

# NEPAL

## NATIONAL SECTOR EXPORT STRATEGY

### LARGE CARDAMOM

2017-2021



Government of Nepal



International  
Trade  
Centre

This national sector export strategy was developed on the basis of the process, methodology and technical assistance of the International Trade Centre (ITC) within the framework of its Trade Development Strategy programme.

ITC is the joint agency of the World Trade Organization and the United Nations. As part of its mandate of fostering sustainable development through increased trade opportunities, the ITC offers a suite of trade-related strategy solutions to maximize the development payoffs from trade. ITC-facilitated trade development strategies and roadmaps are oriented to the trade objectives of a country or region and can be tailored to high-level economic goals, specific development targets or particular sectors, allowing policymakers to choose the solution that meets their needs.

The views expressed herein do not reflect the official opinion of ITC. Mention of firms, products and product brands does not imply the endorsement of ITC. This document has not been formally edited by ITC.

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Photo: ITC

## ACKNOWLEDGEMENTS

The Large Cardamom Sector Export Strategy of Nepal was developed under the aegis of the Ministry of Commerce, with the financial support and technical assistance of the ITC Trust Fund.

The document benefited particularly from inputs and guidance provided by the members of the large cardamom core team that steered the formulation of the Strategy, as listed below.

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## ACRONYMS

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<b>ADS</b>	Agriculture Development Strategy	<b>HS</b>	Harmonized System
<b>AEC</b>	Agro Enterprise Centre	<b>ISO</b>	International Organization for Standardization
<b>CAGR</b>	Compound Annual Growth Rate	<b>ITC</b>	International Trade Centre
<b>CDC</b>	Cardamom Development Centre	<b>KUSOM</b>	Kathmandu University School of Management
<b>CFL</b>	Central Food Laboratory (India)	<b>MoAD</b>	Ministry of Agricultural Development
<b>CFR</b>	Cost and Freight	<b>MoC</b>	Ministry of Commerce
<b>CIF</b>	Cost Insurance Freight	<b>MRL</b>	Maximum Residue Level
<b>CoC</b>	Code of Conduct	<b>MSL</b>	Mean Sea Level
<b>DADO</b>	District Agriculture Development Office	<b>NARC</b>	Nepal Agricultural Research Council
<b>DFTQC</b>	Department of Food Technology and Quality Control	<b>NCARP</b>	National Commercial Agriculture Research Programme
<b>DoA</b>	Department of Agriculture	<b>NECTRADE</b>	Nepal Enhanced Capacities for Trade and Development
<b>EIF</b>	Enhanced Integrated Framework	<b>NTIS</b>	Nepal Trade Integration Strategy
<b>ESA</b>	European Spice Association	<b>PAH</b>	Polycyclic Aromatic Hydrocarbon
<b>EU</b>	European Union	<b>PoA</b>	Plan of Action
<b>FLCEN</b>	Federation of Large Cardamom Entrepreneurs of Nepal	<b>ppb</b>	Parts per billion
<b>FNCCI</b>	Federation of Nepali Chambers of Commerce and Industry	<b>ppm</b>	Parts per million
<b>FOB</b>	Free On Board	<b>QM</b>	Quality Management
<b>GAP</b>	Good Agricultural Practice	<b>R&amp;D</b>	Research and development
<b>GMP</b>	Good Manufacturing Practice	<b>SPS</b>	Sanitary and phytosanitary
<b>HACCP</b>	Hazard Analysis and Critical Control Points	<b>TEPC</b>	Trade and Export Promotion Centre
		<b>UAE</b>	United Arab Emirates

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Photo: ITC, Large Cardamom Plant

## FOREWORD BY MR. MEEN BAHADUR BISHWAKARMA, HON. COMMERCE MINISTER



The international trade scenario and global business environment are changing at a fast pace – presenting new opportunities as well as challenges for Nepal. Nepal has numerous prospects to develop agro and forest based products as well as manufactured niche products. These products have been reflected in the Nepal Trade Integration Strategy 2016. The Strategy has also highlighted major crosscutting issues demanding immediate intervention for export sector development.

Large cardamom is one of the oldest native spices and cash crops of Nepal and Nepal is one of the world's largest producer and exporter. It provides a lucrative business for all value chain actors resulting in high socio-economic benefits for the country. Nepali farmers and traders need to take all necessary steps to expand their leeway and increase the share of benefits from the world market. This sector can make real contributions to alleviate poverty and help raise living standard of ordinary people, in particular, rural communities through export-led growth.

This Sector Export Strategy has highlighted all issues related to competitive constraints while identifying market opportunities and defining strategic thrusts to ensure significant broad-based socio economic growth. The Strategy provides a roadmap to improve export competitiveness through strengthened institutional supports and stimulation of trade with the provision of product research and market promotion support services.

I am pleased to launch this Sector Export Strategy which is outcome of joint efforts of public and private stakeholders. The Government of Nepal is committed to the implementation of this strategy with a view to realizing the vision and strategic objectives as set out in the Strategy. Finally, I look forward to an intensive collaboration and support of all concerned ministries, agencies, donor communities, private sector and other stakeholders to play a significant role as indicated in the plan of action and contribute to achieving the objectives of the Strategy.

## FOREWORD BY MR. NAR BAHADUR CHAND, HON. STATE MINISTER FOR COMMERCE

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Export has been seen as a key economic driver for the sustained economic development of Nepal. It plays an important role in helping achieve the Government's vision of graduating from LDC by 2024 through high economic growth and reduced poverty.

With the Trade Policy 2015 and NTIS 2016 now in place, the Government is working on a integrated approach to create an enabling environment for long term growth through which the benefits will be sowed at all levels of the society, building long term sustainability and economic prosperity to all.

The creation of National Sector Export Strategy (NSES) – Large Cardamom 2017-2021 is a key initiative in integrating trade for economic development. Nepal is one of the largest producer and exporter of large cardamom. Large cardamom provides a regular stream of cash income for rural communities. With a growing market in South Asia and beyond and increasing market competition, the creation of a sector export strategy comes at an apt time to look at further strengthening the sector.

Despite notable export prospects there is still further work to be done in enhancing trade in the Nepali context. Both the Government and the private sector have realized the importance of proactively seeking new market opportunities and maximizing our export potentials. The NSES provides a structured approach to focus on improving production and achieving greater market penetration and diversification.

I am confident that NSES will serve as action-oriented blueprint for enhancing trade performance in the sector and develop a coordinated mechanism with participation from both the public and private sector in achieving the goals set out in the NTIS 2016 and further strengthening the sector making it competitive in the international market.

I would like to thank International Trade Center for their technical support in developing the strategy paper and all relevant Ministries, agencies, developmental partners and private sector participants for their valuable contribution in the development of the NSES. The Government of Nepal is fully committed to promote an export led economic growth and would encourage all to join hands and work together in making the vision of a Developing Nepal through economic prosperity reality.

## FOREWORD BY MR. CHANDRA KUMAR GHIMIRE, COMMERCE SECRETARY



The Trade Policy 2015 aims at strengthening supply capacity, enhancing competitiveness through value chain growth, and increasing global market access. In line with the Trade Policy 2015, Nepal Trade Integration Strategy (NTIS) 2016 has been formulated to integrate and mainstream trade in national development agenda, and to address the outstanding competitiveness challenges being confronted by the Country's export sector.

The NTIS 2016 broadly focuses on product development and strengthening supply capacity of priority products with a view to enhancing trade sector's contribution to GDP. The emergence of new competitors, and shifts in global market trends necessitate Nepal to develop sound sector specific plans for its priority export potential products. In this regard, the Government of Nepal, Ministry of Commerce involved the International Trade Center (ITC) in extending its technical assistance in the design of National Sector Export Strategy (NSES) for large cardamom. The NSES is prepared through wider-level consultations with agencies concerned, including private sectors and other stakeholders. It includes detailed strategic objectives and a 5-year Plan of Action and framework for successful implementation.

It is timely and contextual to explore new markets and export opportunities for large cardamom. Nepal is a leading producer of large cardamom in the world. In view of growing further the Sector, the vision of the NSES sets in developing Nepali large cardamom production and quality to increase export revenues and support sustainable economic development. It focuses on improving production and postharvest practices to increase value addition and quality for exports through enhanced inter-agency coordination and research so as to achieve greater exports in existing and new markets. Hence, bringing out this Strategy document is a momentary step to mobilize the support of all concerned stakeholders in implementation process.

I take this opportunity to appreciate the ITC for its technical support. I am equally thankful to all public and private sector organizations for their valuable inputs and support all along. I am eager to see timely and successful implementation of the Strategy ahead so that others too can learn from our success story.



Photo: ITC, Dried Large Cardamom

## FOREWORD BY MS. ARANCHA GONZÁLEZ, EXECUTIVE DIRECTOR, INTERNATIONAL TRADE CENTRE



Nepal is by far the world's largest producer and exporter of the relatively rare Himalayan agricultural product known as large cardamom or black cardamom. The spice is one of the oldest traded goods produced by Nepal and is only consumed in a few countries in the region, namely India and Pakistan. The Nepal Trade Integration Strategy (NTIS 2016) has identified large cardamom as a priority sector with high potential for export development. Increased exports could contribute significantly to inclusive economic growth in Nepal.

However, there are challenges. The market, relatively small to begin with and concentrated in only a few importing countries, is facing emerging competition which is slowly disrupting export performance and lowering market prices. Sector value chain actors have recognized the need to become more competitive in international markets and to find new export opportunities, as the product is important for the economic well-being of numerous rural Nepali communities. The spice is a major cash earner for thousands of farmers in the eastern districts of Nepal.

It was from this perspective that the International Trade Centre (ITC) assisted Nepal in devising a National Sector Export Strategy for large cardamom. The Strategy is an ongoing joint effort: involved are associations concerned with the production of large cardamom, various development agencies, the Nepali Ministry of Commerce, and its Ministry of Agricultural Development. Through rigorous application of the Strategy's plan of action, expanded exports and increased –and more stable– rural incomes can be achieved.

The Strategy provides a comprehensive five-year road-map for improving productivity and export promotion to achieve greater penetration in existing markets for large cardamom. It also aims to diversify export markets beyond the current, limited number of countries where the spice is consumed. In addition, the approach focuses on sector development coordination and on research. The intent is to enable producers and exporters to improve their technical knowledge and cooperation, leading to heightened quality standardization and to an upgrading of production techniques. The Strategy is underpinned by an overall vision of "developing Nepali Black and Pink Everest Cardamom production and quality to increase export revenues and support sustainable economic development."

It should be noted that the National Sector Export Strategy is not the undertaking of a specific institution but of the country as a whole. Raising the production and quality of large cardamom will require structured and coordinated efforts by policymakers, institutions, businesses, and development agencies. Extensive consultations with all those involved during the design of the Strategy has sparked the momentum for concerted, long-term action. The success will be determined by how well the Strategy is put into effect at all levels, and how well the participants coordinate their actions.

The ITC is committed to pursuing its collaboration with Nepal on its journey towards expanded and sustainable economic development. It stands ready to do more as those involved in the production, export, and marketing of large cardamom seek to improve rural livelihoods through enhancing trade in this valuable and specialised product.

## कार्यकारी सारांश: अलैंची

नेपाली अलैंची जसलाई विश्वबजारमा ठुलो वा कालो सुकुमेल (Large/Black Cardamom) को नामले चिनिन्छ, यो पूर्वी हिमालय क्षेत्रको यौटा प्राचीन र मौलिक मसलाजन्य उत्पादन हो । शताब्दीयैसम्म, पाकिस्तानी र भारतीयहरूले यसको बास्नादार धुवाँलाई सम्पन्नताको प्रतीकका रूपमा आफ्नो परम्परागत विर्यानी जस्तो खानामा प्रयोग गर्दै आएका छन् । अन्य हरिया वनस्पति प्रजातिहरूको तुलनामा विशेषरूपले सुकाइएको अलैंचीको थेरै विशिष्ट बास्ता आउने सुगन्ध र स्वाद हुन्छ तथा परम्परागत सुकाउने प्रविधि (भट्टी) द्वारा प्रशोधन गरिएपछि यसको रङ्ग गाढा खैरो प्रकृतिको हुन्छ । नेपाल अहिलेसम्म अलैंचीको विश्वकै ठुलो उत्पादक र निर्यातकर्ता मुलुक हो । यद्यपि यसको बजार तुलनात्मक रूपमा सानो र त्यसमा पनि खासगरी भारत र पाकिस्तानमा केन्द्रित छ, तापनि यसको मूल्यशृंखलाका सबै पात्रहरूका निम्नित यो अत्यन्त लाभदायक व्यवसाय हो । पहाडी क्षेत्रका ६७,००० भन्दा बढी कृषकहरू तथा विर्तामोड जो पूर्वाञ्चलको क्षेत्रीय व्यापार केन्द्र हो, त्यहाँका ४० थोकविक्रेताहरूको निम्नित अलैंची मुख्य नगदे बाली हो । भारतीय बिचौलियाहरूले यसको आम्दानीको ठुलो हिस्सा कब्जा गरेका छन् किनकि यसको अधिकांश व्यापार खासगरी संसाधन (लजिस्टिक्स) उनीहरूको नियन्त्रणमा छ । निर्यात बजार विविधीकरणको उल्लेखनीय सम्भावनाको बाबजुद, यो एकाधिकारपूर्ण स्थितिले नेपाली अलैंचीको निर्यातको विकासलाई अवरुद्ध पारिहेको छ, किनकि नेपाली निर्यातकर्ताहरूको अलैंची लामो समयसम्म आफ्नो अधीनमा राख्ने क्षमता सीमित छ । अतः यस क्षेत्रमा संलग्न कृषक, व्यवसायीहरूबीच फाइदाको वितरणसीमित मात्रामा मात्र भइरहेको छ ।

**नेपाली गाडा खैरो तथा गाडा गुलाफी रङ्गको एभरेष्ट अलैंचीको उत्पादन र गुणस्तर बढाई निर्यातायमा वृद्धि गर्ने तथा दिगो आर्थिक विकासमा सहयोग पुऱ्याउने ।**

उक्त दीर्घकालीन सोचलाई साकार तुल्याउन यो रणनीतिले देहायका तीनवटा रणनीतिक उद्देश्यहरूमा जोड दिएको छ ।

### १. अलैंचीको उत्पादन र प्रशोधनमा सुधार गरी मूल्य सञ्चयलाई अभिवृद्धि गर्ने

अलैंचीको परम्परागत उत्पादन विधि र सुकाउने अभ्यासले यसको उत्पादकत्व र गुणस्तरमा असर पुऱ्याएको छ । रोपाइँको तहमा रहेका मुख्य व्यवधानहरूले यसको भविष्यमाथि गम्भीर खतराहरू सिर्जना गरेका छन् । खासगरी अलैंचीमा लाग्ने रोगलाई पहिचान गर्ने कृषकको सीमित क्षमता र छिपिपदै, जीर्ण हुँदै गएका बोटहरूलाई पुनरुज्जीवित गर्न अलैंचीको नयाँ बोटबिरुवाहरूको व्यापक अभावले यो खतरा बढ्दो क्रममा छ । अतः, पहिलो चरणमा, यो रणनीतिले निजीक्षेत्रलाई अलैंचीको

हालसालै, पाकिस्तानी बजारमा अलैंचीको नयाँ प्रतिस्पर्धीहरू प्रवेश गरेका छन् जुन अलैंची नक्कली हुनुका साथै त्यसको मूल्य पनि सस्तो र गुणस्तर पनि कमजोर रहेको छ । यसले अलैंचीको बजार मूल्य घटनगएको छ, र नेपालको निर्यात आम्दानीलाई प्रत्यक्ष मार पारेको छ । परिणामतः, सरकारी र निजी क्षेत्र दुवैले पूर्वीक्याशीलता देखाई नयाँ बजार अवसरहरू र नयाँ व्यापार मार्गहरूको खोजी गर्ने कार्यलाई महत्व दिन थालेका छन् । नेपाली अलैंची क्षेत्रले मसलाको अन्तर्राष्ट्रिय बजारमा प्रतिस्पर्धी बन्न र निर्यात प्रक्रियाको अन्तिम दौडमा विजयी बन्न विद्यमान उत्पादन प्रणाली र व्यापार अभ्यासहरूलाई आधुनिकीकरण गर्न जरूरी छ । यसैले यो रणनीतिले अलैंचीको मूल्य सञ्चय तथा गुणस्तरीय निर्यातलाई सुनिश्चित गर्ने, यसको उत्पादन विधि तथा फसल भित्र्याई सकेपछिका क्रियाकलापहरूमा सुधार गर्ने कुरालाई जोड दिएको छ । यस क्रममा उचित क्षेत्रगत विकास समन्वय र अन्सन्धानमार्फत खैरो र गुलाफी रङ्गको एभरेष्ट ब्राण्डको अलैंचीको प्रवर्द्धन गरी बृहत् बजार पहुँच तथा विविधीकरणको लक्ष्य हासिल गर्न सहयोग पुऱ्याइनेछ ।

सारांशमा यो दस्तावेजले निम्न उद्देश्यहरू पूर्ति गर्ने लक्ष्य लिएको छ: पहिलो, यस क्षेत्रका सरोकारवालाहरूलाई मौजुदा बजार प्रवृत्तिवारे जानकारी गराउने, दोस्रो यस क्षेत्रको विद्यमान स्थिति र चुनौतीहरू प्रस्तुत गर्ने, र तेसो देहायबमोजिमको दीर्घकालीन सोच हासिल गर्न यथार्थ मार्गीचित्र र कार्ययोजना उपलब्ध गराउने ।

नर्सरी विकास गर्न सरकारी क्षेत्रको सहयोगलाई वृद्धि गर्ने कुराको सिफारिश गरेको छ । यस क्रममा कीट तथा रोग व्यवस्थापनका विषयमा जोड दिई कृषकहरूलाई कृषिका आधुनिक र असल अभ्यासहरू बारेमा अनुशिक्षित गर्ने तथा पश्चिम नेपाल लगायत विभिन्न क्षेत्रहरूमा नमूना कृषि कार्मको स्थापना गर्ने कुरालाई प्राथमिकतामा राखिएको छ । प्रशोधनको तहमा, अप्याप्त गुणस्तर सुनिश्चितता र खिया लागेका चुलो (भट्टी) मा भुटिएका कारण सिर्जित रासायनिक खतराहरूले नेपाली अलैंचीलाई नयाँ अन्तर्राष्ट्रिय बजारहरूमा जहाँ खाद्य सुरक्षासम्बन्धी कठोर नियमन व्यवस्था छ, निर्यातका लागि अनुपयुक्त बनाउने गरेका छन् । यस पृष्ठभूमिमा यो कार्ययोजनाले आधुनिक, इन्धन-किफायती र धुवाँरहित भट्टीको स्थापना र सञ्चालन, अलैंचीको भण्डार व्यवस्थापन, र वनस्पति स्वास्थ्य प्रमाणीकरणका लागि नमूना अनुगमन प्रणाली

लागू गर्ने सम्बन्धी विषयमा जानकारीमूलक तालिम दिने क्रातालाई समेटेको छ । यसका साथै, वैज्ञानिक ग्रेडिङ मापदण्डले परिभाषित गरेअनुसारका बाध्यात्मक रूपमा अवलम्बन गर्नुपर्ने निर्यातको राष्ट्रिय गुणस्तर पनि सँगसँगै कार्यान्वयनमा ल्याइनेछ ।

## २. क्षेत्रगत विकास सम्बन्ध र अनुसन्धानको प्रवर्द्धन

मुलुकका लागि निर्यात आर्जन र राजस्व सङ्केतन गर्नमा महत्वपूर्ण योगदान गरे तापनि सरकारी प्राविधिक निकायहरूबाट अलैंची क्षेत्रको योजनाबद्ध विकास र उचित सेवाका लागि पर्याप्त वित्तीय सहायताको अभाव छ । यो क्षेत्रमा नियामक उपायहरूसहितको एउटा छुटै विशेष नीतिको पनि अभाव छ । यस क्रममा यो रणनीतिले अलैंचीको राष्ट्रिय नीति तर्जुमा गर्न, सार्वजनिक-निजी क्षेत्र सम्बन्धका लागि संस्थागत संयन्त्र खडा गर्न र अलैंची विकास केन्द्रको अनुसन्धान क्षमता सुढूँद गर्न आधारशिला उपलब्ध गराउनेछ । समानान्तर रूपमा यो रणनीति तथा कार्ययोजनाले अलैंचीका निजी क्षेत्रका संघसंस्थाहरूलाई यस क्षेत्रको आचारसंहिताको पुनरावलोकन गर्न निर्देश गर्दछ र नयाँ गुणस्तर र भण्डारण आवश्यकताहरूलाई परिभाषित गर्दछ । यस अतिरिक्त, व्यापारी र कृषकहरूले गुणस्तर व्यवस्थापन, केन्द्रीकृत प्रशोधन प्रक्रियाको उपयोग गर्दै आधुनिक उत्पादन प्रविधि र सहकारीका स्थापनाका विषयमा तालिम प्राप्त गर्नेछन् । यसले उत्पादक तथा निर्यातकताहरूलाई उनीहरूको प्राविधिक ज्ञान र सहयोगमा अभिवृद्धि गर्न र त्यसबाट गुणस्तर निर्धारण र वनस्पति स्वास्थ्यसम्बन्धी मापदण्डको परिपालनामा सुधार ल्याउन मद्दत पुग्छ ।

## ३. गाढा खैरो र गुलाफी रझको एभ्रेष्ट ब्राण्डको अलैंचीको बजार पहुँचमा वृद्धि र विविधीकरण

भारतीय बजारमाथिको अत्यधिक निर्भरताले यो क्षेत्रको क्षमता विकासलाई सङ्केतित तुल्याएको छ । अतः मूल्य शृंखलाका सरोकारवालाहरूले अन्तिम उपभोक्तासम्म पुग्न र नयाँ अन्तर्राष्ट्रिय बजार पत्ता लगाउन नयाँ वितरण प्रणाली विकास गर्नुपर्दछ । यो रणनीतिले गाढा खैरो र गुलाफी रझको एभ्रेष्ट अलैंचीलाई परम्परागत बजारका साथसाथै पाकिस्तानी र भारतीय आप्रवासीहरू रहेको नयाँ गन्तव्य बजारमा प्रवर्द्धन गर्न अलैंचीको नयाँ सामूहिक व्यापार चिह्न स्थापित गर्ने विषयलाई यौटा प्रवर्द्धनात्मक माध्यमको रूपमा लिएको छ । उच्च गुणस्तरको प्रतिष्ठा स्थापित गर्न अलैंचीको निर्यातमा कडा गुणस्तर मापदण्ड अवलम्बन गर्न र प्याकेजिङ्गको विकास गर्न जोड दिइनेछ । यो सँगसँगै, रणनीतिले परम्परागत तरिकाले व्यापार गर्ने शैलीलाई तोडन सधाउनेछ । अलैंचीको अन्तर्राष्ट्रिय व्यापार अभ्यासहरू र अन्तर्राष्ट्रिय मसला व्यापारका क्षेत्रमा निर्यात बजारीकरण गर्न सधाउ पुग्ने गरी तालिमलाई निर्देशित गरिनेछ । यसबाट नयाँ व्यापार संस्कृतिको विकास गर्न र निर्यातका अवसरहरूलाई उपयोग गर्न पूर्व क्रियाशील सामूहिक मनस्थिति सिर्जना गर्न मद्दत पुग्नेछ ।

