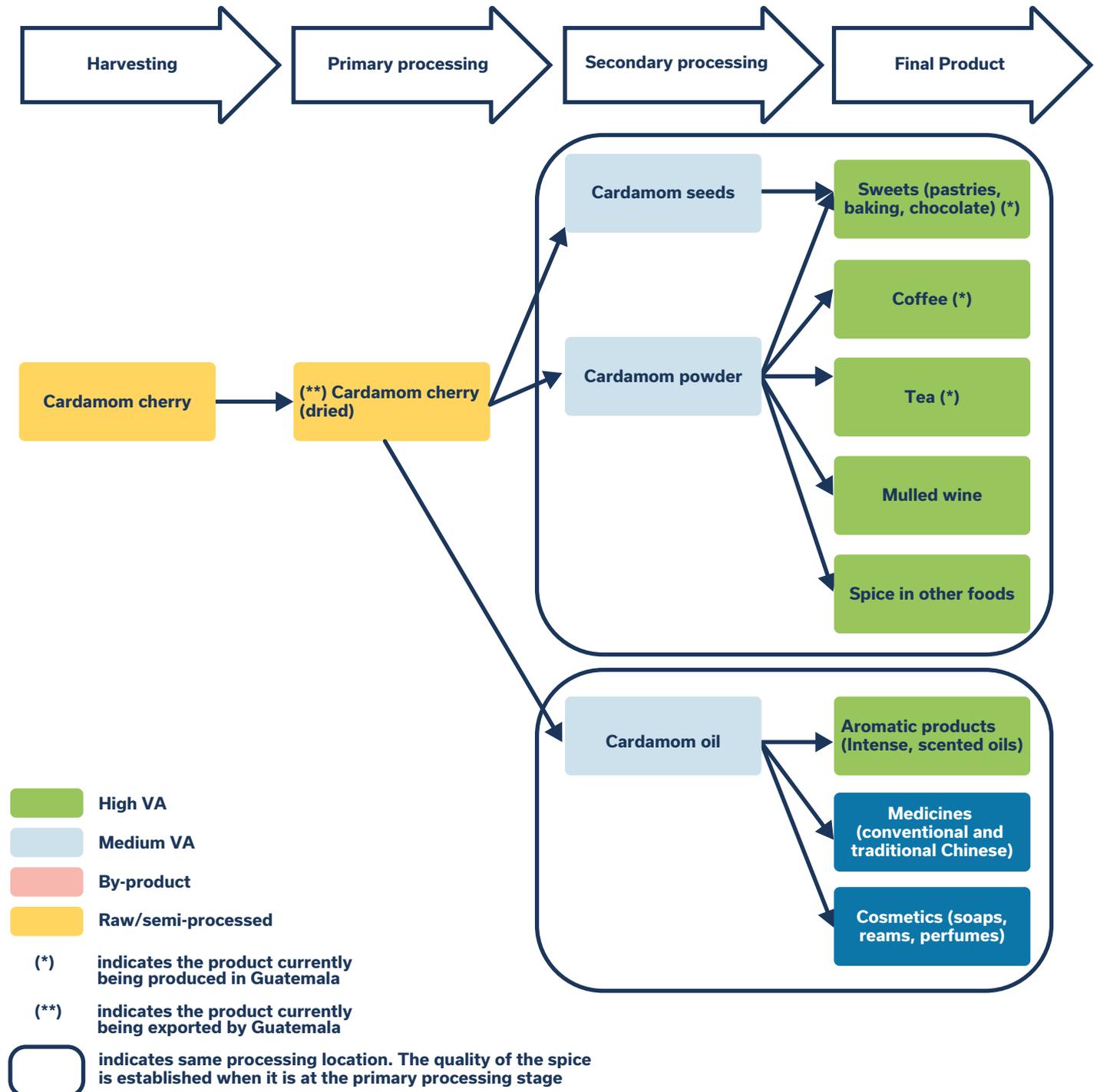


Annex 4

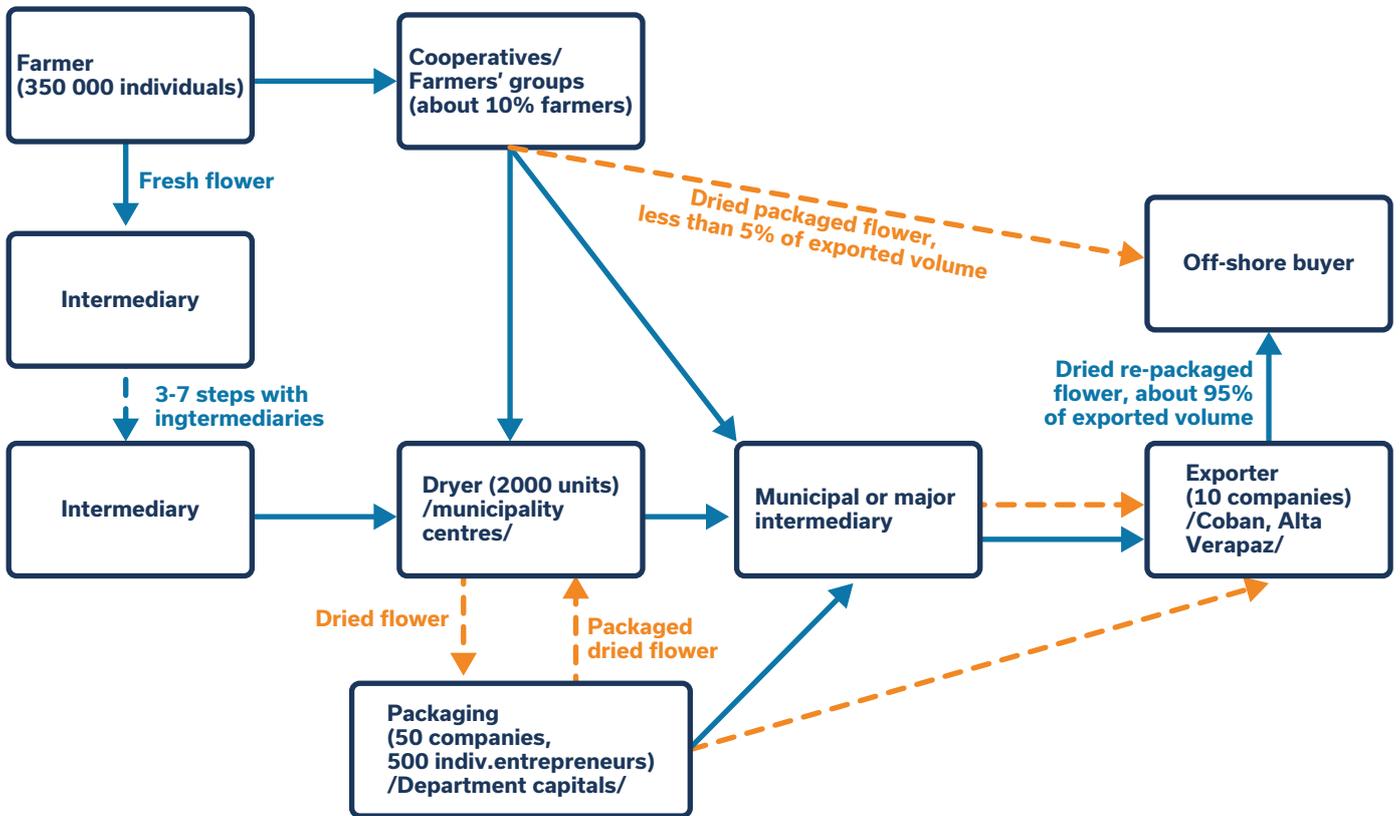
Cocoa sector actor-geography map
(only exported products)

→ The relationship is likely to not involve shipping

Annex 5



Annex 6











Harnessing Agricultural Trade
for Sustainable Development

Guatemala: potato, cocoa and cardamom