नयाँ वितरण प्रणाली र निर्यात बजारीकरण अगाडिको बाटो: यद्यपि अलैंचीको माग यसको आयात गर्ने मुख्य दुईवटा बजारमा बढ्दो छ तापनि नेपालले विस्तारै नवप्रवेशीहरूको

कारण आफ्नो आधार गुमाउदैछ । भारतीय व्यापारीहरूको मौजुदा एकाधिकारपूर्ण स्थिति र अन्तिम क्रेतासर्वग प्रत्यक्ष सम्पर्क कायम गर्न नसम्नुले नेपाली व्यापारीहरूको तुरुतै प्रतिक्रिया जनाउने क्षमतालाई अवरुद्ध गरेको छ । यो क्षेत्रले अन्तिम क्रेतासम्म पुग्ने गरी नयाँ प्रत्यक्ष व्यापार मार्गको विकास गर्नुपर्दछ र नयाँ बजार पहिल्याउनुपर्दछ जहाँ समान किसिमको खाद्य स्वाद रहेको छ । विगतका प्रयासहरू सफल हुन सकेन् भन्दैमा नयाँ प्रयासहरू अधि बढाउन रोकिनु हुँदैन । यो रणनीतिले उच्च गुणस्तरको नेपाली खैरो (कालो) एभ्रेष्ट ब्राण्डको अलैंचीलाई पाकिस्तानी र भारतीय थोक विक्रेताहसँग सीधै पहुँच विस्तार गर्ने गरी नवप्रवर्तनशील दृष्टिकोण प्रस्ताव गरेको छ । यो रणनीतिले मध्यपूर्वका देशहरू, संयुक्त राज्य अमेरिका, क्यानाडा, बेलायत र उत्तरी आयरल्याण्डमा रहेका पाकिस्तानी आप्रवासीहरूसम्म पुग्ने गरी प्रवर्द्धनात्मक योजना समेटेको छ । साथै, रणनीतिले उच्च गुणस्तर र विशिष्ट पक्षको कारण गाढा गुलाफी रझको अलैंचीलाई नयाँ वितरण प्रणालीमा प्रवर्द्धन गर्ने कुराको प्रस्ताव गरेको छ । प्रवर्द्धनात्मक योजनाले मदिराका जानिफकारहरू खासगरी मसला पसलहरू तथा विशिष्टीकृत अनलाइन स्टोरहरूलाई लक्षित गर्नेछ, र नयाँ परिकारहरू प्रदर्शित गर्न मुख्य परिकार विशेषज्ञहरूसँग साझेदारी विकास गर्नेछ । यो रणनीतिले अलैंचीको सङ्गलो दाना मात्र निर्यात गर्ने कार्यबाट माथि उठेर अलैंचीको बीउ, धूलो, तेल वा प्राकृतिक रझ जस्ता अलैंचीबाट उत्पादन हुने नयाँ वस्तुहरूको विकास गरी नयाँ बजार अवसरहरू सिर्जना गर्न अनुसन्धान कार्यमा सधाउ पुऱ्याउनेछ ।

यो रणनीतिको उद्देश्यहरू हासिल गर्न विस्तृत कार्ययोजना जसले यो रणनीतिको पाँचवर्षको अवधिमा कार्यान्वयन गरिनुपर्ने शृंखलाबद्ध कार्यक्रमहरूलाई निर्देश गरेको छ, त्यसको वरपर निर्दिष्ट र समन्वित प्रयासहरूको खाँचो पद्धति । यी प्राथमिकताका कार्यहरू पहिचान गर्न सार्वजनिक तथा निजी क्षेत्रका सरोकारवालाहरूसँग व्यापक परामर्श गरिएको छ र यो कार्य संवाद-मञ्च र यस क्षेत्रका अन्तरङ्ग व्यक्तिहरू सम्मिलित टिमको स्थापनाबाट सम्भव भएको छ । नीति-निर्माताहरू, सहयोगी संस्थाहरू, उद्यमी-व्यवसायीहरू, नागरिक समाजका संस्थाहरू र विकास साझेदारहरूबीचको सहकार्य यो नीतिको प्रभावकरिता र उच्च प्रभावहरूको सुनिश्चितताको लागि कार्यान्वयन चरणमा पनि निरन्तर रहिरहनुपर्दछ । कार्यान्वयन संरचना खाकाले व्यवस्थित व्यवस्थापन, अनुगमन तथा मापन संयन्त्रहरूलाई परिभाषित गर्नेछ जसले नेपाल व्यापार एकीकृत रणनीति (२०१६) मा पहिचान गरिएका विषयहरूको कार्यान्वयनमा समेत सहयोगी भूमिका खेल्नेछ । यो संरचना खाकाको कार्यान्वयनले प्रस्तुत रणनीतिको कार्यान्वयनको सफलताको मापनलाई निर्धारण गर्नेछ ।

यो रणनीतिको कार्यान्वयनले मूल्य शृंखलामा आवद्ध व्यक्तिहरूलाई नेपाली अलैंचीको उत्पादन र गुणस्तरमा वृद्धि गर्न सहयोग पुऱ्याउन एकै ठाउँमा ल्याउनुको अतिरिक्त यसले ग्रामीण क्षेत्रका हजारौं परिवारको आर्थिक कल्याणलाई क्रमशः अभिवृद्धि गर्न, मुलुकको विदेशी मुद्रा आर्जनलाई बढाउन र साथसाथै यो क्षेत्रको वातावरणीय र सामाजिक दिगोपना कायम गर्न समेत मद्दत पुऱ्याउँछ ।



Photo: ITC

# EXECUTIVE SUMMARY

Large cardamom, also known as black cardamom, is one of the oldest indigenous spices of the eastern Himalayas. For centuries, Pakistanis and Indians have used its smoky flavour in their traditional biryani dishes as a symbol of wealth. Compared with the green variety, large cardamom has a very distinct roasted smell and taste, and brownish colour, which originates from an ancient drying method. Nepal is by far the world's largest producer and exporter of large cardamom. The Government have selected cardamom as priority sector part of the Nepal Trade Integration Strategy (NTIS 2016). Although the market is relatively small and concentrated in India and Pakistan, it is a lucrative business for all value chain actors: it is a major cash crop for more than 67,000 farmers in the hilly regions and 40 wholesalers in Birtamod, the regional trading hub. However, Indian intermediaries capture the biggest share of earnings because they control most of the trade, particularly logistics. Despite notable export prospects, this monopolistic situation hinders export development because Nepali exporters have limited leeway and thus distribution of the benefits throughout the sector is limited.

Recently, new competitors have entered the Pakistani market with cheaper, lower quality black cardamom called duplicates, which lessens market prices and directly lowers Nepali export revenues. Consequently, both the Government and the private sector have realized the importance of proactively seeking new market opportunities and trading routes. This means the sector has to modernize its current cultivation and business practices to become competitive in the international spice market and conquer the 'last mile' of the export process. This Strategy thus focuses on improving production and post-harvest practices to increase value retention and quality for exports and – with proper sector development coordination and research – promoting Black and Pink Everest Cardamom to achieve greater market penetration and diversification.

In sum, this document aims to serve three purposes: firstly, inform stakeholders of recent market trends; secondly, present the status of the sector and its challenges; and thirdly, provide a realistic roadmap and a plan of action (PoA) geared at achieving the following overall vision:

**“ Develop Nepali Black and Pink Everest Cardamom production and quality to increase export revenues and support sustainable economic development ”**

To achieve this vision, the Strategy focuses on three strategic objectives.

## 1. Improve production and postharvest practices of large cardamom to increase value retention.

The use of traditional production and drying practices hampers productivity and quality. Major constraints at the cultivation level pose serious threats to the future of the sector: in particular the limited ability of farmers to diagnose diseases and the massive shortage of seedlings to rejuvenate ageing plantations. As a first step, the Strategy recommends scaling up public sector support

to develop private nurseries while training farmers in modern Good Agricultural Practices (GAPs) focusing on pest and disease management, as well as establishing model farming in different regions, including western Nepal. At the processing level, insufficient standardization and the risk of chemical hazards caused by the rustic ovens used to roast cardamom, called bhattis, renders the product unfit for export to new international markets with stringent food safety regulations. The plan includes dissemination and training in the use of modern energy-efficient and smokeless bhattis, storage management, and piloting of a traceability system for phytosanitary certification. Adoption of national compulsory export quality standards defined by scientific grading criteria will occur simultaneously.

## 2. Foster sector development coordination and research.

Despite significant export revenues generated for the country, public technical agencies lack sufficient financial support to provide adequate services and development planning to the sector. The sector clearly lacks a specific policy with regulatory measures. This Strategy provides the foundations to develop a national large cardamom policy, establishing an institutional mechanism for public–private sector coordination and strengthening the research capacities of the Cardamom Development Centre (CDC). In parallel, the plan mandates private sector associations to review the sector's Code of Conduct (CoC) and define new quality and storage requirements. Additionally, traders and farmers will receive training on quality management, modern production techniques using centralized processing and the establishment of cooperatives. This in turn will enable producers and exporters to improve their technical knowledge and cooperation, thereby achieving the necessary improvements in quality standardization and phytosanitary compliance.

## 3. Promote Black and Pink Everest Cardamom to achieve greater market penetration and diversification.

Overdependence on the Indian market has limited the development capacities of the sector. Thus value chain stakeholders must develop new distribution channels to reach the final buyers and find new international markets. The Strategy is geared at establishing a new collective trademark for Black and Pink Everest Cardamoms as a promotion tool in both traditional markets and new destinations with Pakistani and Indian diasporas. Strict export quality standards and packaging will be developed in order to build a reputation for premium quality. In parallel, the Strategy caters for breaking away from traditional ways of doing business. Trainings on international business practices and export marketing in the international spice trade are oriented towards developing a new business culture and creating a proactive collective mindset to capture export opportunities.

New distribution channels and export marketing are the way forward: Although demand is growing in its two major importing markets, Nepal is slowly losing ground to new entrants. The current monopoly of Indian traders and the absence of direct links with final buyers impedes the ability of Nepali traders to react swiftly. The sector needs to set up new direct trade routes to final buyers and to look for new markets where similar food tastes prevail. The fact that past initiatives have not been successful does not mean that efforts should be halted. The Strategy proposes an innovative approach by promoting Nepali Black Everest Cardamom's superior quality directly to Pakistani and Indian wholesalers. In parallel, the promotion plan entails reaching out to the Pakistani

diaspora located in the Middle East, the United States, Canada and the United Kingdom of Great Britain and Northern Ireland. The Strategy also proposes to promote pink cardamom in new distribution channels given its superior quality and distinctive aspect. The promotion plan will target gourmet specialty spice shops and specialized online stores, and develop partnerships with top chefs to disseminate new recipes. Moving beyond the exports of whole large cardamom pods, the Strategy also supports research on derived products such as cardamom seeds, grinds, oils or natural dyes to develop new market opportunities.

Achieving the objectives of this Strategy requires a focused and coordinated effort around the detailed PoA that specifies a series of activities to be implemented during the five-year lifetime of this Strategy. A great deal of consultation with public and private sector stakeholders has taken place to identify these strategic thrusts, and this is visible through the dialogue platform and the sector's Core Team that have been established. This collaboration among policymakers, support institutions, enterprises, civil society organizations and development partners must continue during the implementation phase of the Strategy to ensure effectiveness and maximum impact. The implementation framework defines systematic management, monitoring and measurement mechanisms that are complementary to those identified in the Nepal Trade Integration Strategy (NTIS) 2016. Operationalizing this framework will determine the degree of success of this Strategy.

Implementation of this Strategy will not only bring value chain actors together to cooperate to increase Nepali large cardamom production and quality, it will increasingly improve the well-being of thousands of rural families and contribute to the country's foreign exchange earnings while raising the environmental and social sustainability of the sector.

# THE PRODUCT MAP

Nepali large cardamom (*Amomum Subulatum Roxburgh.*) – also known as 'black gold' or 'black cardamom' and locally called *alainchi* – belongs to the botanical family called *Zingiberaceae*. It is an evergreen, perennial and herbaceous plant grown on north-facing hill slopes. The plant is sensitive to climate and requires temperatures of 15–25 degrees Celsius. It also needs humid conditions and shade and grows between 800 and 2,100 metres.<sup>1</sup> Plants survive for 20 to 25 years. They start fruiting from their third year and mature at 8–10 years, with a full fruit-bearing period of 17 to 22 years. This type of large cardamom is grown mainly in the Himalayan region of Nepal, Sikkim in India, and Bhutan. Nepal is the world's largest producer and exporter. Large cardamoms are spindle-shaped pods that are light to dark brown in colour. The pods normally vary from 20 mm to 35 mm in size and contain several black seeds inside with a spicy aroma.

Black cardamom, also called large cardamom (*Cardamomum subulatum*), is primarily used in savoury rice and meat dishes in Pakistan and India. Annual production is around 12,000 tons. Black cardamom from Nepal trades at US\$20+/kg while cardamom from other origins, for example Viet Nam, trades at around US\$ 5/kg.

Nepal produces 4,000 tons annually and 95% is exported through Indian traders to Pakistan. India produces around 4,500 tons, which are also mostly exported to Pakistan. Next comes Bhutan with 1,500 tons, mostly exported via India to Pakistan. New producing countries are Viet Nam, China, Guatemala and Ethiopia.

1. NARC, Disease-Free Large Cardamom Farming Technique (in Nepali), Handbook.



Photo: ITC, Large Cardamom

Black cardamom finds its applications mostly in spicy non-vegetarian cuisines such as chicken or mutton biryani rice dishes. This is particularly true in the Muslim community. The Chinese use it in Szechuan dishes and the Vietnamese in noodle soup. Large cardamom is not used for flavouring tea or coffee.

Nepali black cardamom has a distinct flavour profile due to a specific method of postharvest drying in *bhatti* ovens, which explains the roasted smell and taste. Over time it has become preferred by Muslims, who use it to flavour their biryani dishes. The smoky flavour would overwhelm a sweet cake or pudding but in a spice rub for roasted meat or in a full-flavoured stew it imparts a smouldering depth no other spice can. Rice and (chicken) meat are cooked together with whole cardamom pods in a tagine. Once the dish is ready, the pods are removed.

## Box 1: Chemical properties of black cardamom

### Chemical properties:

Oil content 8%, terpineol 45%, myrcene 27%, limonene 8%, menthone 6%, beta-phellandrene 3%, 1,8-cineol 2%, sabinene 2%, and heptanes 25% (Phytochemistry, 1987, vol. 25, p. 26,207).

Other sources report 1,8 cineol (20–50%), alpha-terpinyl acetate (30%), sabinene, limonene (2–14%) and borneol (2–4%), cineol (up to 70%) plus beta-pinene (16%); furthermore, alpha-pinene, alpha-terpineol and humulene.



Photo: Pixabay (cc1.0), *mountains-1686550.jpg*

# GLOBAL TRENDS

## GLOBAL PRODUCTION AND CONSUMPTION OF SPICES

The largest producer and consumer of spices is India. Other top producers are China, Bangladesh, Turkey and Pakistan. India exports less than 20% of its production, while Viet Nam is responsible for approximately 50% of the global black pepper trade. Traditional large exporters, China and India, are becoming net importers of turmeric, ginger and black pepper.

Global spice consumption has a year-on-year growth rate of 3%. There are several causes, including increased population growth, the rise in 'captive use' in producing countries such as India and China, the escalating trend for ethnic flavours in 'fusion' cooking and new developments in the application of spices.

## GLOBAL TRADE IN SPICES

Spices have been globally traded products since ancient times, given their importance in seasoning foods and in serving as medicines. The production of spices is dominated by a few countries, making it one of the most profitable commodities among agricultural products.

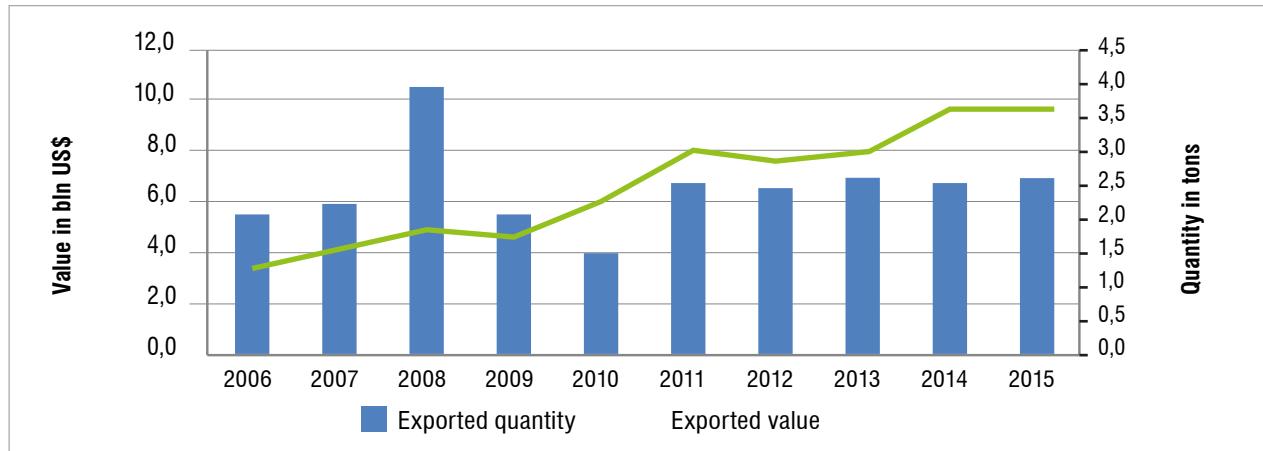
In 2015, the global market for spices amounted to US\$9.5 billion, while the value of traded spices almost tripled over the past 10 years, from US\$3.4 billion in 2006 to US\$9.5 billion in 2015. Exports of spices have seen steady growth in value over the last decade at an annual rate of approximately 11%. In terms of quantity, which reached 2.6 billion tons in 2014, exports remain rather stagnant compared with the rise in value, with an annual growth rate of 3%. This upward trend for trade in spices can be explained by the increasing demand for food services and growing preference for home cooking and exotic cuisines.

Figure 1: Spice producing origins



Source: Herms S. 2015, Business Opportunity Report Spices # 6, The Netherlands.

Figure 2: World exports of spices, quantity and value, 2006–2015



Source: International Trade Centre, Trade Map (2016).

Although different spice markets have their own supply and demand dynamics, patterns of global trade can be summarized in general by the one-way flow from South-East Asia to developed countries. As can be seen in table 1, the top exporting countries in 2015 were India, Viet Nam and China, which accounted for 40% of world exports. Being a historical exporter of spices, India plays a dominant role in the global spice trade with annual growth of 5%. Viet Nam's spices exports have experienced a significant increase in recent years, with its share in value of world exports doubling from 6.4% in 2006 to 12.3% in 2015. Chinese spice exports slightly declined

in importance in the past five years, growing at an annual rate of merely 1%.

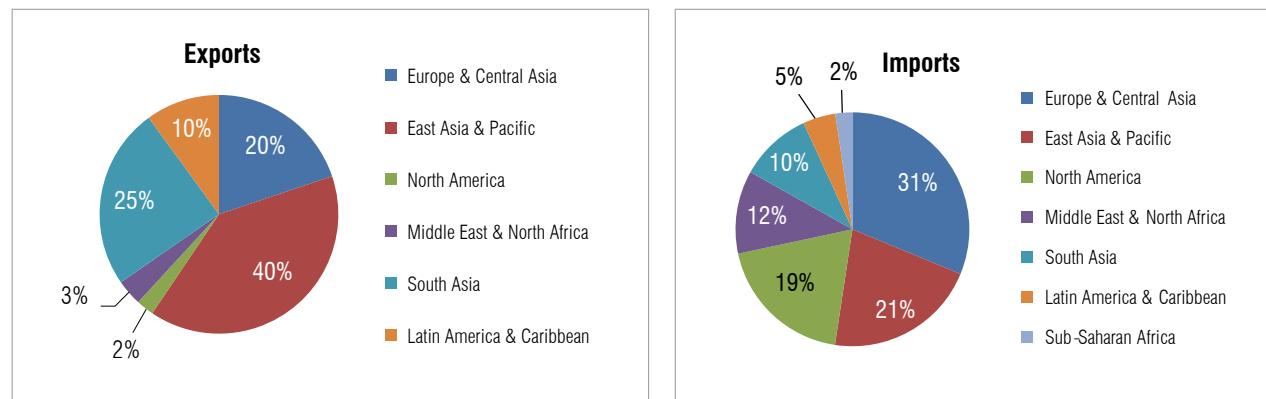
On the other hand, the major net importers of spices are developed countries such as the United States of America, Germany and Japan, which figured among the top importing countries in 2015, accounting for 29% of world imports (see table 1). India and Viet Nam, aside from being the largest and second-largest spices exporters, are also the third- and fourth-largest importers of spices in the world.

Table 1: Global trade in spices (Harmonized System (HS) codes, 0904, 0905, 0906, 0907, 0908, 0909 and 0910)

Exporters	Exports 2015 (US\$ millions)	Share (%)	5-year Compound Annual Growth Rate (CAGR) (%)	10-year CAGR (%)	Importers	Imports 2015 (US\$ millions)	Share (%)	5-year CAGR (%)	10-year CAGR (%)
World	9 522		4	11	World	9 706		5	11
India	1 701	17.9	5	16	United States	1 668	17.2	11	12
Viet Nam	1 174	12.3	10	18	Germany	612	6.3	8	10
China	927	9.7	1	9	India	570	5.9	19	16
Indonesia	872	9.2	17	16	Viet Nam	534	5.5	63	55
Brazil	376	3.9	13	11	Japan	371	3.8	2	7

Source: ITC Trade Map (2016).

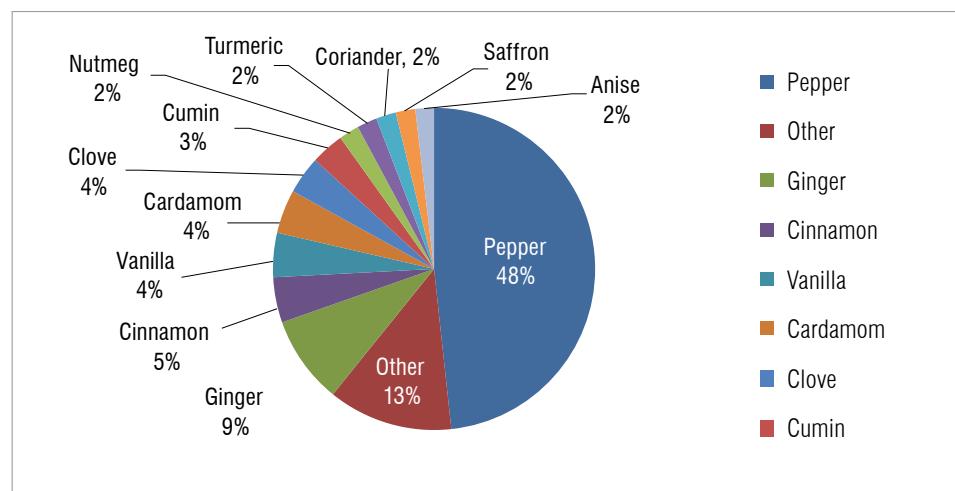
Figure 3: Exports and imports of spices by region, 2015



Source: ITC Trade Map 2016.

Black pepper is the most traded spice (48% of world imports), followed by ginger (9%), cinnamon (5%), vanilla (4%) and green cardamom (4%).

Figure 4: Share of imports of spices by category, 2015



Source: ITC Trade Map 2016.

## GLOBAL TRADE OF LARGE CARDAMOM

Global trade of large cardamom is difficult to trace due to the absence of a unique HS code at six-digit level. The product shares the same HS code (090831) with green cardamom, which has a similar appearance and is more widely produced globally. Therefore, by using the HS code 090831, one cannot accurately capture the trade flow of large cardamom worldwide.

Despite the lack of disaggregated data, the pattern of trade in large cardamom can be understood thanks to India and Pakistan, two major importing countries, which specify large cardamom under their national tariff line codes and record the majority of trade flows of the product in the world.

According to rough estimates based on trade statistics from these two countries, the volume of large cardamom trade reached almost 4 million kilograms in 2014. As can be seen in figure 5, the volume traded fluctuates

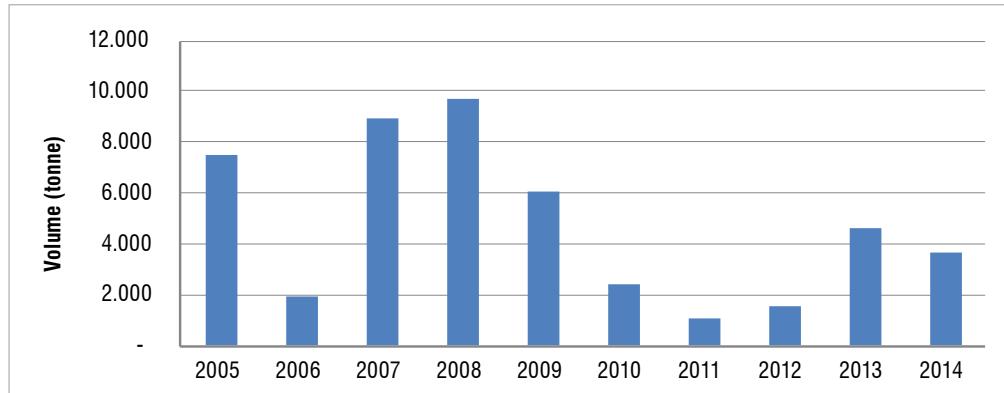
significantly from year to year. While the imported volume of large cardamom reached its peak in 2008, it dropped significantly after that and has not recovered to the previous level.

**Table 2:** Global trade in cardamom (small and large cardamom combined), HS 090831

Exporters	Exported quantity in 2015 (thousand tons)	Share (%)	5-year CAGR (%)	Annual growth rate in value, 2014–2015 (%)	Importers	Imported quantity in 2015 (thousand tons)	Share (%)	5-year CAGR (%)	Annual growth rate in value, 2014–2015 (%)
World	52.4				World				
Guatemala	33.4	61.6	-1	1	Saudi Arabia	11.2	29.8	-7	7
India	6.2	17.9	13	21	United Arab Emirates	11.0	21.8	25	13
Nepal	5.3	10.9	3	31	India	6.1	13.1	43	58
Singapore	3.0	3	-4	19	Bangladesh	4.5	4	5	3
Indonesia	1.6	2	-18	-23	Singapore	3.3	2.8	-6	16

**Source:** International Trade Centre (2016).

**Figure 5:** World imports of large cardamom in tons, 2005–2014



**Source:** Estimation based on ITC Trade Map (2016).<sup>2</sup>

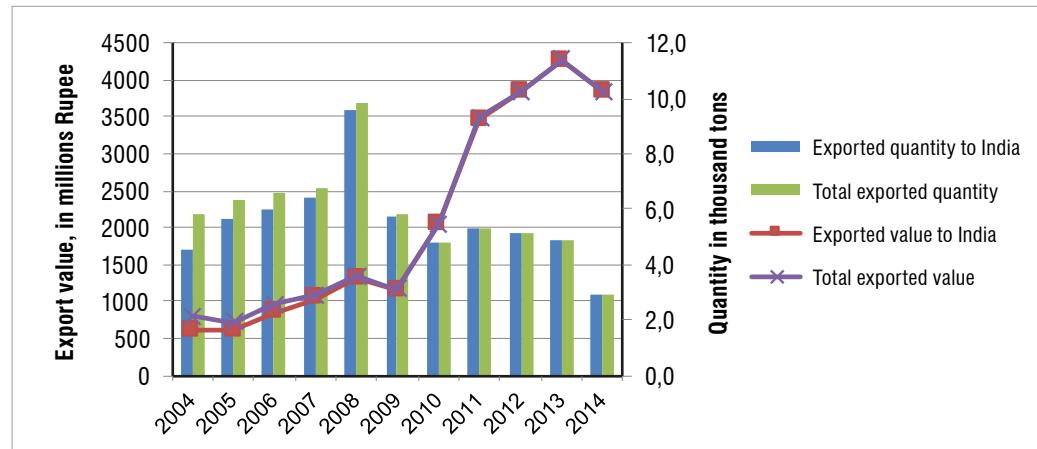
### Global exports trend of cardamom and large cardamom

The production and export of large cardamom is highly concentrated in the Himalayan region. Nepal and Bhutan are the main producers and exporters of large cardamom, accounting for roughly 90% of exported production.

The volume of large cardamom exports from Nepal grew modestly from 2004 to 2007, reached its peak in 2008 (over 10,000 tons) and then decreased from 2009. However, exported value has not decreased due to continuous increases in the world market price. In the past two decades, the average export unit price of large cardamom has increased from US\$ 0.34/kg to US\$ 12/ kg. The value of Nepal's large cardamom exports rose from US\$ 7,440,000 in 2004 to US\$ 39.4 million in 2013.

2. The calculation is based on imports recorded by India and Pakistan, the two largest importers of large cardamom worldwide, which each have a special National Tariff Line Code for the product.

Figure 6: Exports of large cardamom from Nepal, 2004–2014

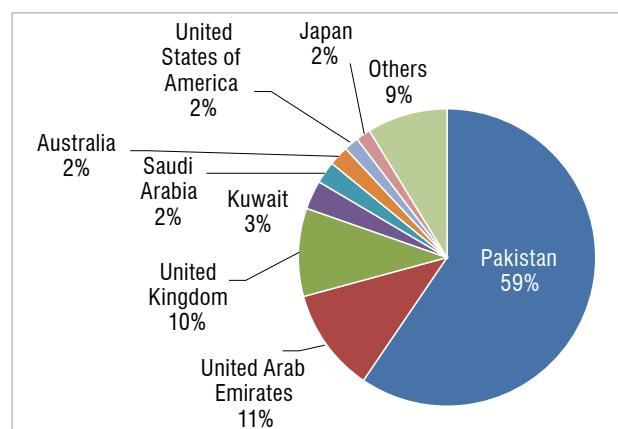


Source: Nepal Foreign Trade Statistics.

Since 2006, direct exports of large cardamom from Nepal to markets like Singapore, Pakistan and the United Arab Emirates (UAE) reduced to less than 1%. India remained Nepal's largest large cardamom importer, purchasing approximately 99% of Nepal's large cardamom exports. These products are then packed and re-exported from India to third countries such as Pakistan and Middle Eastern countries due to high demand and the high price margin given the preference and taste for Nepali large cardamom.

As seen in figure 7, Pakistan is the largest importer of large cardamom, purchasing roughly 60% of Indian large cardamom exports. The product is used in pods by the local Muslim community in biryani dishes, a Pakistani cuisine, as a symbol of prosperity and wealth.

Figure 7: Indian export destinations of large cardamom



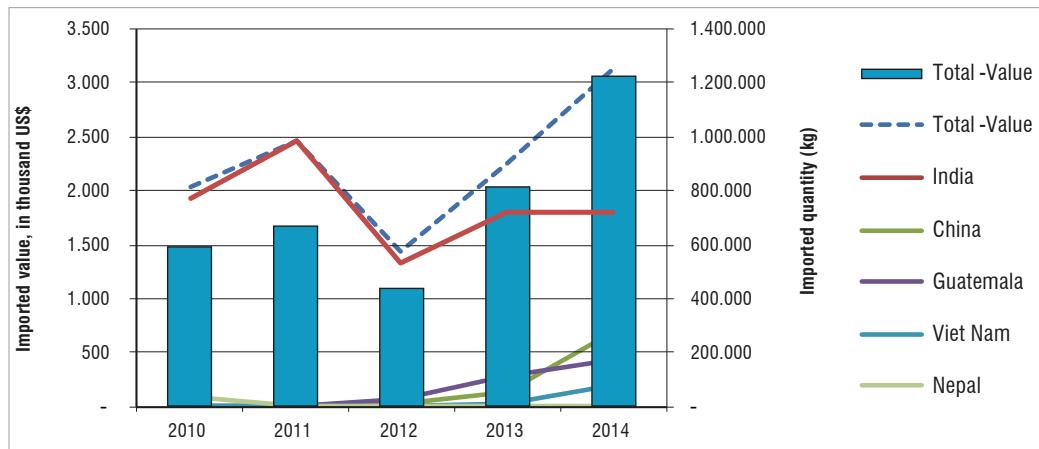
Source: International Trade Centre.

### Emerging trends

Between 2010 and 2014, total imports of large cardamom from Pakistan increased in value significantly, with a CAGR of 11.4%. However, imports in terms of quantity have increased more, with a CAGR of 20.1%. This means that there is downward pressure on the unit value. The trade statistics in figure 8 show that new competitors have entered the Pakistani market and the unit value is significantly lower compared with Indian (Nepali) large cardamom.<sup>3</sup> Thus in recent years, incentivized by the high economic return from large cardamom, major producers of green cardamom –namely Guatemala, China and Viet Nam– began to export 'duplicate' large cardamom to Pakistan. These 'duplicate' large cardamoms are different in terms of shape and smell but are mixed by Pakistani merchants with authentic Nepali large cardamom to reduce costs and gain larger profits. This growing practice among traders in Pakistan has caused a decrease of large cardamom exports from India (see figure 8) and thus negatively impacted the large cardamom sector in Nepal.

3. Unit value is used as a proxy for price but can be considered as the actual market price.

Figure 8: Large cardamom imported by Pakistan (National Tariff Line Code 09083110), 2010–2014



Source: ITC Trade Map.

In 2014, China and Guatemala respectively represented 22% and 14% of the imports of large cardamom in Pakistan (figure 9).

Figure 9: Suppliers of large cardamom to Pakistan in 2014

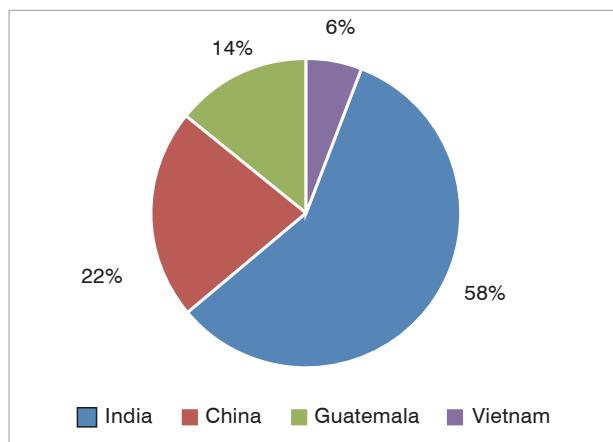


Photo: ITC

Source: ITC Trade Map.

Table 3: Unit value (US\$/kg) of Pakistan's large cardamom imports 2010–2014

	2010	2011	2012	2013	2014
Average unit value	3.45	3.68	3.26	2.78	2.55
India	3.56	3.68	3.12	2.64	2.58
China	2.64	2.70	2.69	1.95	2.35
Guatemala	–	–	7.70	7.23	3.16
Viet Nam	–	–	–	2.35	2.11

Source: ITC Trade Map.



Photo: ITC

### Box 2: Duplicate cardamom

Nepali suppliers speak of 'duplicate' cardamom when referring to these new origins because the taste is not as good, the size is larger and the pods easily split open during cooking (which is a problem in biryani dishes, where the pods only serve to bring taste and are removed before eating). The (Indian) traders mix whole pods of 'duplicate' with Nepali cardamom in proportions of 25–75 or even worse, and then sell at a much lower price, which triggers Pakistanis and Afghans to buy.

Experts indicate that these market trends are likely to continue, helping to shape the sector throughout the next decade.

### Box 3: Implications for Nepal

In the medium term, the global spice trade will be characterized by the following trends:

- Solid volume growth of 3% per annum.
- Full transparency of trade flows and price movements, and therefore increased competition
- Globalization of flavours and new spice applications (including for black cardamom).
- Necessity to adhere to international standards for quality.



Photo: ITC

# VALUE CHAIN ANALYSIS AND SECTOR DIAGNOSTIC

## HISTORICAL PERSPECTIVE

It is believed that in ancient times the wild large cardamom plant originated in Sikkim and Darjeeling states in India and in eastern Nepal. In 1830 large cardamom was cultivated by farmers in four districts: Ilam, Taplejung, Panchthar and Bhojpur. It has been commercially grown only since 1853, when the Rana Government took production and marketing initiatives such as:

- Setting up of two large cardamom depots (*alainchi kothi*) in Patna and Mirzapur of India for wholesale trade in Nepali large cardamom;
- Keeping records of all farmers;
- Allocation of large cardamom farmland to farmers;
- Provision of credit to farmers against the guarantee of local well-known persons;
- Establishing purchase and collection depots;
- Fixing an indicative support or purchase price in advance;
- Purchase guarantees for large cardamom from farmers;
- Guarantee of payment within five days of purchase;
- Severe punishment of smugglers.<sup>4</sup>

The reason for the selection of two locations in India for marketing of large cardamom from Nepal is because of their concentration of Muslims, who traditionally use *alainchi* as an aromatic spice in their daily meal preparations and masala pan (betel leaves). At a later stage the Mirzapur large cardamom depot was shut down while the one in Patna continued operation until 1890.

Following its closure there was a gap of 40 to 50 years in commercialization of large cardamom in Nepal. Nepali farmers and traders suffered a lot financially during this period. One of the reasons for the gap is that traders and transporters moving frequently between the Indian markets and Dhankuta in Nepal for purchase of large cardamom suffered from malaria sporadically and often died of it. It was only between 1930 and 1940 that the farming

of and trading system for large cardamom in Nepal was revived by the initiatives of Indian Marwaris in Ilam district by setting up their purchasing depots in 1933.

In 1964 the Government launched a policy of granting loans to farmers through the Agriculture Development Bank through the Mechi Development Fund. In 1965 large cardamom was sold for NPR 2 per kg, a very low price compared with the recent record level price of NPR 2,500 per kg. With the gradual development of plantations and commercialization of large cardamom, in October 1976 the Government set up a separate office called the Cardamom Development Centre (CDC), primarily to support farmers. In the same year, Nepal celebrated 'Agricultural Year 2032/33' and the Government received 400,000 large cardamom saplings of improved varieties (like Kopinge, Rangvang and Sawney) from Sikkim to expand production, and distributed them to farmers in Panchthar, Ilam and Taplejung from Fikkal.<sup>5</sup>

The Government procured 372 *ropanis* (about 19 ha) land under the ownership of the CDC of the Ministry of Agriculture for use as a large cardamom plant nursery. With the increase in world market price as well as demand, large cardamom gradually became a popular cash crop in Nepal. In 1982 the Government declared four districts (Panchthar, Ilam, Bhojpur and Taplejung) a Large Cardamom Zone. Currently, large cardamom cultivation has expanded to 46 districts of the country with planting in over 14,875 ha and annual production exceeding 6,000 tons.

The enthusiasm of private sector entrepreneurs and the efforts of farmers at local level contributed to the production and export development of large cardamom in Nepal. In 2007 the Federation of Large Cardamom Entrepreneurs of Nepal (FLCEN) was set up by private entrepreneurs for the overall development of large cardamom.

Private sector umbrella organizations such as the Federation of Nepali Chambers of Commerce and Industry (FNCCI) and Agro Enterprise Centre (AEC), in collaboration with the Ministry of Agricultural Development (MoAD),

4. Adhikary P. Senior large Cardamom Development Officer. Large Cardamom Development Centre (2071). Fikkal, History of large Cardamoms Farming and Hem raj Regmi, MoAD, Large Cardamom Production in Nepal and Its other Aspects (in Nepali), *Alainchi*. Smarika. *Federation of Large Cardamom Entrepreneurs of Nepal*.

5. Bimali, O (2071). 'Alainchi Khetijo Bikas', *Alainchi*. Smarika. *Federation of Large Cardamom Entrepreneurs of Nepal*.

also distribute smoke-free double drum cardamom dryers in selected new production districts like Palpa, Lumjung, Dolka and Sindhupalchowk. They are continuously working to improve the design of dryers to reduce costs and increase fuel efficiency and the quality of the output, and to promote and diversify large cardamom in new markets.

## LARGE CARDAMOM SECTOR OVERVIEW

### PRODUCTION OF LARGE CARDAMOM

Nepal is the world largest producer of large cardamom. Other countries where this cultivar is produced are India and Bhutan. The average annual production of Nepal exceeds 6,600 tons, which is about 55% of the average annual world production of around 12,000 tons.

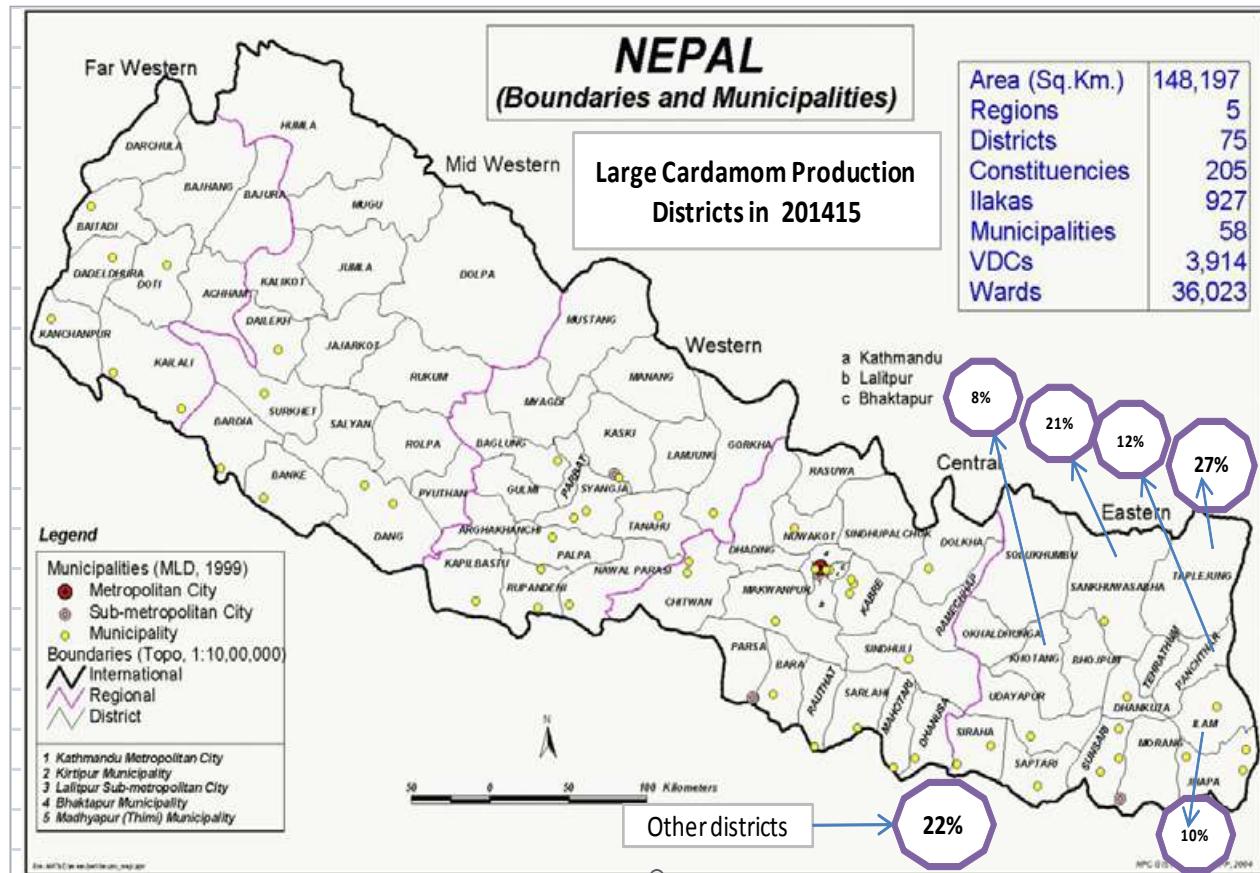
More than 95% of the production of large cardamom comes from individual farmers in all districts of Nepal. There is a tiny number of organized commercial farms under lease or on land owned by registered firms,

companies or cooperatives. Historically, production of large cardamom started in four far eastern mountain districts of Nepal but now, with the increase in world market demand and the value of crop, many farmers in Nepal have shown interest in planting it and it has consequently gradually spread over 46 districts, demonstrating that future prospects for increasing production of large cardamom are bright.

In the past several years, production fluctuated between 5,200 and 7,000 tons, depending on the climatic conditions and agronomic practices followed by farmers to attack the spread of diseases or pests. However, technical experts and farmers have become much more conscious about diseases and pests and timely measures are being taken to control and eradicate such risks.

According to MoAD, in fiscal year 2014/15 the total trade volume of large cardamom was 4,470 tons valued at NPR 7,179 million. In 2014/15 the highest production (27% of total output) was recorded in Taplejung district, followed by Sankhuwasava (21%), Panchthar (12%), Ilam (10%) and Khotang (8%), with the remaining 22% from other districts.

Figure 10: Major large cardamom production districts in Nepal, 2014/15



## Large cardamom varieties

The eight most suitable and popular species (cultivars) being planted and grown in Nepal are:

- Nepal Ramshai (1,500–2,000 meters above sea level-MASL)
- Golshai (1,200–1,600 MASL)
- Saunae (700–2,000 MASL)
- Chibeshai (700–1,000 MASL)
- Dammershai (700–1,200 MASL)
- Kayntidar (700–1,000 MASL)
- Salakpure, Varlangae (1,500–2,000 MASL)
- Jirmale (600–1,200 MASL).<sup>6</sup>

6. Adhikari, P and Sigdel, K. (2015). Activities of Cardamom Development Centre and DoA in Large Cardamom Development. Chaudhary, R. and Prasad Vista, S. (Eds.), *Proceedings of the Stakeholders Consultation Workshops on Large cardamom Development in Nepal held in April 20, 2015*. Commercial Crop Division, NARC, Khumaltar, Nepal.

These varieties have a unique taste and flavours and are known for high quality in the market.

## Cardamom standard

According to the regulations of the Department of Food Technology and Quality Control, cardamom capsules should not include more than 5% extraneous matter, including calyx pieces and stalk bits. Its seed should contain a minimum of 1% (volume/weight) of volatile oil. Nepal Standards for large cardamom are presented in table 4.

Table 4: Nepal Standards for Grade A and Grade B large cardamom, Nepal Standard 35:2040

Standards	Grade A	Grade B
Extraneous matter in percentage in total quantity (i.e. scaly pieces, stalk, bits of vegetable origin and other mineral origin)	0	3.0 maximum
Empty capsules in percentage	1.0 maximum	3.0 maximum
Percentage insect-damaged in number	0	3.0 maximum
Percentage of immature capsules in quantity	2.0 maximum	4.0 maximum
Percentage of split capsules in number	10.0 maximum	10.0 maximum
Weight per litre	0.350 kg maximum	0
Percentage of moisture	12.0 maximum	12.0 maximum
Size in mm	2.0 maximum	0
Colour	Light brown to pink	Pink to dark brown

## Grading

There are no scientific grading systems based on pre-determined standards and standard measurements. Currently grading is mainly based on size (above 14 mm), tail cut, colour (brownish to pinkish), freshness (hygiene) and moisture content of 12%. Cardamom fulfilling all of these criteria is regarded as Jumbo Jet, which is equivalent to the first (top) grade. The second or medium grade, called Standard, is that which slightly fails to meet the above-mentioned criteria. When the size is smaller than 10 mm, tails are not cut and the moisture content is higher, the product is categorized as 'Chalan Chalti' or CC.



Photo: ITC, Bags of large cardamom

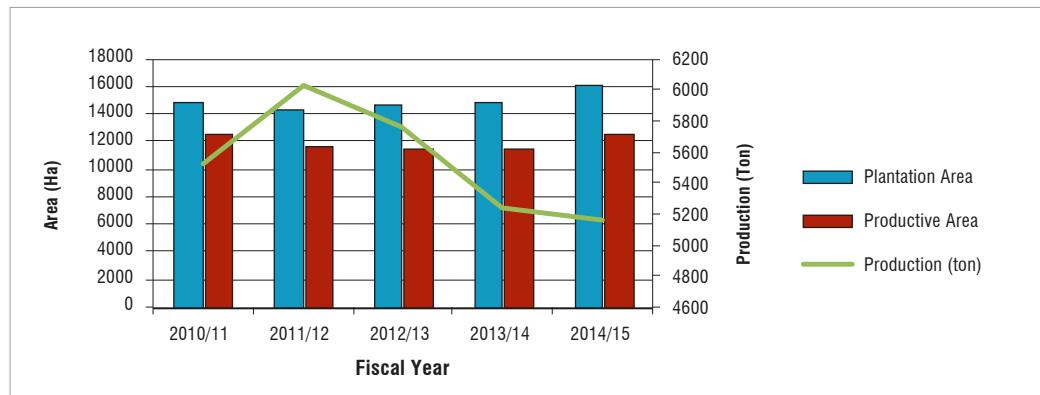
## Production trends

Despite the increase in global market demand and planting in Nepal, large cardamom production has not increased simultaneously, resulting in an ever escalating unit price.<sup>7</sup> In the past 20 years the productive area has increased 41.5%, from 8,800 ha (1994/95) to 12,458 ha (2014/15), while annual production has increased by

7. According to available trade data and unit export price calculations, in the past 25 years the FOB export price increased by a factor of 34 from NPR 38,000 per ton in 1995/96 to NPR 1,310,000 in 2013/14.

71.6%, from 3,010 tons in 1994/95 to 5,166 tons in 2014/15 due to a positive growth in yield per ha of land from 0.34 to 0.41 tons. Production quantities fluctuate periodically as shown in figure 11 and the average annual growth over 18 years is only 4%. The reasons for production quantity fluctuations and the slow growth in production are mainly due to frequent attacks of pests and diseases; insufficient disease-free saplings production, and the lack of research on plant varieties suitable for specific soils, altitudes and climatic conditions for improved production and productivity.

Figure 11: Area and production of large cardamom, 2010/11–2014/15



Source: MoAD.

## PRICE INFORMATION

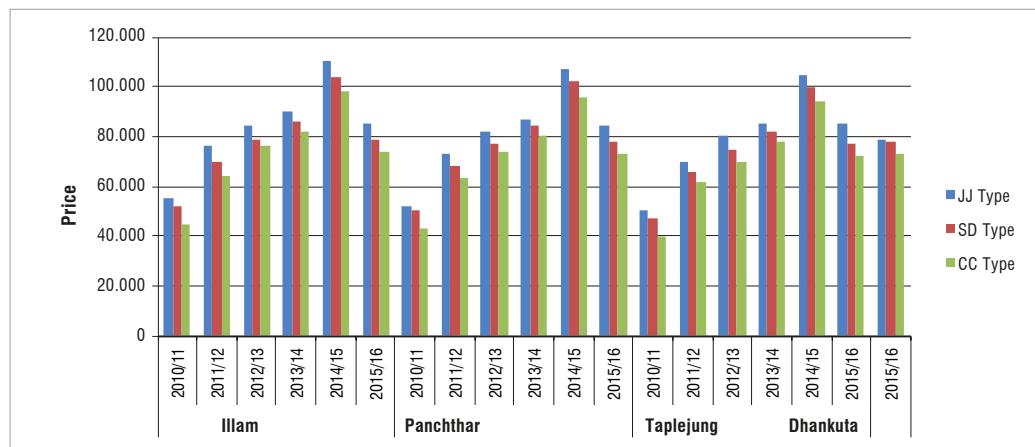
Prices are normally determined by buyers in the Delhi market and subsequently other traders in the central, wholesale, district and village market centres determine their respective prices. Within the country, pricing for traders and farmers is based on the grading of large cardamom. Large cardamom is graded into three categories –Jumbo Jet (JJ), Standard (SD) and Chalan Chalti (CC)– which attract different prices. Grading is determined by four factors: (a) size of capsules (the larger the size the better the price); (b) tail cutting (attracts a higher price); (c) moisture content below 12%; and (d) colour and appearance (light brown attracts a higher price). The available price records per mound (40 kgs) are presented below.

When calculated, the price at Ilam (Fikkal) in 2014/15 was on average US\$ 27.64 per kg for Jumbo Jet, US\$ 25.13/kg for Standard and US\$ 24.62/kg for Chalan Chalti. However, in 2015/16 average prices were recorded at US\$ 20.28/kg for Jumbo Jet, US\$ 18.40/kg for Standard and US\$ 17.69/kg for Chalan Chalti.



Photo: wikipedia commons, Tea and spices - Istanbul spice market.

Figure 12: Price trends of cardamom by quality type and production area, 2010/11–2015/16



Source: FLCEN.

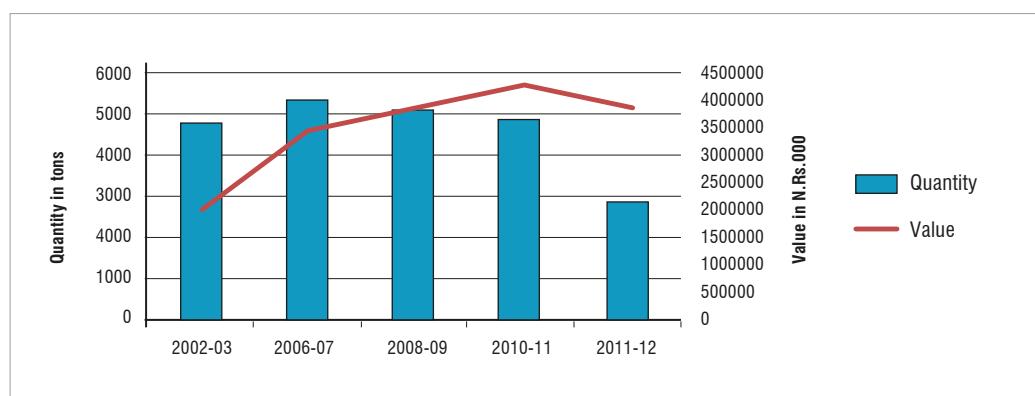
## EXPORT PERFORMANCE

Nepal large cardamom and black cardamom from other origins is directly consumed as an aromatic spice ingredient in different types of foods by oriental people and particularly by the Muslim community. There is a considerable demand for black cardamom in India, Pakistan and also to a lesser extent in Saudi Arabia and the UAE. There is very limited demand in the United Kingdom of Great Britain and Northern Ireland, the United States and Singapore. Currently India is the main market destination (90–95% of total exports) for Nepali large cardamom. Exports from Nepal to other markets like Singapore, Pakistan and the UAE are small and have decreased gradually since 2005/06. The majority of Nepali large cardamom is exported to Delhi and Kolkata in India and a significant portion is then re-exported from India to

Pakistan, the Middle East and other countries where high demand and high price margins reflect the special preference and taste for Nepali origin.

Available data provided by FLCEN show that exports of large cardamom from Nepal increased substantially over 28 years, from 131 tons valued at NPR 3 million in 1979/80 to 6,760 tons valued at NPR 1.092 billion in 2007/08; and subsequently decreased in quantity to 2,930 tons valued at NPR 3.84 billion in 2014/15. However, export value has not decreased in the recent past due to continuous increases in the world market price. In the past two decades the average unit export price increased from NPR 37/kg in 1994/95 to NPR 1,310/kg in 2014/15. It is interesting to note that the recent price in Birtamod remained between NPR 2,000 and 2,500 per kg.

Figure 13: Exports of large cardamom from Nepal to India, 2010/11–2014/15



Source: FLCEN.

## MARKET ACCESS CONDITIONS

### TRADE AGREEMENTS AND TRANSIT TREATIES

As a landlocked country, Nepal faces issues accessing the international market. Bilateral trade agreements and transit treaties are key elements of trade policy with its neighbouring countries. Effective economic integration through improved connectivity and the elimination of border barriers to trade and services should provide Nepal with broader access to regional and global markets. Over the last three decades Nepal has made conscious efforts to foster deeper economic integration with neighbouring countries and regional partners in South and East Asia as well as within the global economy. Nepal has signed 17 trade agreements and two transit treaties, which have provided Nepal with improved market access to regional and global markets. Transit agreements with India and Bangladesh are fully operational. Nepal has also recently signed a transit and transport agreement with China (March 2016) and currently its protocol and operational modalities are under study and preparation.

Nepal acceded to the World Trade Organization in 2004. The country is a founding member of the South Asian Association for Regional Cooperation and has been actively participating in the South Asian Free Trade Area and the South Asian Association for Regional Cooperation Agreement on Trade in Services. Nepal is also a signatory to other important regional cooperation initiatives, such as the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. Similarly, the country participates in the Asia-Pacific Trade Agreement as an observer.

Nepal has bilateral trade agreements with India and China, which are also its major trade partners. The trade treaty signed with India is reviewed periodically and renewed every seven years, with the latest renewal having occurred in October 2016. China also provides zero-tariff access to its market for Nepal's 7,831 export items under a letter of exchange. Nepal's exports also enjoy preferential access to developed countries' markets under the Generalized System of Preferences. Furthermore, the European Union (EU) has offered duty free, quota-free access to all export items under its Everything but Arms initiative. Nepal signed a Trade and Investment Framework Agreement with the United States in 2011.

Even though Nepal has access to many markets through these preferential schemes, there has been limited utilization of the benefits due to variations in the nature of schemes and lack of awareness among Nepali exporters about the requirements to comply with strict rules of origin and other regulatory and administrative procedures.<sup>8</sup> The matter of preferences has also increasingly become a competitiveness concern for Nepal. This is because of erosion of preference margins caused by tariff reductions under the multilateral trading system of the World Trade Organization and unilateral preferential arrangements to least developed countries and developing countries that compete on exports of products similar to those of Nepal. Preferential margins could also be affected with India, Nepal's main trading partner, with a unilateral decision such as India's Duty Free Tariff Preference Scheme<sup>9</sup> to reduce tariffs for Nepal's competitors.

8. NTIS 2016.

9. International Trade Centre (2015). India's Duty Free Tariff Preference Scheme for Least Developed Countries: A Business Guide.

### Box 4: Nepal–India trade treaty

The Nepal–India trade treaty –which provides reciprocal duty free market access on selected agricultural and primary products, along with open and porous borders between the two countries– has created de facto free trade, through formal or informal channels, in agricultural products and also in the inputs market between Nepal and India. In addition, because of the differences in productivity due to differences in technology, scale of operation and the magnitude of government support, Indian agricultural products outcompete some Nepali products in the Nepali domestic market. The major source of agricultural imports is India, and though positively contributing to price stability, it has displaced Nepali cereal products and many other crops like fruit and vegetables in the market, as evident from the consistently increasing share of imported food items.

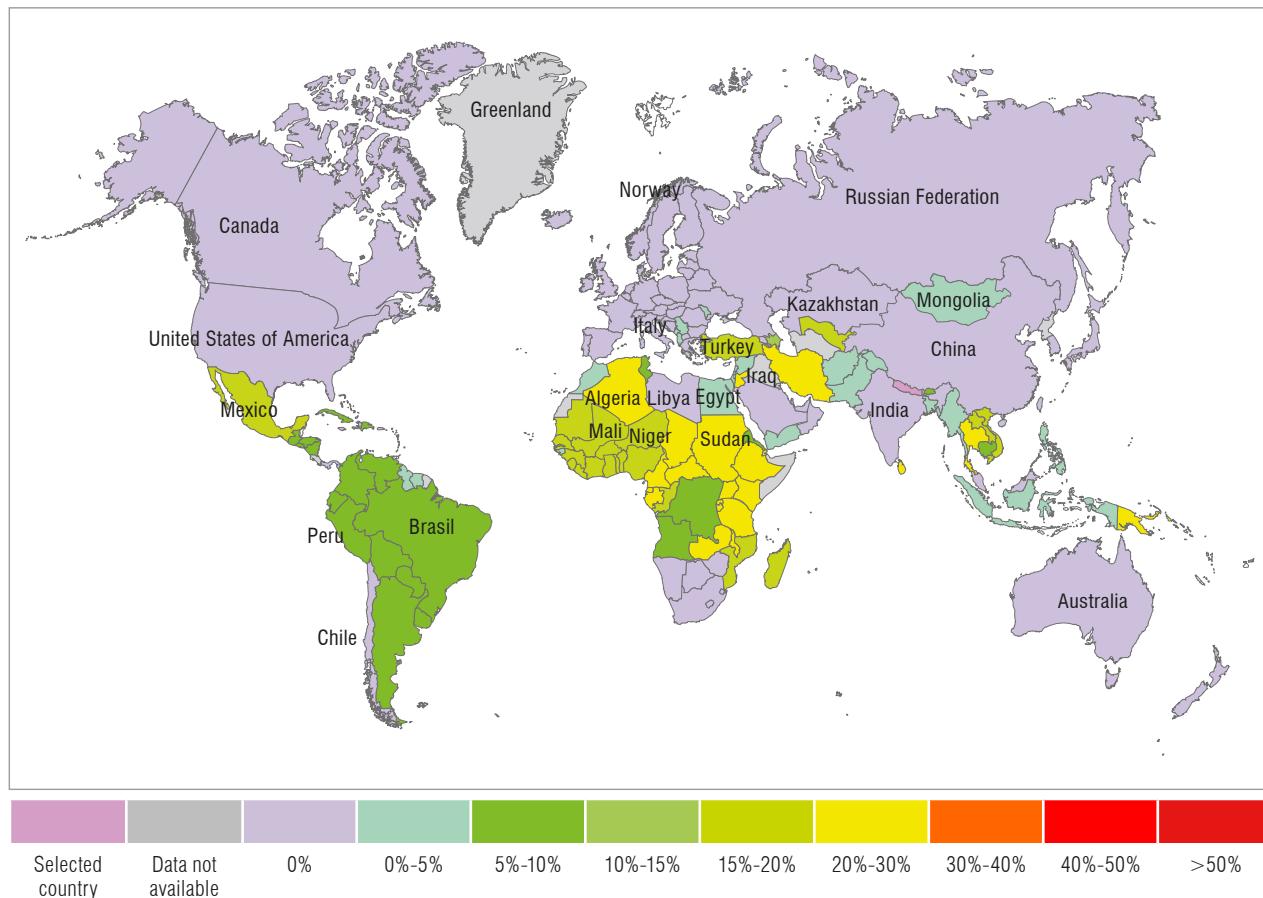
**Source:** Agriculture Development Strategy 2015.

## TARIFF ANALYSIS AND TARIFF ADVANTAGE

As illustrated in figure 14, tariffs imposed on Nepali exports of large cardamom vary widely. Nepal faces 0% tariff under its bilateral trade agreement with its most important trading partner, India, which grants the same

conditions to Nepal's competitor Bhutan but applies a 70% ad valorem tariff to all other exporters. It is important to note that Nepal does not benefit from tariff advantages in its major final destination market, Pakistan. Nepal faces a 5% ad valorem tariff under the Most Favoured Nation trade regime, as do Indian and Vietnamese exporters.

Figure 14: Level of Customs duties faced by Nepali exports of cardamom (HS-090831)



Source: International Trade Centre (2016) (a).

## NON-TARIFF BARRIERS

While tariffs are not a significant restraint on exports of large cardamom, the imposition of various non-tariff as well as para-tariff measures poses challenges for easy access to destination markets. As an agricultural commodity, Nepali cardamom must also comply with legal requirements (sanitary and phytosanitary (SPS) and technical barriers to trade requirements), and sometimes with non-legal requirements such as private standards.

### Legal requirements

Legal requirements are the basis for market entry, and products marketed in any target market must meet these requirements. These requirements are established by law and must be adhered to by all producers who want to export. Any product that fails to meet these requirements is not allowed in the target market.

**Maximum Residue Levels (MRLs):** Monitoring and control of residue levels of agrochemicals in cardamom production is essential for entering most emerging and developed spice markets. Many, if not all, potential buyers will require proof of compliance with the legislation in their country. Therefore, a lab analysis is very often asked for or the buyer does it at a lab in their country. Residue levels are checked on dry material.

#### Food Safety and Standards Authority and Central Food Laboratory (CFL) of India

CFL issues certificates to producers or sellers of cardamom. In the case of Nepali cardamom sales in India, an exporter needs to acquire a CFL certificate for their cardamom products on a yearly basis. For Nepali manufacturers and traders of cardamom it is important to understand that, according to Indian regulations, only importers with an Importer Exporter Code and registered Customs House Agent (on behalf of a registered importer) can submit an application to CFL for the No Objection Certificate to import food items into India. Goods from Customs can be cleared only after submitting the CFL No Objection Certificate to the Customs Authority.

The Food Safety and Standards Authority of the Indian Ministry of Health and Family Welfare has clearly indicated the names of 'notified laboratories' that are responsible for testing food items being imported into India under the provisions of the Food Safety and Standards Act, 2006, and the Food Safety and Standards (Laboratory and Sample Analysis) Regulations 2011. Nepal shares borders with West Bengal, Bihar and Uttar Pradesh states of India and therefore any exports to India from Nepal through land routes will go via border Customs points in these states. Notified laboratories for imports into India in cases of imports from Nepal are: CFL Kolkata (for Bengal and Bihar) and CFL Ghaziabad (near New Delhi, for Uttar Pradesh).

CFL is mandated to send a sample of any imported article to the Authorized Officer for analysis and submission of the Certificate of Analysis. CFL normally sends such samples of Nepali exports of food items to either the Referral Food Laboratory, Kolkata – 700016 or the Referral Food Laboratory, Ghaziabad – 201001. The Certificate of Analysis and report of analysis are issued by the Referral Food Laboratory as specified in the regulation. The regulation also specifies the charges for the test and the quantities of samples that need to be forwarded to CFL. For example, in the case of whole spices (large cardamom), tea and coffee, the sample specified is 500 grams for each test.

#### Market access requirements set up by the spice industry

The spice processing industry, represented in Europe by the European Spice Association (ESA) and in North America by the American Spice Trade Association, has set strict standards for imported spices. Because spices traded in any part of the world will often end up as an ingredient in food products which ultimately find their way to a Western country, it is advisable to comply with these standards. The fastest route to compliance is by following Good Agricultural Practices (GAPs) – by minimizing pesticides used, for example – and Good Manufacturing Practices (GMPs) such as proper drying down to < 12% moisture, clean storage, etc.

Improper and insufficient drying, and transport and storage under damp conditions, may cause mould to form and generate mycotoxins like aflatoxins and ochratoxins, which are carcinogenic and for which strict MRLs apply. Artificial drying with organic combustibles like wood, oil, waste materials, etc. may add unwanted residues like biphenyl and polycyclic aromatic hydrocarbons (PAHs) in spices; these are also carcinogenic and subject to MRLs. Pesticide residues should be absent in spices.

#### Box 5: Steps involved in CFL certificate acquisition

Exporters have to submit cardamom samples of 500 grams from the same invoice to the Office of the CFL Certificate Issuing Authority based at the border point in India. In addition, the exporter has to submit their registration and tax clearance certificate. Application forms need to be filled in, whereupon each producer will have to declare the buyer's credentials based in India. A fee of INR 75,000 is applied for the initial CFL certificate and this, if approved, is valid for six months only. Once the CFL certificate is issued, the producer can export cardamom to India with an additional fee of INR 15,000 per consignment/truckload of cardamom. Every six months the CFL certificate needs to be renewed through the same process.

**Source:** ITC NTM Business Survey – 2016.

## Box 6: Market access requirements imposed by the spice industry

### MRLs:

- Aflatoxin B1 max 5 parts per billion (ppb), Aflatoxin total max. 10 ppb.
- Ochratoxin max. 20 ppb.
- Biphenyl max. 0.05 parts per million (ppm) according to Regulation (EU) No. 978/2011.
- PAH: Benzo(a)pyrene max. 10 ppm, Sum of Benzo(a)pyrene / Benzotriazine / Benzo-fluoranthene max. 50 ppm, Regulation (EU) No. 2015/1933, amending Regulation (EC) No. 1881/2006.
- Pesticides: legal limits for pesticide residues are covered by Regulation (EC) No 396/2005.

### Industry standards:

- Farmers must work according to Global GAPs.
- Facilities must be certified in Hazard Analysis and Critical Control Points (HACCP) and operate according to International Organization for Standardization (ISO) 9001.
- Children working in the processing area must have access to schooling.
- For packed products metal detection is required.
- Before shipping materials, courier a pre-shipment sample, thereby following Sampling Regulation (EC) No. 401/2006.

### Food safety – hygiene – HACCP

Food safety and food control are key issues in most markets. For instance, according to the EU General Food Law (the legislative framework regulation for food safety in the EU), to guarantee food safety and to allow appropriate action in cases of unsafe cardamom, it must be traceable throughout the supply chain and risks of contamination must be limited. An important aspect to control food safety hazards is defining critical control points (HACCP). For example, it is advised to carry out checks for chemical contamination and to keep moisture levels of cardamom under 12%. Another important aspect of controlling food safety is subjecting cardamom to official controls. In the event of repeated non-compliance, cardamom from non-complying countries will be registered on a list included in the Annex of Regulation (EC) No 669/2009. Due to problems with aflatoxins, spices from China and other exporters are currently subject to an increased level of official controls.

In the United States, all commercial imports of food products require the filing of Prior Notice<sup>10</sup> with the Food and Drug Administration, and foreign manufacturers and/or distributors of food products must register with the Administration before their goods may be admitted.

10. United States Food & Drug Administration. Filing Prior Notice. Retrieved from <http://www.fda.gov/Food/GuidanceRegulation/ImportsExports/Importing/ucm2006837.htm>.



**Photo:** ITC, Bags of large cardamom ready for exports

Third party certification is required by the Food and Drug Administration. According to the Food Safety Modernization Act,<sup>11</sup> all imported food (including cardamom) must offer third party testing to ensure the foreign food facilities comply with United States food safety standards.<sup>12</sup>

11. United States Food & Drug Administration. Imports Under FSMA. Retrieved from <http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm257980.htm>.

12. United States Food & Drug Administration. Chemical Contaminants, Metals, Natural Toxins, Pesticides Guidance Documents & Regulations. Retrieved from: <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ChemicalContaminantsMetalsNaturalToxinsPesticides/default.htm>.

## Non-mandatory regulations and private standards

### Traceability

Traceability is an important concept in current international trade in foodstuffs. There are both legal and non-legal aspects to traceability: food ingredients like cardamom should be traceable for **food safety** purposes.

Traceability is the ability to track any food, feed, food-producing animal or substance that will be used for consumption through all stages of production, processing and distribution. In the event of a food incident it enables the identification and subsequent withdrawal or recall of unsafe food from the market. If the food has not reached the consumer, a trade withdrawal is undertaken. If the food has reached the consumer, a product recall is undertaken which includes notification of the consumer through in-store notices and press releases.<sup>13</sup>

Another reason is that clients want to know **who produced the cardamom** they purchased from a more social point of view. They want to know the environmental and socioeconomic conditions of the production, processing and further trade. In other words: what payment do the farmers get, how healthy is the soil where cardamom is grown, are chemicals used in processing, etc. Traceability is essential for larger, sometimes multinational supermarkets and cardamom packers; other buyers are sometimes more interested in quality and MRLs.

## POLICIES GOVERNING THE SECTOR

There is no product-specific policy to support the development of the large cardamom sector. This section, however, provides an overview of key policies which impact the sector, including policies which are still in the draft stage and policies that have already ended but in essence are still continued in strategies and plans.

## NATIONAL PLAN AND AGRICULTURAL POLICY

A draft large cardamom policy is under review at MoAD. The national economic plan – like the 13th Plan, which ended by July 2016, and the 14th Plan, which is under formulation – is expected to support growth of major exportable cash crops like tea, large cardamom and coffee. The 20-year Agriculture Perspective Plan (1995) ended

in 2015. However, its continuity is envisaged through the Agriculture Development Strategy (ADS) 2015 and large cardamom is one of the cash crops receiving priority in such plans, strategies and programmes of MoAD. Important programmes under the 14th Plan include:

- 1. Trade promotion programmes:** Collection and dissemination of information, market promotion, capacity development, research and development (R&D) on export products, and policy advice and advocacy.
- 2. Trade, information and private sector support programmes:** Production development drive for export growth through product quality improvements, design developments and use of new technologies in association with the private sector.
- 3. Nepal Trade Integration Strategy (NTIS) programmes:** Interministerial coordination for the implementation of programmes under NTIS, including establishment and promotion of collective branding, trademarks, traditional knowledge and geographical indications for Nepali products and services.
- 4. Trade infrastructure, logistics and procedural development:** Programmes for the construction and development of inland container depots, container freight stations or dry ports, roads, trade portals, single window systems and roads for the speedy clearance and movement of cargoes, thereby reducing transaction costs and time.

The vision of ADS is: 'a self-reliant, sustainable, competitive and inclusive agricultural sector that drives economic growth and contributes to improved livelihoods and food and nutrition security leading to food sovereignty.' Average agricultural gross domestic product growth is targeted at 6% from the position of 3% in 2010. ADS will accelerate agricultural sector growth through four strategic components related to governance, productivity, profitable commercialization and competitiveness. It has also recognized that farmers have a right to participate in the planning, decision-making, implementation and monitoring of ADS. In the meantime, ADS activities are expected to impact three groups of farmers (commercial, subsistence and landless). Commercial farmers are directly affected by most of the ADS measures: in some cases the impact is direct and very strong, for example in the case of irrigation, mechanization, value chain development and exports.

## NEPAL TRADE INTEGRATION STRATEGIES 2010 AND 2016

The Ministry of Commerce (MoC) launched NTIS 2010 and large cardamom was identified and included as one of the 19 products of priority for export from Nepal. Top priority to large cardamom continued in NTIS 2016. The Government has been implementing various programmes for the development of large cardamom under NTIS

13. European Food Information Council (2014). Food Traceability: Cornerstone of EU food safety policy. Retrieved from [www.eufic.org/article/en/artid/Food\\_traceability\\_cornerstone\\_of\\_EU\\_food\\_safety\\_policy/](http://www.eufic.org/article/en/artid/Food_traceability_cornerstone_of_EU_food_safety_policy/).

in recent years. Notable programmes include distribution of energy-efficient improved dryers to farmers at grass roots level in Panchathar, Sankhuwasava, Terhathum, Bhojpur and Taplejung. The Trade Policy 2015 announced by MoC also prioritizes the development of exportable agricultural cash crops including large cardamom. MoAD has regular cardamom development programmes including technical support to farmers, distribution of disease-free saplings, etc. through the respective District Agriculture Development Offices (DADOs) and CDC at Fikkal. The Nepal Agricultural Research Council (NARC) has regular research programmes in Pakhribas for the development of varieties and agronomic practices for large cardamom in Nepal.

The Enhanced Integrated Framework (EIF) is a multi-donor programme that helps least developed countries play a more active role in the global trading system and is important for coordinating and stimulating development. In 2004, Nepal validated its first Nepal Trade and Competitiveness Study, which allowed the trade development agenda to move forward. In 2009, the Government adopted its trade policy under NTIS 2010 and other sectoral strategies in order to provide directional measures for export promotion. In particular, NTIS 2010 aimed to strengthen Nepal's trade capacity by focusing on cross-cutting reforms to enhance the competitiveness of export sectors and promoting 19 priority goods and service sectors with export potential.

NTIS 2016, the third successive trade integration strategy and main trade strategy document, has laid out actions and measures of intervention in cross-cutting areas and priority export potential sectors. The cross-cutting issues taken up in NTIS 2015 are:

- Trade capacity-building, including trade negotiation
- Trade and transport facilitation
- Standards and technical regulations
- SPS measures
- Intellectual property rights.

Priority export products identified by NTIS 2015 under four broad sectors include:

- Agro-food (cardamom, ginger, tea and medicinal plants);
- Craft and manufacturing (all fabrics, textiles, yarn and rope; leather; footwear; pashminas and carpets);
- Services (semi-skilled human resources; information technology and business process outsourcing; and tourism –leisure, business, education, medical);
- Others (fruits and vegetables, all fabricated steel and metals, lentils, silver jewellery, instant noodles, paper products, wool products, honey, ready-made garments, coffee, semi-precious stones, hydro-electricity).<sup>14</sup>

NTIS 2016 identified large cardamom as one of the top priority export sectors to receive focused attention. The strategy underlines the importance of large cardamom to Nepal as one of the largest producers and exporters in the world. As a high value agro product with increasing demand in global markets, it is a significant source of income and employment for farming households, including women. Additionally, it is mentioned that large cardamom is a suitable crop for geographical and climatic conditions, mainly in hilly districts, and helps prevent soil erosion. NTIS 2016 also indicates a bright future with huge possibilities for the expansion of production areas in hilly regions, productivity enhancement, establishing processing facilities, development of disease-free seedlings and higher demand in third countries. The NTIS 2016 target is production of 6,500 tons of large cardamom annually for the next five years.

## LEGAL FRAMEWORK FOSTERING ENVIRONMENTAL SUSTAINABILITY IN THE AGRICULTURE SECTOR

Environmental sustainability is important to Nepal. This is evidenced through it being a signatory to more than 20 international environmental conventions and agreements, including the United Nations Convention on Biological Diversity, 1992; the United Nations Convention on Combating Desertification, 1994; the United Nations Framework Convention on Climate Change, 1992; and the Kyoto Protocol, 1997.

With its strong institutional and legal framework for environmental protection, Nepal established the Ministry of Science, Technology and Environment and a high-level Environment Protection Council, and also enacted the Environment Protection Act, 1996 and the Environment Protection Regulations, 1997. Nepal prepared and implemented guidelines on Environmental Impact Assessments and Strategic Environmental Impacts to assess the impact of all development projects.

Some programmes and policies that support the integration of environmental sustainability into the development of the agricultural sector in Nepal are the Nepal Biodiversity Strategy (2002), Nepal Biodiversity Strategy Implementation Plan (2006–2010), National Biosafety Framework (2007), Forestry Sector Policy (2000), Herbs and Non-Timber Forest Products Policy (2006), National Wetlands Policy (2003) and so on.

14. Executive summary NTIS 2015.

## INVESTMENT POLICY

### INVESTMENT CLIMATE AND INVESTMENT-FRIENDLY POLICIES IN NEPAL

For the past two years, the agricultural sector and other export sectors have been negatively affected and stunted due to two major shocks that happened in Nepal : the April 2015 earthquakes that caused huge loss of life and assets, and the political tension that disrupted external trade.<sup>15</sup> Compared with countries such as Bhutan or Bangladesh, Nepal performs at a lower level in terms of electricity and transportation. However, it performs better regarding tax rates and tax administration, labour skills, the functioning of courts and business licensing permits.<sup>16</sup> Due to poor infrastructure, crime and vandalism, Nepali firms bear higher aggregate costs associated with the poor investment climate than any comparator countries.

The country is now in the process of full fledge implementation of the new Constitution, where local election has already been completed and the election for federal parliament and provincial parliament is approaching very close. This will definitely drive the country towards socio-economic development by keeping these agenda on the top in the days ahead.

15. The World Bank (2016). Nepal Development Update, May 2016: Remittances at Risk. World Bank, Kathmandu. Retrieved from <https://openknowledge.worldbank.org/handle/10986/24663> License: CC BY 3.0 IGO.

16. Afram, Gabi G.; Pero, Angelica Salvi Del (2012). *Nepal's investment climate: leveraging the private sector for job creation and growth.* Directions in development; private sector development. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/343221468157793055/Nepals-investment-climate-leveraging-the-private-sector-for-job-creation-and-growth>.

Nepal has a lot of export potential in the agricultural sector. According to a World Bank study,<sup>17</sup> one of the main reasons why it is being held back is because of low levels of foreign direct investment. The bulk of exports of its products such as teas, herbal remedies and spices, which are said to fit the 'brand' of Nepal, are of low quality. Additionally, its imports are repeatedly rejected due to being part of the lowest quintile of countries for food safety.

In October 2016, the Nepal Industrial Enterprise Act 2016 was approved by Parliament, which has also approved amendments of the Labour Act to make the business environment more investment-friendly with more flexible labour regulations on 'no work no pay'. Additionally, the Foreign Investment and Technology Transfer Act was introduced as the most liberal regulatory measure for the promotion and attraction of foreign direct investment in 1992. An amendment is currently being prepared to make the business environment even more investor-friendly.

**Government incentives in the cardamom sector:** Exports of cardamom to third countries attract a cash incentive of 1% against the convertible currency earned. This incentive is mainly to encourage export market diversification and also to compensate the high transaction costs of doing business with countries other than India.

17. The World Bank (2016). Could Trade and FDI be the Key to Unlocking Nepal's Potential? New Report Suggests 'Yes'. *The World Bank*, Retrieved from <http://www.worldbank.org/en/news/feature/2016/07/12/could-trade-and-fdi-be-the-key-to-unlocking-nepals-potential>.

Table 5: Investment climate in Nepal and neighbouring countries

International benchmark	Viet Nam	China	Pakistan	Nepal	Sri Lanka	India	Bangladesh	Myanmar
Ease of Doing Business ranking (World Bank Group, 2016)	90	84	138	99	107	130	174	167
Competitive Industrial Performance ranking (United Nations Industrial Development Organization, 2012)	55	5	73	128	79	44	77	Not ranked
Global Competitiveness Index (World Economic Forum, 2015-2016)	56	28	126	100	68	55	107	131
Inward Foreign Direct Investment Performance Index (United Nations Conference on Trade and Development, 2010)	22	86	110	134	113	97	114	52
Corruption Perception Index (Transparency International, 2015)	112	83	117	130	83	76	139	147
Economic Freedom Index (Heritage Foundation, 2016)	131	144	126	151	93	123	137	Not on the list



Photo: ITC, Pink large cardamom

## DEVELOPMENT ACTIVITIES SUPPORTING THE SECTOR

Various development agencies are active in the sector. Among them is UNNATI, a major project currently being implemented. UNNATI is an agricultural development project funded by the Danish Government, with three components working in seven districts of eastern Nepal. The objective of the value chain component is to ensure sustained improvement in the competitiveness of selected products like tea, large cardamom, ginger and dairy products. Major areas of intervention include:

- Strengthen applied research on farmers' production issues
- Improve farmers' practices in increasing productivity and quality of production
- Improve availability of quality inputs to farmers
- Value addition and market diversification.

UNNATI collaborates with: (a) different Government and research institutions on the basis of a memorandum of understanding; (b) service providers for research, studies, assessments, training, capacity-building and specific task implementation; and (c) the UNNATI Challenge Fund for value chain development and market infrastructure. In the past UNNATI had a memorandum of understanding with NARC to strengthen the tissue culture laboratory at the Agricultural Research Station Pakhribas, and preparation and publication of improved production technology manuals for ginger and large cardamom. It also had an agreement with AEC/FNCCI to:

- Lead farmers and farmer training
- Select Local resources person (LRP) and establish a LRP-based extension system in selected Village Development Committee clusters
- Strengthen cardamom nurseries
- Promote compost, vermicompost and urine biopesticides
- Pilot model cardamom orchard management in selected cardamom pocket areas.

Currently UNNATI is working to conclude a memorandum of understanding with the Department of Agriculture (DoA) to: (a) strengthen cardamom nurseries for improved supply of disease-free seedlings and suckers; and (b) promote improved cardamom orchard management, including management of soil and plant nutrients; removal of disease-infected plants; and irrigation and shade.

Major activities for funding of UNNATI include:

- Training of field-level technicians in cardamom GAPs
- Development of lead farmers as LRP for extension of improved farming practices at farm level, including demonstration of improved technology and practices
- Strengthening of cardamom nurseries
- Soil testing and mobile soil testing camps
- Demonstration and promotion of improved compost-making, vermicompost and biopesticides
- Piloting of model cardamom orchard management
- Use of local radio, pamphlets, etc. for dissemination of improved technology and practices.

Table 6: Past and ongoing trade and value-chain-specific development assistance

Donors	Programmes	Description	Role in economic growth and employment creation / sector activity: cardamom	Impact on the sector
Danish International Development Agency and Embassy of Denmark	UNNATI– Inclusive Growth Programme in Nepal <b>Lead agency:</b> <b>Period:</b> 2014–2018 <b>Budget:</b> €54 million	Areas of UNNATI intervention on value chains are: strengthening applied research on farmers' production issues; improving production practices for productivity and quality; improving supply of quality inputs; and supporting value addition and market diversification.	Value chain (€14 million: As one of the components): UNNATI focuses on the commercialization of the value chains within large cardamom, ginger, dairy and organic tea products. UNNATI also works on widened financial services for smallholder farmers and micro, small and medium-sized enterprises.	Farmers and entrepreneurs in seven districts of eastern Nepal will be able to sell and earn more, both regionally and globally, by improving the value chain and getting access to better finance, technology, and infrastructure. It is expected that project impact will increase the production of cardamom.
World Trade Organization/ EIF	Nepal Enhanced Capacities for Trade and Development (NECTRADE) 1 <b>Project period:</b> 15 March 2010 to 28 February 2017. <b>Budget:</b> Tier 1: US\$ 1,685,000 Tier 2: US\$ 7,820,000	The EIF Tier 2 Process is supported by the EIF Trust Fund for priority small-scale projects to build up trade-related and supply-side capacities. NECTRADE supervises and monitors the implementation of projects in collaboration with other development partners.	In the past NECTRADE supported some programmes such as buyer–seller meetings, media broadcasting and Public-Private Dialogue in the sector.	The NECTRADE project has contributed indirectly to increasing export trade, income and employment generation and also encouraging women entrepreneurs; strengthening of institutions; and supporting in formulation of trade policies and strategies that are directly concerned with the export priority items like tea, coffee, large cardamom and handmade paper and paper products
World Bank	Project for Agricultural Commercialization and Trade <b>Lead agency:</b> MoAD <b>Period:</b> 2009 – June 2018 <b>Budget:</b> US\$26,550,000	The Project for Agriculture Commercialization and Trade operates with MoAD as the executing agency. <b>Component 1:</b> Agriculture and Rural Business Development <b>Component 2:</b> Support for SPS Facilities and Food Quality Management (QM)	The overall project objective is to improve the competitiveness of smallholder farmers and the agribusiness sector in selected commodity value chains. This will be achieved by helping farmers in market-oriented production and improved access through technology and information services, infrastructure and linkages; creating and strengthening industry-wide partnerships among stakeholders along the value chain; and reducing existing obstacles to trade, thereby increasing SPS measures and food quality standards to market requirements.	The second component aims at strengthening the efficiency and effectiveness of SPS services in order to reduce existing obstacles to agricultural and food trade. The products that will benefit from better SPS services include tea, large cardamom and coffee.

## VALUE CHAIN MAPPING: CURRENT SITUATION

### INPUTS

Most of the inputs for the production of large cardamom are available in Nepal. Major foreign inputs are imported into Nepal by specialized importers like the Agriculture Inputs Company, agro-vet services and material providers. Large suppliers at the central and district level supply to farmers through their district or local level distributors, agents, retailers or agro-vet supplier shops. Table 7 clearly presents the input requirements and suppliers network.



**Photo:** Mountain Partnership at FAO, A young farmer showing his cardamom nursery in salekpur villa in ilam, Nepal.

Table 7: Cardamom input requirements and suppliers network

Inputs required	Suppliers	Source or origin
Land and labour	Locally available	Nepal
Seedlings or seeds	Locally available or from DADO, CDC or private nurseries	Nepal and India (Sikkim)
Water and electricity	Drinking Water Corporation and Nepal Electricity Authority	Nepal
Fuel	Nepal Oil Corporation	India
Machinery and tools	Regional or district distributors	India or Nepal
Fertilizer and pesticides	Agriculture Inputs Co. or district distributors	India
Jute bags	Jute products manufacturing companies in Biratnagar	Nepal
Jute bags, plastic-coated	Plastic and plastic bag manufacturing companies	India and Nepal

### MAJOR ACTORS AND FUNCTIONS

#### Farmers

Individual farmers in the villages are the main actors engaged in production of large cardamom, representing almost 97% of total production. According to a recent study by the UNNATI project, it is estimated that there are more than 67,000 farmers engaged in large cardamom production.<sup>18</sup> These farmers carry out the following functions:

- Prepare land for planting
- Prepare compost manure
- Purchase or grow saplings and shade plants
- Purchase fertilizers, pesticides and packaging materials
- Prepare or purchase tools and equipment
- Transplanting and planting management
- Water, fertilizer, compost and pesticide uses
- Harvesting
- Postharvest practices: cleaning, tail cutting, drying, grading, bulk packing, storing and transportation to village collection centres. Harvested products are washed and cleaned and taken to the dryer within seven days of harvest.

The majority of farmers pack dried large cardamom in 40 to 70 kg jute bags manufactured in Biratnagar (Nepal) and transport the products to village or district market centres. Traders and large collectors in Birtamod do the cleaning, cutting and packaging for export. These traders also apply their own branding.

Transportation from farmers to village collection centres: various means of transportation are used depending on the volume of products, distance, types of roads and availability of transport means. A human can carry a load up to 40 kg at a time; a donkey carries up to 100 kg; a tractor can carry up to 500 kg; and a pickup van can carry up to 1,000 kg.

18. UNNATI (2016). Large Cardamom Value Chain Analysis for Market competitiveness in UNNATI's Working Districts. Tej Thapa.

### Box 7: Drying, grading and packing

According to a MoAD report, farmers are practising some measures to improve the value of larger cardamom. Some of these practices are:

#### A. Drying

a. Traditional method	95%
b. Semi-Improved method	4%
c. Improved method	1%

#### B. Grading

a. Sizing	6%
b. Colour separation	3%
c. Tail cutting	91%

#### C. Packaging

a. Jute bags	76%
b. Plastic bags	7%
c. Jute bags with plastic inside	17%

**Source:** MoAD, Trade Flow Analysis of Large Cardamom in Eastern Region.  
Average figures calculated by ITC Team based on the 2015 Field Survey of MoAD Officials.

### Local collectors (agents of district traders)

Local collectors are the agents of large collectors or traders in district-level market centres, who themselves work on behalf of district traders or wholesalers in Birtamod. In each district, clusters of villages have their own collection centres. There are normally 3–10 such village collection centres in each district. Local collectors play the following roles in the cardamom business:

- Meet farmers in village collection centres and discuss the prospects for collection of large cardamom during the season (September to November) with a view to assessing the overall business forecast and possible price trends.
- Provide assurance of buying large cardamom during the season.
- Provide feedback and farmers' views to district-level traders.
- Provide preharvest advance payment in cases where farmers need money in advance.
- Advise on the types of product processing and preparation – including tail cutting, grading and packaging – required by district-level traders.
- Collect harvested products from farmers or at the collection centres.
- Transport the products to the district market centre.
- Arrange payments to farmers.

### District traders

In each district there are two to five market centres with many traders at district level engaged in large cardamom. The products are transported to and collected at district market centres from village collection centres. Local collectors play an important role in arranging both transportation of products from village collection centres and the handover of products to district traders. The major functions of district traders include:

- Mobilize local collectors in villages and village collection centres to develop linkages with farmers and exchange information on preharvest production status and stocks with farmers.
- Make provision for advance payments to farmers for purchase after harvesting.
- With the help of local collectors from village collection centres, make transportation arrangements to district markets.
- Arrange cleaning, grading, repackaging and storage until the product is demanded by wholesalers in Birtamod.
- Determine the final price of large cardamom based on the Birtamod price.
- Make final payments to farmers through local collectors.
- Arrange transportation of product up to wholesalers at Birtamod.

**Table 8: Production sites, collection centres, district markets and number of actors**

District	Production sites	Village collection centres	District market centres	No. of local collectors	No. of district traders
Ilam	28	16	3	112	32
Panchthar	22	9	5	98	35
Taplejung	27	5	2	125	25
Dhankuta	28	22	2	22	12
Bhojpur	15	4	1	5	5
Terhathum	22	6	3	20	15
Sankhuwasava	16	16	4	20	12
Others (estimated)	60	50	12	150	60
<b>Total (estimated)</b>	<b>218</b>	<b>158</b>	<b>32</b>	<b>552</b>	<b>196</b>

**Source:** MoAD and estimation made by the ITC Study Team during field visit. and interactions during June/July 2016.

### Transportation from village collection centre to district or wholesale market in Birtamod

Most of the village centres have road access and therefore a tractor or pickup van are used – depending on the quantity of product – to reach the district markets and wholesale market at Birtamod. A tractor or pickup can carry from one to five tons at a time.

### Wholesalers at Birtamod

The study team found that there are about 30 wholesalers/traders in Birtamod, of which only four are exporters of large cardamom. These wholesalers/exporters conduct the following functions for the large cardamom business in Nepal:

- Provide assurance of purchasing large cardamom from district traders and from some of the large collectors at village level.
- Arrange payments for goods to district traders and transportation management up to Birtamod.
- Organize grading, packaging, storage and transportation from Birtamod to the Biratnagar/Jogbani border crossing point.
- Prepare export consignments and process documentation for clearance at Biratnagar Customs point.

**Tail cutting and cleaning:** Tail cutting is a tedious process, done using simple scissors, it is carried out by women who are paid by the volume/weight that they process. Cleaning is done by both women and men.



Tail cutting



Cleaning by women



Cleaning by men

## Grading

Grade and specifications	Jumbo Jet Makhan	Standard Khusbod	Normal Muscaan
Hygiene	free of dust, stones, fungus		
Size	Large	Large	Small
Tail cut	Yes	Yes	<15% tail
Colour	Natural	Natural	Natural
Moisture	<12%	<12%	<12%
Medium-sized	<5%	<10%	



Three grades are presently applied

'Normal' grade: 15% with tail

## Packing

Presently, Nepal collectors/exporters only sell whole pods; they use superior jute handy bags, some even with a branded label.



10 kg handy bag



5x10kg handy bag



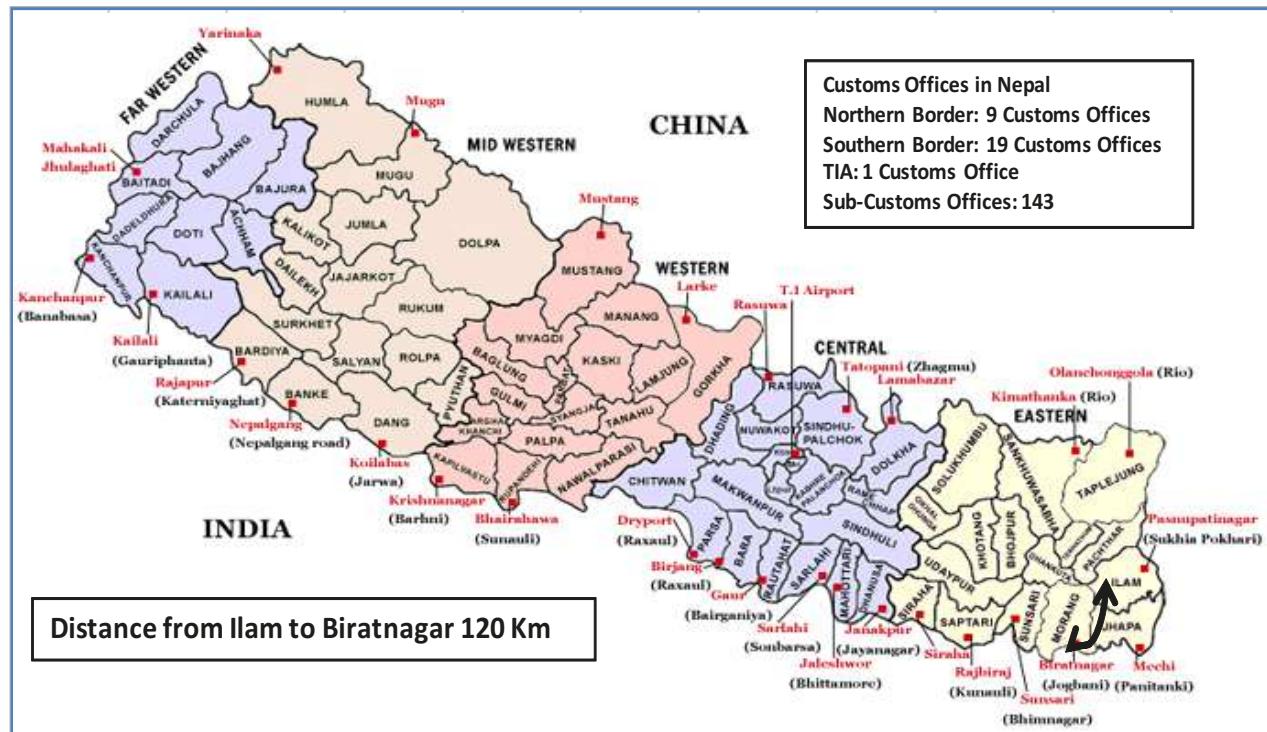
Jute handy bags 25 kg



### Transportation from Birtamod to Delhi or Kolkata

Indian trucks have access to Birtamod. Consignments are directly loaded from the warehouse of the wholesaler to the truck and the truck travels to India through the Biratnagar/Jogbani Customs point. An interesting point to note here is that there are only two Indian transport companies that have monopolized the transportation of large cardamom from Nepal to India. The average truckload is about 10 tons of large cardamom.

Figure 15: Customs offices in Nepal



### Box 8: Reasons for the existence of limited number of exporters of large cardamom

1. There are only two transporters who can manage safe transportation of goods to Delhi.
2. Exporters have to prepare invoices as per the advice of the transporter and the importing party.
3. There are many hassles en route to Delhi and informal costs come to INR 25 per kg.
4. There are many risks associated with transportation and export of large cardamom from Nepal to India. Indian buyers are prepared to take the risks and transport the goods, even without an invoice, which is not possible for Nepali traders.
5. There is a provision of 4.5% state movement tax in India. It is not possible for Nepali traders to compete in the market if these types of taxes have to be paid on value. Formal export is possible only if such tax is specific or imposed by quantity.
6. It is also not possible for Nepali traders to insure the consignment as (Indian) importers wish to have undervalued invoices.
7. It takes one month for a consignment to travel through Kolkata to Karachi and during this time prices may fluctuate, potentially resulting in a huge loss either to buyer or seller.
8. It has not been possible to establish business relationships and trust with buyers in Pakistan and Bangladesh.
9. The Customs tariff on large cardamom in Bangladesh is more than 54% for Nepal, while the tariff imposed on Bhutan for large cardamom is substantially waived.
10. India has waived all types of tax on the movement of Bhutanese products through the territories of India.

## EXPORT MARKETS

Earlier the main market hub for large cardamom was Siliguri in India. In the last 10 years the market hub has shifted to Kolkata and Delhi. About 50% of Nepali large cardamom moves to other countries (particularly to Pakistan) from Kolkata and Delhi through Mumbai and Amritsar. Payment is cost and freight (CFR)–Delhi.<sup>19</sup>

### Major market centres for large cardamom<sup>20</sup>

1. India:
  - 1.1. Siliguri: Alupatti New Market
  - 1.1. New Delhi: Garodia Market
  - 1.2. Kolkata: Amartola and Armenian Streets
2. Pakistan
  - 2.1. Karachi: Jodia Market
  - 2.2. Lahore: Akbari Mandi
  - 2.3. Rawalpindi: Ganj Mandi
3. Bhutan: Phuntsholing Auction Market
4. Nepal: Fikkal, Dhankuta and Birtamod



Photo: ITC, Truck transporting large cardamom

Foreign markets accept 10 kg and 25 kg bags of plastic-coated jute. When shipping, five of the 10 kg bags are packed in one large plastic bag and two of the 25 kg bags are packed in one large plastic bag. Therefore, the shipment is always in 50 kg plastic bags. Some consignments are also packed in 50 kg jute bags depending on the buyer's requirements.

19. Incoterms 2010: CFR = Cost and Freight, FOB = Free on Board (Kolkata), CIF = Cost Insurance Freight

20. Munankami, R. and Gautam, M. (1988). International Market Study on Large Cardamom (Field Survey Report). *Ministry of Agriculture, Department of Food and Agriculture Marketing Services and Trade Promotion Centre 2045.*

Figure 16: Value chain map

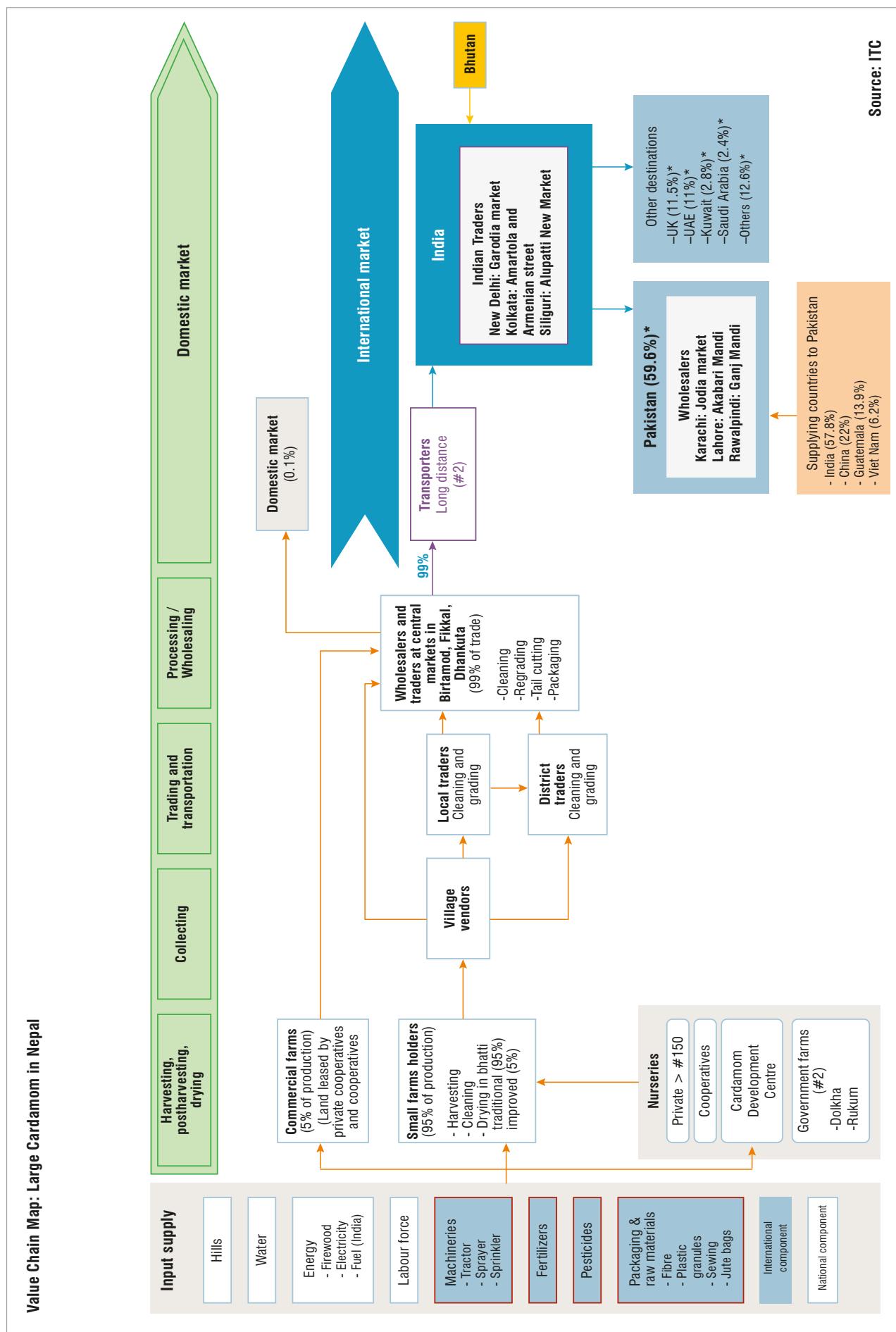
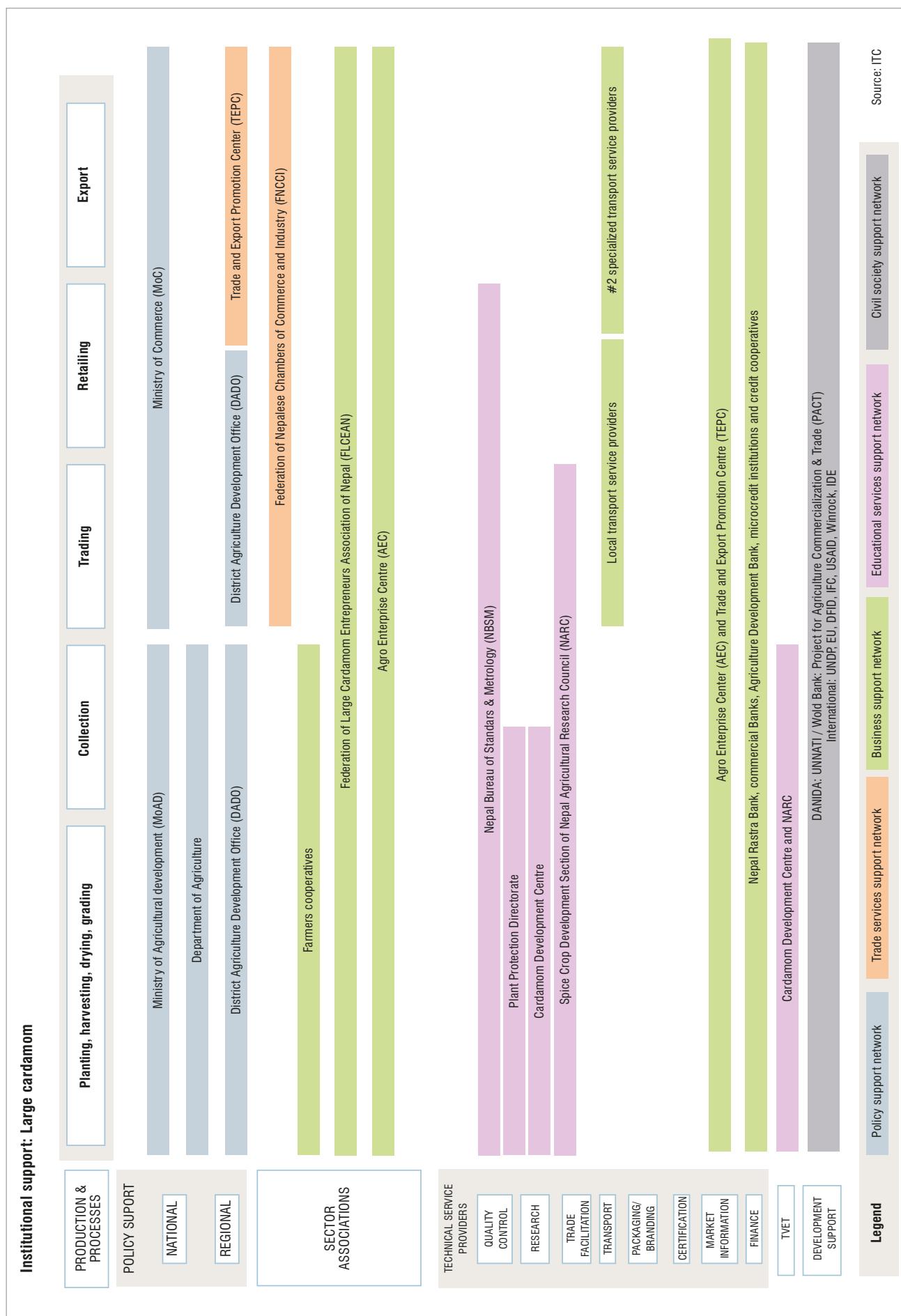


Figure 17: The Nepali large cardamom sector trade support network



## THE TRADE SUPPORT NETWORK

The future success of the Nepali large cardamom sector will not only depend on the internal capacities of the communities and traders operating in the industry. In order for the sector to remain competitive, participating enterprises and farmers must be able to rely on a capable network of government and private sector support institutions. The overall trade support network (TSN) of the large cardamom sector in Nepal is considered for this sector Strategy as the aggregate institutional framework in the country, bringing together those institutions that have a particular interest in, or bearing on, the export development and competitiveness of the sector. Broadly, the TSN comprises the following support areas: policy support network, trade services network, business services network, educational services network and civil society network. Figure 17 (above) displays the main actors in the large cardamom TSN, categorized by functions along the value chain.

### POLICY SUPPORT NETWORK

#### Ministry of Commerce

Large cardamom is a fully export-oriented cash spice crop of Nepal. Therefore, MoC gives it priority in its policy agenda and intervenes directly in trade development and promotion of large cardamom. Large cardamom was identified and included as one of the 19 priority products in NTIS 2010 and this was continued in NTIS 2016. In the past several years MoC has been implementing various product and market development programmes for such priority products under the NTIS through the Trade and Export Promotion Centre (TEPC) and NECTRADE.

#### Ministry of Agricultural Development

MoAD has various departments and agencies responsible for the policy and technical services required for the development of large cardamom in Nepal. The various institutions for the promotion and development of large cardamom in Nepal include:

##### I. Department of Agriculture

The main objective of DoA is to increase production and the productivity of agricultural products and agricultural inputs to meet both domestic and international demand for such products and to implement production- and employment-oriented agricultural programmes for small farmers, disadvantaged groups and women. DoA has 12 functionary sections and 184 offices. The most active in the sector are DADO, the

Regional Agriculture Directorate, Regional Agricultural Training Directorate, Regional Soil Test Laboratories, Regional Plant Protection Directorate, Agricultural Development Farms, and Plant Quarantine Office and Check Posts. All of these offices are responsible for the implementation of national plans and annual programmes for the overall development of agriculture in the country.

##### a. Plant Protection Directorate

The Directorate functions under DoA in Kathmandu. It is responsible for implementing the mandates given in the Plant Protection Act and Regulations of Nepal and it has been a member of International Plant Protection Directorate since 2006. It has two wings with separate responsibilities: (a) Regional Plant Protection Laboratories (five regional offices including Kathmandu), responsible for plant disease and pest diagnosis, survey, surveillance and information; and (b) the National Plant Quarantine Programme, responsible also for quarantine checks and product SPS certification at border points. There are five regional plant laboratories (at Kakarvitta, Birgunj, Bhairahawa, Nepalganj and Gaddachauki) and 10 plant quarantine checkpoints and subcheckpoints at different border points in Nepal.

##### b. Cardamom Development Centre, Fikkal

The CDC was established in 1976 and is located at Pandham of Fikkal in Ilam District. This Centre is the national specialized and focal R&D agency for the development of large cardamom farming. It has been working on 372 *ropanis* (19 ha) of land for production of seedlings, nursery management, preservation of seeds (germplasm) of different cultivars (Ramshai, Golshai, Chibeshai and Varlange) and distribution of seeds and saplings to farmers in different districts of Nepal. Currently the CDC provides training to farmers and conducts limited research on varieties and improved dryers.

##### c. National Spice Crops Development Programme

This Programme works under the Vegetable Crops Development Directorate of DoA and is responsible for feedback to MoAD and DoA on policy formulation, management of subsidies, training and technology transfers for all types of spice crops, including large cardamom, ginger and turmeric. It also sporadically implements some product development programmes such as distribution of materials for construction of improved dryers, support at new production districts and development of nurseries for distribution of seeds and saplings.

## II. District Agriculture Development Office

In each district DADO works on behalf of DoA, and ultimately MoAD, for overall development of the agriculture sector. In cardamom producing districts, specific responsibilities of DADO include:

- Production area expansion;
- Support for the establishment of cardamom plant nurseries;
- Distribution of seeds and seedlings;
- Training on cardamom farming, agronomy, plantation management and harvesting and processing;
- Coordinating district-level stakeholders and conducting consultative dialogues on policy formulation, farming practices and crop management facilities for overall improvements including processing techniques.

Presently, DADOs also work to support distribution of dryers, allocation and construction of collection centres and stores, and distribution of seedlings and improved packaging materials to farmers.

## TRADE SERVICES NETWORK

### Trade and Export Promotion Centre

TEPC, the Government authority under MoC established in 1971 with the objective of national trade promotion, supports stakeholders in product development, trade and market research, and market promotion of export products of Nepal. TEPC services include market information and market research; training on trading systems, trade policy, marketing and product development; and market penetration measures including Nepal's participation in international trade fairs, buyer-seller meets and store promotion. TEPC is also responsible for maintaining foreign trade data and informing entrepreneurs about global trade scenarios for major export products of the country.

Recently TEPC, in collaboration with FLCEN and other major trading groups, established a collective trademark or logo for large cardamom: Everest Big Cardamom. This trademark is already registered with the Department of Industry. A norm has been developed that describes eligibility for the use of this logo on the packaging materials and letterheads of large cardamom processors and exporters. However, this collective trademark needs to be registered with legal support in major markets such as India, Pakistan and Dubai. TEPC has made a collaborative effort with FLCEN and AEC/FNCCI to distribute and set up improved dryers in new cardamom plantation areas.



Photo: ITC, Woman processing large cardamom

### Agro Enterprise Centre

AEC, initially set up as a project funded by the United States Agency for International Development, is the agriculture wing of FNCCI. AEC is focused on policy lobbying on behalf of private sector entrepreneurs and farmers involved in the production and trade of crops. It collects qualitative and quantitative domestic and international information including price, quality and production of agro products, and analyses and disseminates such information to stakeholders including the Government, farmers and institutions. In the past AEC has played important roles in policy advocacy for large cardamom and in the recent past it has constructed more than 135 improved dryers in new cardamom production districts like Kavre, Dolka (20), Sindhupalchowk (100), Rolpa (15), and Lamjung (20). For about nine months. from November 2015 to July 2016. UNNATI and AEC had an agreement for collaborative activities to support the development of large cardamom production.

### Nepal Bureau of Standards and Metrology

This is the national standards body of Nepal. It is a department under the Ministry of Industry. It became a member of ISO in 1991, the International Organization for Legal Metrology in 1983 and the International Electrotechnical Commission in 2001. Its function is to work as a secretariat for the Nepal Council of Standards and it grants the licence to use the Nepal Standard mark on industrial products that are in compliance with the relevant Nepal Standards as approved by the Council. The Bureau inspects and supervises activities on industrial production and processes and carries out necessary surveillance in the market. It also inspects facilities.

## SECTOR ASSOCIATIONS/ COOPERATIVES

### Federation of Large Cardamom Entrepreneurs of Nepal

The main objective of FLCEN is to conduct policy advocacy on behalf of its members who are involved in the large cardamom business in Nepal. It works hand-in-hand with farmers, traders, wholesalers and exporters. FLCEN has 84 members at central level. It has 13 branches in 13 districts with a total of 745 members. In the past its efforts focused on:

- Policy lobbying
- Membership drives
- Implementation of the NTIS
- A collective trademark
- Lobbying for construction of a warehouse at Birtamod
- Mobilization of local development bodies
- Participation in trade and social events
- Providing support to farmers for disease-free plants
- Training for agronomic consciousness
- Discouraging deforestation
- Provision of concessional credit.

FLCEN frequently works in collaboration with MoAD, MoC, the Ministry of Industry, the National Spice Crops Development Programme, TEPC, AEC/FNCCI, and other national and international institutions for activities related to large cardamom development and promotion. Contribution is financed by a levy of NPR 0.5 per kg sold.

## RESEARCH

### Nepal Agricultural Research Council

NARC was established in 1991 as an autonomous organization under the Nepal Agricultural Research Council Act of 1991 to conduct agricultural research in the country at a national level. The development objectives of NARC are to conduct qualitative studies and research, identify constraints and issues, and propose policy and strategic measures for the overall development of agriculture. NARC also coordinates, monitors and assesses agricultural research activities conducted by other government and non-government agencies in Nepal. It has four Regional Agriculture Research Stations at Tarahara, Lumle, Parwanipur and Nepalganj. There are many research stations under these regional stations. The Agricultural Research Station in Pakhribas is involved in crop research and training on the agronomic, preharvest and postharvest practices of large cardamom. NARC also has separate programmes for coffee, ginger and hill crops, among many other programmes.

MoAD recently established the National Commercial Agriculture Research Programme (NCARP) in Pakhribas. This office is also responsible for conducting research on large cardamom varietals and agronomic practices.

## BUSINESS SERVICES NETWORK

### Nepal Freight Forwarders' Association

The Nepal Freight Forwarder's Association facilitates international trade by delivering goods to their destination quickly and efficiently and it helps exporters and importers select the most appropriate means of transport for specific cargoes to specific destinations. Some important services provided by the Association are:

- To represent the freight forwarding community in national and international forums
- To provide expert and consultancy services to the Government as well as to its members as needed
- To establish and maintain relationships with national and international organizations and associations
- To provide airport and Customs agent services
- To collect and publicize data, statistics and news about the freight forwarding industry
- To provide advice to the Government in the interests of its members and the nation.

At present the Association has 118 members.

## FINANCIAL SUPPORT SERVICES

Various commercial banks, development banks, financial institutions and cooperatives are involved in different districts to provide credit facilities to traders for the purchase, processing and trading of large cardamom in almost all districts. The terms of credit depend on the purpose, client's relations with the bank and current market rates. However, farmers do not have easy access to credit facilities to purchase land or inputs or arrange other production operations.

## TRADE SUPPORT NETWORK PERFORMANCE ANALYSIS

There is very limited support for the large cardamom sector at the policy level from the different ministries or from technical agencies. The unique public institutions which have been actively engaged in recent years are TEPC with trade promotion support and FNCCI on private sector engagement. The ITC Non-Tariff Measures Business Survey in Nepal shows that the trade support network



Photo: ITC, Large cardamom plants in Cardamom Development Centre

for the large cardamom sector is barely existent.<sup>21</sup> All but one of the companies in the survey receives support from government agencies. Asked to rate the overall performance of the trade support network, this company mostly rated it as 'poor'. Although the limited number of respondents cannot represent the overall perception from the private sector perspective, the results match the opinions expressed during the two sector stakeholder consultations.

21. International Trade Centre (2016). Non-Tariff Measures Business Survey in Nepal. The ITC NTM Survey allows companies to directly report the most burdensome NTMs and the way in which they impact their businesses. The survey also takes into account inefficiencies in the trade-related business environment. Seven companies of the large cardamom sector participated in the survey.

A number of key institutions play a critical role in the development of the large cardamom sectors. The most relevant are plotted in table 9 according the perceptions of ITC analysts and sector stakeholders, in terms of the institution's importance for the sector and its capacity to fulfil mandates as they relate to the large cardamom sector. Most of the institutions listed have a significant level of influence on the sector. The lack of political support for the sector is reflected in the limited financial resources available to ministries and related technical agencies to respond to the specific needs of the sector.

Table 9: Perception of trade and investment support institutions – influence versus capacities

Capacity to influence the large cardamom sector	Capacity of the institution to respond to the needs of the large cardamom sector		
	Low	Medium	High
High	<ul style="list-style-type: none"> <li>• MoAD</li> <li>• DoA</li> <li>• DADO</li> <li>• AEC (FNCCI)</li> <li>• NBSM</li> <li>• CDC</li> </ul>	<ul style="list-style-type: none"> <li>• MoC</li> <li>• MoF</li> <li>• TEPC</li> <li>• FLCEC</li> </ul>	
Medium	<ul style="list-style-type: none"> <li>• Ministry of Industry</li> <li>• Rastra Bank</li> <li>• Nepal Freight Forwarder's Association</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Cottage and Small Industries</li> <li>• FenFIT</li> <li>• Farmer's cooperatives</li> </ul>	
Low			

Legend: (blue) policy support network, (orange) trade services support network, (green) business support services, (red) technical services support network, (grey) civil society support network

# KEY COMPETITIVENESS CONSTRAINTS AFFECTING THE VALUE CHAIN

Traditionally, the scope of export strategies has been defined in terms of market entry, such as market access, trade promotion and export development. This ignores several important factors in a country's competitiveness. For an export strategy to be effective it must address a wider set of constraints, including any factor that limits the ability of firms to supply export goods and services, the quality of the business environment, and the development impact of the country's trade, which is important to its sustainability. This integrated approach is illustrated by the four gears framework schematic on the right.

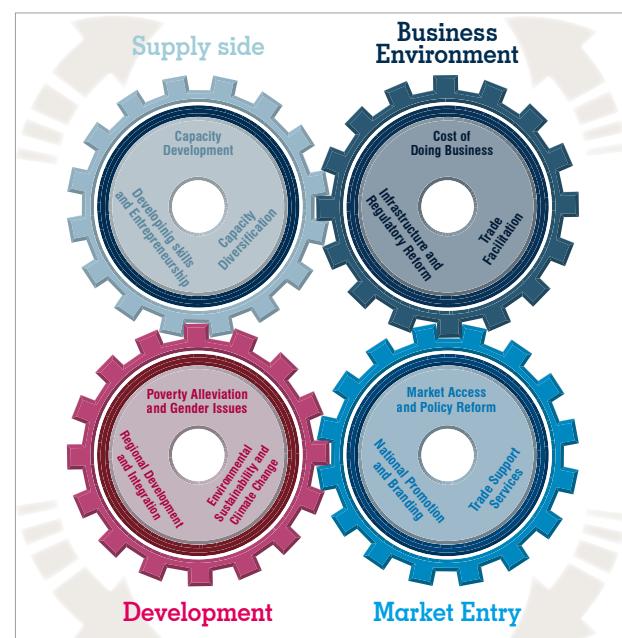
**Supply-side** issues affect production capacity and include challenges in areas such as availability of appropriate skills and competencies, diversification capacity, technology and low value addition in the sector's products.

**Business environment** constraints are those that influence transaction costs, such as regulatory environment, administrative procedures and documentation, infrastructure bottlenecks, certification costs, Internet access and cost of support services.

**Market entry** constraints are essentially external to the country (but may also be manifested internally), such as market access, market development, market diversification and export promotion.

The constraints are classified according to three criteria.

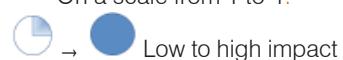
**Social and economic concerns** include poverty reduction, gender equity, youth development, environmental sustainability and regional integration.



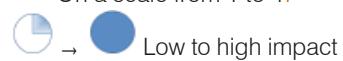
## Competitiveness severity

The issue is critical for the competitiveness of the sector.

On a scale from 1 to 4:



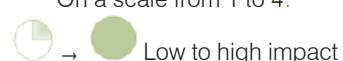
On a scale from 1 to 4:



## Urgent action needed

The issue/constraint is hampering export competitiveness and requires immediate action. This could potentially be a quick win in the short or medium term for the implementation of the Strategy.

On a scale from 1 to 4:



## Ease of resolution

Assessed based on discussions during the stakeholders meeting, the nature of stakeholders involved in the action, time needed for implementation, investment required, the need to adapt/change the legal framework and the contentiousness of the reform.

## SUPPLY-SIDE CONSTRAINTS

Supply-side issues impact production capacity and include challenges in areas such as availability of appropriate skills and competencies, diversification capacity, technology and low value addition in the sector's products.



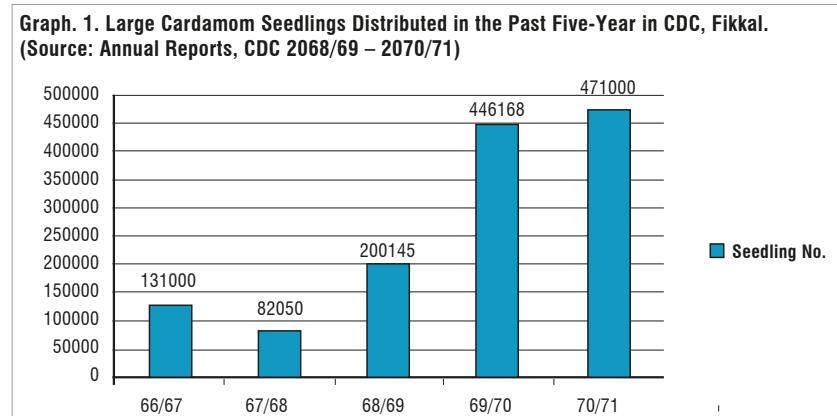
Supply side constraints: large cardamom	Competitiveness severity	Urgent action needed	Ease of resolution
<b>Capacity development issues</b>			
<b>Productivity</b>			
<ul style="list-style-type: none"> <li>Problems of pests and diseases: difficulties to diagnose diseases or to find appropriate treatment for those which are already diagnosed. Lack of quality and variety of certified saplings</li> <li>Non-availability of modern, appropriate irrigation facilities such as appropriate techniques, use of pipes, water lifting</li> <li>Need to introduce most appropriate tools for cutting, weeding and other operations</li> </ul>			
<b>Quality</b>			
<ul style="list-style-type: none"> <li>Lack of quality production as farmers tend to sell immature crops</li> <li>Lack of easy to handle instruments to measure moisture content of large cardamom (farmers, collectors and traders)</li> <li>Quality variations are common for roasted cardamom: both moisture and taste are inconsistent between farmers due to roasting in traditional <i>bhattis</i> by individual farmers</li> <li>Need for clean and dry warehousing at harvesting and processing locations</li> </ul>			
<b>Capacity diversification issues</b>			
<ul style="list-style-type: none"> <li>Insufficient continuous and thorough research has resulted in insufficient information on the geographic and climatic conditions needed for the available saplings</li> <li>Lack of utilization of plant by-products such as stalks, branches and leaves – requires research</li> </ul>			
<b>Developing skills and entrepreneurship issues</b>			
<ul style="list-style-type: none"> <li>Lack of knowledge about standard drying practices and skilled technical manpower</li> <li>Lack of quality production consciousness and proper farm management among farmers. Insufficient knowledge about GAPs and organic production systems</li> <li>Inadequate knowledge of and facilities for grading, packing and packaging at the farmer level</li> <li>Insufficient knowledge about packaging options to export overseas in smaller quantities, and export documentation and requirements at trader level</li> </ul>			

## CAPACITY DEVELOPMENT ISSUES

**Seedling requirements:** Large cardamom plantations require 12,000 plants per hectare with three plants in a bunch per planting. Farmers are replacing old plants with new ones partly due to disease. As a result, there is a strong increase in demand for seedlings. Currently total annual demand for seedlings is 10 to 15 million, whereas a few years ago annual demand was about 5 million. Government sources, including the CDC, can only provide 750,000 seedlings, which is 6% of total

annual demand. Farmers must rely on private nurseries without being sure of the quality, which will become clear only after maturing. The rest of the demand is fulfilled either from the 150 local private nurseries or from imports. These nurseries receive support of NPR 4 per plant from the Government through DADO. These nurseries sell the plants for NPR 25 each. During a field visit, the study team also came across a vanload of seedlings imported from Sikkim for a farm in Panchthar district and the team was informed that importing from Sikkim costs NPR 16 each, including transport.

Figure 18: Distribution of large cardamom seedlings from CDC, 2009/10–2013/14



**Problems of pests and diseases:** Cardamom mainly grows on damp, north-facing hillsides of the eastern region provinces of Nepal, and it also requires a shady environment. Partial clearing of forest vegetation is conducted for planting and as a management practice. Diseases seem to strike more on southern hills than on northern hills due to the lack of adequate climatic conditions and inadequate dampness.

#### Box 9: Disease and pests affecting large cardamom

Diseases	Pests
1. Clump rot – <i>Pythium</i> spp., <i>Rhizoctonia solani</i> , <i>Fusarium</i> spp., <i>Cephalosporium</i> spp.	1. Clelea Plumbiola
2. Leaf spot – <i>Coniothyrium</i>	2. Aphids
3. Plant feeding – <i>Cephalosporium</i> spp., <i>Fusarium oxysporum</i> , <i>F. solani/ verticillium</i> spp.	3. Borers
4. Leaf rot – <i>Colletotrichum</i> spp./ <i>Cephalosporium</i> spp.	4. Thrips
5. Viruses – (a) Stunt mosaic and (b) Streak mosaic	



Infested cardamom plants



Healthy field



Training at CDC

**Low production issue:** The production is characterized by low yield/ha, less than 400 kg. Production constraints include poor agronomic practices and deficient postharvest treatment, particularly drying down to 12% moisture during rainy season. Neither soil fertility improvement nor soil conservation or drainage practices are employed. The traditional production systems have not improved over time. Individual small-scale farmers are responsible for organizing harvesting and drying of their crops. The CDC organizes training workshops for farmers.

One of the constraints related to low productivity is that the plants are ageing and yields are declining in old fields. In many of the traditional farms the same varieties of plants have been used for more than 70 years. There is no adequate planning for replacing these plants with new varieties. There is no purposeful establishment of plantations.

**Postharvest drying issues:** In 95% of cases, drying is carried out by the farmers themselves. They use a traditional *bhatti*, a simple wood-fired oven, where the cardamom is slowly dried (and roasted) at 60°C for 36–48 hours. Because the raw material contains 90% moisture, some farmers also use a ‘jungle *bhatti*’ to pre-dry for 12–24 hours, thereby reducing the weight they have to carry to their homes. Sun drying is not an option because the

harvest season for large cardamom coincides with rainy season, followed by winter.

Nepal has good experiences with sun drying in the lower and dryer parts of the country, the Terai region. Areca nuts, for example, are harvested in summer and dried on tables or in drying tunnels. However, the cost to transport raw cardamom to lower and dryer parts of the country is prohibitive.

Due to roasting in traditional *bhattis* by individual farmers, quality variations are common; both moisture and taste are inconsistent between farmers. Further to that, the use of inferior combustibles may provoke the occurrence of biphenyl and PAHs, rendering the product unfit for export to international markets. Modern *bhatti*<sup>22</sup> models have been designed and could help to increase homogeneity. However, roasting is an essential step to give Nepali large cardamom its specific flavour characteristics, brownish colour and solid ‘insect protective’ shell which does not break open during cooking in a tagine. It is important to mention that the natural pinkish colour is retained with modern *bhattis*. Traders called it Pink Cardamom (see more in Box 10).

22. Singh, A.I. and Pothula A.K.(2013). Postharvest Processing of large cardamom in the Eastern Himalaya. *Mountain Research and Development*, p 453–462.

## Box 10: Traditional versus improved and modern *bhattis*

The study team was informed that only 2–3 % of farmers or farmers’ groups have improved dryers and the rest are still using their own traditional dryers.

Stakeholders, particularly farmers, mentioned that the modern improved dryers are not practical and economic for the following reasons:

- They are not flexible in capacity but any quantity can be dried in a traditional dryer
- There is the possibility of overdrying if the product is not turned frequently but in traditional dryers one turning is enough
- Heat cannot be controlled in the improved dryer
- The cost of improved dryers is higher than preparing traditional dryers
- Traders do not pay extra for quality products even if the products are from a modern dryer.

The advantages of the improved dryer as stated by the farmers are:

- The natural pinkish colour is retained. Traders called it Pink Cardamom.
- There will be additional weight even after full drying
- Wastage is minimal
- Odour free of smoke

#### Grading and standardization issues for export purposes:

Presently, specifications for Nepali cardamom are very basic. Grading is done by looking and feeling (organoleptic); no moisture meters are used, and no chemical or physical characteristics are measured. Parcels are not homogeneous and the grading applied may vary between collectors.

**Adulteration with cardamom duplicates:** Large cardamom of a similar nature is produced in Nepal, India (Sikkim) and Bhutan. Nepal is the largest as well as the highest quality producer of large cardamom in the region. The size of capsules is larger from virgin and new production districts and farmers all over the country have become quality conscious in view of recent encouraging price rises.

Apart from the use of 'duplicate' cardamom, which has been mentioned earlier, some traders ask Nepali farmers to supply wild cardamom as a separate consignment. The taste is bitter but the pods are difficult to distinguish from large cardamom. Wild cardamom is also mixed with large cardamom; both practices must be considered adulteration. According to farmers, wild cardamom is an allied genera of large cardamom that supposedly became very rare in Nepal about 10 years ago.

#### CAPACITY DIVERSIFICATION ISSUES

Serious and continuous research programmes on varieties of large cardamom and determination of the suitability of particular varieties in specific geographic and climatic conditions have not been performed adequately at a central or national level. The data and information available to farmers are based entirely on sporadic research work conducted earlier either in India or by some of the national research institutions. Additionally, there is an information gap among farmers on the exact geographical and climatic conditions required for the varieties of saplings distributed to them.

Nepal has a huge volume of by-products of large cardamom plants, such as stalks, branches, leaves, fibres, etc. However, such by-products are going to waste due to knowledge gaps about their potential uses and the lack of buyers for any such products.

**Packaging requirements for new export markets overseas:** Presently, Nepal collectors/exporters only sell whole pods. They only use superior jute handy bags, sometimes with a branded label. There are no facilities in Birtamod to pack large cardamom in different materials or smaller quantities, such as cartons.



Photo: ITC, Large cardamom packing

#### DEVELOPING SKILLS AND ENTREPRENEURSHIP ISSUES

Nepali farmers have deep experience in traditional drying techniques. However, knowledge of modern drying practices to improve the quality of roasted large cardamom is lacking for various reasons, including lack of serious research on pragmatic and economic drying technology and equipment; farmers' lack of focus on quality and instead a focus on quantity as market prices go high; and lack of knowledge on GAPs and organic production systems for large cardamom. Nepali exporters do not have full knowledge about consumer preferences and market requirements in the ultimate major markets for large cardamom such as Pakistan and Middle Eastern countries. It is mostly the Indian suppliers that have direct contact with the major buyers in these markets and they do not disseminate information on market preferences and market access requirements. Therefore, exact grading, packing and packaging requirements are unknown to suppliers in Nepal. As a result, Nepali exporters are not aware of the exact documentation and test certification requirements of these markets.

**At the trader level, there is insufficient knowledge concerning export documentation and requirements.** An export certificate is required; it is organized and obtained by the importer against test results, which are unknown to Nepali exporters. Otherwise no documents seem to be required for road transport to Delhi.



## BUSINESS ENVIRONMENT CONSTRAINTS

Business environment constraints are those that influence transaction costs, such as regulatory environment, administrative procedures and documentation, infrastructure bottlenecks, certification costs, Internet access and cost of support services.

Business environment constraints	Competitiveness severity	Urgent action needed	Ease of resolution
Infrastructure and regulatory reform			
<ul style="list-style-type: none"> <li>Poor trade-related infrastructure – bottlenecks delaying exports</li> <li>Absence of specific policy to support the development of the sector, for instance concerning irrigation.</li> <li>Obsolete national quality standards and grading instructions</li> <li>Formal taxes like value added tax and informal taxes like political donations and charges are imposed during the movement of large cardamom from different districts to Birtamod, adding to transaction costs</li> </ul>			
Trade facilitation			
<ul style="list-style-type: none"> <li>Insufficient knowledge about market regulations, administrative and documentation requirements to export overseas</li> <li>Limited experience with proper export documentation and certificates of analysis</li> <li>Burdensome import and Customs clearance procedures at the Indian border</li> <li>No history of insuring cargo to be able to export overseas</li> </ul>			
The quality of institutional support			
<ul style="list-style-type: none"> <li>CDC has limited human resources to carry out national research programmes on pest and disease management</li> <li>Lack of facilities for soil testing (testing of different parameters including pH) and inadequate research on soil and soil treatment by NARC</li> <li>Need for research into improved <i>bhatti</i>: sector stakeholders need to investigate further and agree on the best technology to be used for a modern <i>bhatti</i>.</li> <li>Lack of specific educational and training facilities to produce qualified technical personnel to support large cardamom production</li> <li>Absence of HACCP storage facilities in main trading hubs in Nepal providing packaging services for new export markets overseas</li> </ul>			
Ease and cost of doing business constraints			
<ul style="list-style-type: none"> <li>Frequent price fluctuations in the market due to limited bargaining power of small farmers</li> <li>Lack of an integrated market information system to monitor production and trade</li> <li>Lack of insurance systems for nurseries and cultivation of large cardamom</li> </ul>			

### Infrastructure and regulatory reform

Large cardamom production is scattered in many districts and involves many farmers and traders. The major actors have to arrange their own warehousing and transportation in the course of moving product from farmers to Birtamod. Lack of proper trade-related infrastructure like collection and processing warehouses and organized transport facilities specifically for large cardamom is one

of the bottlenecks that result in delays and high costs of business transactions.

There are many product-specific policies and directives in cases of commercial crops like tea and coffee. However, large cardamom lacks specific policy, regulatory measures and programmes to support the major actors like farmers, traders and support institutions.

### Lack of national quality standards

Prices for graded cardamom, including size consideration, are higher than for mixed cardamom. Cardamom without tails fetches a higher market price than with tails. The Nepal Bureau of Standards and Metrology has fixed parameters for two types of grades of large cardamom under the Nepal Standards. However, this grading system is not followed by the major actors in view of the need to follow a grading system based on the major market norms. The Nepal Standard has not been revised to harmonize with international or market-oriented standards. There is also a lack of communication among farmers and traders on the grading and standards system required by the prevailing norms and market requirements.

### Formal and informal taxes

Formal and informal taxes and charges are imposed during the movement of large cardamom from different districts to Birtamod, adding to transaction costs. This includes imposition of value added tax (official) by the District Development Committee. Unofficial taxes are imposed at many places en route up to Birtamod by social and political workers. This has increased the cost of doing business and reduced normal business profits.

### Trade facilitation

The majority of leading exporters of large cardamom have developed linkages with Indian buyers. They are yet to develop capacity to assume the risks of exporting cardamom directly to Pakistan or other markets in the Middle East. Their risk-taking capacity is low, mainly due to knowledge gaps on Nepal's regulations, certification requirements, administrative procedures and documentation requirements for export markets. Because of the lack of knowledge about trade facilities and the documentation required, Nepali traders are limited to exporting to their traditional Indian importers.

### Quality of institutional support

There is a knowledge gap among farmers and traders on the urgency to improve the quality of cardamom, such as lack of information on optimum moisture requirements, moisture measuring devices, monitoring curing temperatures and devices to measure kiln temperatures. Additionally, not enough appropriate improved dryers are available to produce a better quality product. The institutions responsible for supporting improvements in quality have limited resources to provide technical and financial support in a sustainable manner. In the past most supportive programmes were sporadic and one-off.

CDC has enough land and office space to conduct its functions of seedling development and distribution and training programmes. However, the Centre is weak in terms of technical human resources and other facilities to carry out large-scale national research programmes on pest and disease management and to conduct research and develop new cultivars or varieties of cardamom.

There is a lack of modern processing and warehousing facilities in the market hub for large cardamom. In order to comply with foreign market requirements such as HACCP, storage should be in a clean and dry warehouse. Often raw materials and finished packed goods are stored in the same area. Hygiene is poor in many places but good and clean storage can also be found.

### Ease and cost of doing business constraints

Currently cardamom farmers are forced to sell their products at a price determined by the traders. Farmers have limited bargaining capacity. The traders determine prices based on market demand and market fluctuations. There is no fixed pricing system. The lead traders play a significant role in price determination, in consultation with foreign buyers, depending on the market situation.

There is no integrated market information system that includes price, quality, availability, farmers, local traders, wholesalers, foreign market situations in different locations and countries, and production and supply situations in the domestic market.

Farmers and traders of large cardamom are not extended crop or trade insurance services on the farming or trading of large cardamom. Farmers have not approached insurance companies and such companies have also not promoted their services to the large cardamom sector. Internal trade transactions are normally in small quantities that involve movements from farms to village centre and then from village market centre to Birtamod. In view of the small quantities, local traders are not inclined to insure their crop. Additionally, the export trading communities have not felt insurance to be important because their responsibility for export transactions is normally only up to the Free on Board (FOB) Nepal border.

Furthermore, they have limited access to bank credit and financial supports for the development of large cardamom production and trading. Commercial banks and financial institutions have not come forward to encourage farmers and traders to boost their production and trading operations with credit facilities available in the market.



## MARKET ENTRY CONSTRAINTS

Market entry constraints include issues such as market access, market development, market diversification and export promotion.

Market entry constraints: large cardamom	Competitiveness severity	Urgent action needed	Ease of resolution
Market access			
<ul style="list-style-type: none"> <li>Heavy reliance on a single market and a few importers in India</li> <li>Increasing unfair competition: 'Duplicate' black cardamom is exported to Pakistan by Indian traders mixed with Nepali large cardamom in order to reduce the price. Final consumers are not aware of the distinctive product characteristics</li> <li>Limited number of wholesalers and exporters in Nepal</li> <li>Lack of information on standards requirements, grading, packaging, branding and SPS compliance – including MRLs – in overseas markets</li> <li>Lack of appropriate provisions in bilateral agreements for market access to Pakistan and Bangladesh</li> </ul>			
Trade services support constraints (in and outside the market)			
<ul style="list-style-type: none"> <li>Problems of transportation from farm to village and village to district market centres</li> <li>Laboratory MRL testing is quite costly for traders</li> <li>Absence of transportation insurance services to export</li> <li>Lack of export market research support: insufficient understanding of market characteristics and trends in the final destination of Pakistan; and insufficient market research to identify new market opportunities and distribution channels</li> </ul>			
Trade promotion			
<ul style="list-style-type: none"> <li>Lack of governmental support at the sector level for trade promotion activities</li> <li>Limited capacities of traders to promote Pink cardamom to traditional buyers</li> <li>Absence of funding to promote Big Everest Cardamom collective trademark in export destinations</li> </ul>			

## MARKET ACCESS

### Monopoly of Indian traders

Almost all large cardamom is exported via Delhi to Karachi in Pakistan, where it is much appreciated by the Muslim community for their biryani dishes. The trade in Nepali large cardamom is monopolized by a handful of Delhi traders who keep Nepali exporters ignorant about quality, pricing, business relationships and trends, and who react strongly when Nepali exporters take any action towards direct links with either India or Pakistan. The benefits of high prices in Pakistan go mostly to Indian traders.

This long-standing business model is now being threatened by imports of ('duplicate') black cardamom from new origins, in which the same Indian traders are involved. This is a paradoxical situation which will result in stagnation of Nepali cardamom exports. It is therefore extremely

important that Nepali suppliers escape from this monopoly situation.

### Increasing unfair competition and market price decrease

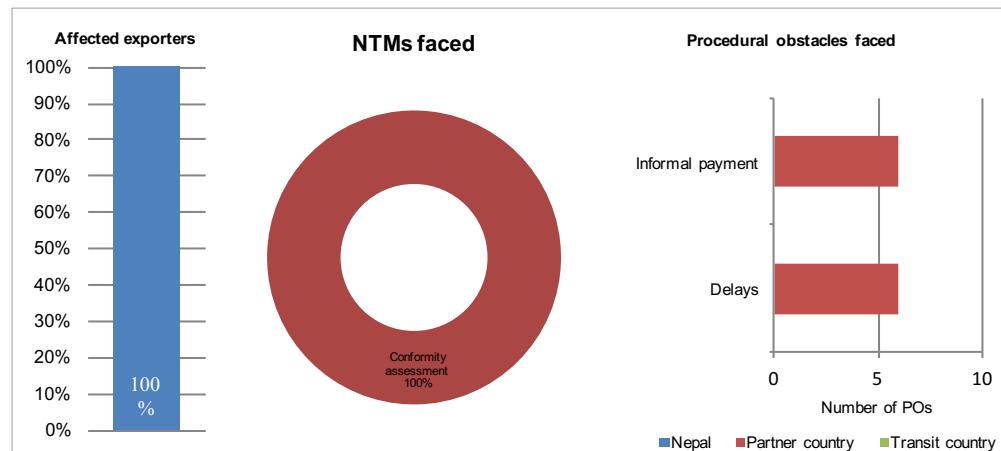
World demand for black cardamom is increasing, probably because it is becoming available at a lower price from new origins, even though it is of a different flavour profile than Nepali large cardamom. Supply is also growing, as new origin countries like China, Viet Nam, Guatemala and Ethiopia offer their 'duplicate' quality through Indian traders in Delhi to Pakistan. They sell at a very competitive price (US\$5/kg) in a market used to high Nepali prices (US\$20+/kg). Nepali traders are used to fetching a high price in comparison to 'duplicate' black cardamom. At the same time, they are also not experienced in the health regulations of international export markets, nor to the red tape and financing requirements. It is this 'last mile' to export which must be conquered.

### Difficulties while exporting from the West Bengal border of India

The major trade obstacles faced by large cardamom exporters are concentrated on problems of conformity assessment and procedural obstacles (see figure 19). The state of West Bengal requires each consignment to be

tested for harmful contaminants. The samples are sent to Kolkata for testing, which is very far from the Customs point. It takes more than 14 days to get the report and clear the goods from Customs. Exporters report that it is difficult to pass the shipment without making unofficial payments to Indian officials, even when test results show no problems.

Figure 19: Non-tariff measures and procedural obstacles faced by large cardamom exporters



Source: ITC NTM Business Survey in Nepal, 2016.

## TRADE SERVICES SUPPORT CONSTRAINTS

### Lack of transportation insurance services

Transportation to Delhi is done by truck and takes four to five days. No party takes any transport insurance. One limitation on using insurance services is the relatively high value of a single shipment compared to its value on paper, thanks to the rampant practice of under-invoicing. In order to avoid taxes, Delhi traders often ask for a lower price on the invoice. If a cargo gets lost, the reimbursement for the Nepali supplier is then against this lower invoice value.

### Laboratory testing costs

Recently several modern private labs have been set up and equipped to perform reliable MRL tests (Zest Laboratories and the government lab – Department of Food Technology and Quality Control (DFTQC)). However, these laboratories have not received accreditation from internationally recognized institutions. Therefore, buyers in importing markets do not recognize the validity of Nepali laboratories and request additional testing to be performed in their home countries. The cost of such pesticide residue analysis in the EU and the United States is approximately US\$200 per sample,

which is a significant cost for Nepali small and medium-sized enterprises.

### Insufficient market research support

Traders have a limited understanding of the market characteristics and trends in their main final destination market, Pakistan. Few initiatives have been able to gather market information in the past supported by development agencies. However, trade support institutions, such as TEPC, or sector association, FLCEN, do not have the human and financial capacities to carry out regular market research in destination markets, even less to identify new market opportunities and distribution channels.

## TRADE PROMOTION

### Lack of trade promotion capacities to support market diversification and pink cardamom

Large cardamom is valued for its flavour and aroma in only two importing markets: India and Pakistan. Large cardamom entrepreneurs believe that government initiatives to communicate the potential of large cardamom to major world buyers are insufficient to support growth of the large cardamom trade and export market diversification.



Photo: ITC, Large cardamom seedling

There is a lack of market research and training programmes on marketing and export promotion, including insufficient knowledge about international business practices such as export documentation and trade finance, particularly among small traders in the major trading hubs in Nepal.

Pink cardamom processed in the modern *bhatti* is supposedly superior in quality to the black cardamom roasted in traditional *bhattis* (see box 10). Based on discussions with exporters of large cardamom, traditional distribution channels do not support the development of pink cardamom. Indian buyers in particular are not interested in pink cardamom. The reason is that final consumers are only accustomed to the brown colour produced in traditional *bhattis* and they are unaware of the higher quality of pink cardamom. The current sociocultural links among traders and lack of market promotion have prevented Nepal from establishing direct links with major buyers in new markets such as Dubai, Karachi or Rawalpindi and developing exports of pink cardamom.

### Big Everest Cardamom collective trademark is not promoted

TEPC is a specialized agency under MoC which is assigned with overall promotion and support in product development for Nepali export goods. In the case of large cardamom, it has a good rapport with stakeholders through various associations and chambers. It mobilizes the participation of private sector representatives in international trade fairs and exhibitions and coordinates with various large cardamom-related institutions such as CDC and AEC/FNCCI on other aspects of trade promotion. However, TEPC has limited financial capacity to support exporters to attend international trade fairs and to develop an export promotion campaign.

Recently TEPC and FLCEN have established a collective trademark and logo for large cardamom: Everest Big Cardamom. The trademark is not yet in use as it is in the process of registration in major markets like Pakistan, India and the UAE. Registration is also taking time due to inadequate funds being allocated for this purpose. There is currently no marketing strategy to promote the newly created trademark 'Big Everest Cardamom' in major importing markets. TEPC has strong linkages with development agencies specialized in trade technical assistance that could help to promote Nepali large cardamom in new importing markets.

## SOCIAL AND ENVIRONMENTAL CONCERNs

Social concerns include poverty reduction, gender equity, youth development, environmental sustainability and regional integration.



Social and environmental concerns: large cardamom	Competitiveness severity	Urgent action needed	Ease of resolution
Environmental concerns			
<ul style="list-style-type: none"> <li><b>Potential forest degradation</b> <ul style="list-style-type: none"> <li>Due to clean cultivation and clearing of undergrowth in fresh cardamom plantations, there could be a drastic reduction in rainforest land and canopy cover</li> <li>Firewood used for bhatts</li> <li>Forest loss has contributed to stagnant agricultural output and a decrease in non-timber forest products</li> </ul> </li> <li><b>Climate change:</b> Droughts are expected to occur more frequently</li> <li><b>Pesticides increase:</b> increased cardamom production is associated with a severalfold increase in the consumption of fertilizer and pesticides. Pesticide use may result in unfavourable effects in the form of environmental degradation and human health. Pesticides may contribute to environmental pollution, biodiversity losses and deterioration of natural habitats</li> </ul>			
Social concerns – youth are not working in the field and migration of labour			
<ul style="list-style-type: none"> <li>Migration of labour to work abroad.</li> <li>Women in the large cardamom sector face low wages and repetitive, labour-intensive tasks, especially at the processing stage.</li> <li><b>Youth are uninterested in pursuing agriculture:</b> Farming is not valued as a prestigious pursuit. Youths do not want to leave cities and are more interested in processing opportunities. There is little awareness of innovative solutions such as city farming</li> </ul>			

### Forest degradation

The recent transition of Nepal to extensive cardamom agriculture intensification can have major detrimental impacts on the ecosystem. Increased cardamom production is associated with a severalfold increase in the consumption of fertilizers and pesticides as well as a drastic reduction in rainforest land and canopy cover. These potential changes can have dramatic impacts on the functioning of the cardamom ecosystem because of complete loss of biodiversity and land and forest degradation. It is crucial to develop a strategy and enhance efficient use and recycling of nutrients between forest and soil.

precipitation and increases in temperature in the recent past that have gradually affected the crop. According to a study by the Food and Agriculture Organization of the United Nations, temperatures in Nepal show a great warming trend, with annual mean temperatures increasing by  $0.06^{\circ}\text{C}$  and these increases are more pronounced at higher altitudes and in winter.<sup>23</sup>

A number of studies have found that climate change will have a stronger impact on agriculture in developing countries than in developed countries. Such studies have established that increasing temperatures will directly impact the quality and volume of crops by affecting their

### Climate change and rainfall

In general, a temperature of  $21^{\circ}\text{C}$  to  $29^{\circ}\text{C}$  is ideal and 150–250 cm of rainfall is required for tea cultivation. Tea farmers and garden managers in Nepal have already experienced unusual climatic conditions with erratic

23. FAO of the United Nations (2010). Implications of Climate Change for Agriculture and Food Security and Adaptation Priorities in Nepal.

physiology.<sup>24</sup> Additionally, crop outputs will be steadily affected through changes in the water regime and increases in the intensity of pests and diseases. It is high time to consider adapting future policy measures in Nepal to manage the potential negative effects of climate change. Future agricultural research should also focus on the development of cardamom varieties that are tolerant of higher temperatures and erratic rainfall.

## Migration

Temporary migration workers have had positive impacts on the overall economy and standards of living since new markets for jobs opened up for Nepali workers, increasing the volume of remittances remarkably. The incidence of poverty has declined from 42% to 31%.<sup>25</sup> Migrant workers have developed skills; earned enough to enable household members to access better food, clothing, medicines and education; increased financial and social capital; and empowered spouses with their own earnings as well as remittances from abroad.

The flip side of these positive impacts is that there is declining interest in working in the agricultural sector and wages for agricultural workers have become more expensive as the workforce has shrunk, adding to the cost of cultivation. Land use for agriculture has been reduced, as mostly only female workers are available. According to the FAO study, women still continue to plough agricultural land on their own as male agricultural workers are not available.

## Women in the cardamom sector

The overall literacy rate is 51% for women and 72% for men, and this gender difference in literacy is more pronounced in rural areas<sup>26</sup>. This lack of knowledge lowers self-confidence and affects other activities in the value chain in that women are unable to bargain for better quality inputs or practice professional farming, for example. Women's businesses tend to be small and thus subject to high volatility and unable to leverage credit to grow the

business.<sup>27</sup> Even though both men and women equally work in this sector, women tend to do more value addition work such as cleaning, cutting and grading of cardamom, while men tend to be the ones to bring the finished product to the market.



Photo: ITC, Women in the cardamom sector.

Customary norms on women's role in households and public life, which often show bias in favour of men, limit their ability to make decisions, seize opportunities and get access to productive resources (Chaudhary 2007).<sup>28</sup> In fact, due to the legal and sociocultural norms in Nepal, women experience poverty and inequality to a greater degree.<sup>29</sup> They are often excluded from formal processes and structures and lack access to market information technologies and productive inputs.<sup>30</sup> In addition to this, not all women's tasks are economically productive; rural women play roles such as caretakers of family and unpaid family workers.<sup>31</sup> As their tasks are usually more tedious and time-consuming, this leads to time poverty and lost opportunities for women in attending trainings and invest in income-generating activities.<sup>32</sup>

24. SANDEE (2014). Policy Brief, The Impact of Climate Change on Agriculture – A Case Study from Nepal. Number 79-14, p.2 explains 'Projections of likely increases in seasonal surface air temperatures and seasonal precipitation levels suggest that there will be a significant acceleration in warming in South Asia and that this will be greater than the rise that was observed during the 20th century. The warming, moreover, is projected to be strongest in the Himalayan Highlands (including the Tibetan Plateau) and in the arid regions of Asia. Studies further project an increase in the inter-annual variability of daily precipitation in the Asian summer monsoon'.

25. FAO of the United Nations (2010). A Rapid Situation Assessment on Agriculture and Migration in Nepal. p.19.

26. Central Bureau of Statistics and Nepal Planning Commission Secretariat (2012). National Population and Housing Census 2011: National Report. Kathmandu; Pereznieta, P. (2016). Rapid Review of Programmes for Women and Girl's Economic Empowerment. EPS PEAKS.p.1.

27. Honsberger, A. (2015). Professionals In their Field: Women Vegetable Farmers in Nepal FAO (2010). p. 31.

28. International Fund for Agricultural Development. The Changing Role of Women in the Economic Transformation of Family Farming in Asia and Pacific, p. 3; FAO of the UN (2010). Integration of Gender in Agriculture: An Analysis of Situation. Nepal, p.8.

29. Pereznieta, P. (2016). Rapid Review of Programmes for Women and Girl's Economic Empowerment. EPS-PEAKS, p.1.

30. The World Bank (2013). Promoting Agribusiness Innovation in Nepal: Feasibility Assessment for an Agribusiness Innovation Centre, p. 77.

31. FAO of the United Nations (2010). Integration of Gender in Agriculture: An Analysis of Situation. Nepal, p.3.

32. International Fund for Agricultural Development. The Changing Role of Women in the Economic Transformation of Family Farming in Asia and Pacific, p. 3.



**Photo:** ITC. Woman labor conditions in large cardamom processing centre

### Youth interest in the cardamom sector

In the three fiscal years from 2012/13 to 2014/15, around 40,000 youth migrated to countries other than India.<sup>33</sup> Migration of youths to foreign countries is the major challenge of Nepali society, especially in the agricultural sector. According to the National Youth Policy (2010), youths<sup>34</sup> accounts for 38.8% of the total population and are valuable assets and a vital resource for the nation's development as well as being change agents. The low participation of young people in farming and the agricultural economy must be seen as a matter of grave concern to all; indeed, it directly threatens the future of agriculture and rural economic transformation.<sup>35</sup> Some of the reasons for youth migration from production districts for foreign jobs are poor government investment and a low share of donor agencies in the agriculture sector. Additionally, the new generation does not want to become farmers even if they come from farming families.

### Labour, health and welfare issues

There are some labour issues: the security and health of labourers are not properly taken into consideration at farms in producing districts or in the processing and finishing stages, particularly in Birtamod. For example, farm labourers need boots to protect them from insects and snakes, and at the finishing stage workers need proper masks and gloves to protect them from dust, dirt and other contaminants.

### COMPETITIVE CONSTRAINTS ANALYSIS

The analysis of the competitive constraints makes it clear that the sector's sustainable development will require an integrated set of interventions that holistically address challenges across the entire value chain. Roadblocks are not limited simply to enterprise capacities or government policy, and many challenges are the result of a combination of factors that require wide-ranging remediation. It is for this reason that a comprehensive sector export strategy becomes all the more necessary; individual stakeholders, and indeed small groups of stakeholders, will not be able to deal with the constraints on their own. It is only through strategic cooperation that the most effective results will be achieved.

33. Government of Nepal, Ministry of Labour and Employment. Labour Migration for Employment, A Status Report for Nepal: 2014/2015, p. 22.

34. The National Youth Policy defines youth as people aged 16-40.

35. Panday, D. (2012 September 13). Reshaping Youth in Nepali Agriculture. *Young Professionals for Agricultural Development, YPAR*, Retrieved from <http://www.ypard.net/2012-september-3/reshaping-youth-Nepali-agriculture-0>.

## Key success factors in the spice global market:

- 1. Excellent postharvest treatment ('the first mile'):** Transport distances of cardamom (80% moisture) must be minimized; drying down to <12% should be done close to the harvest area and on raised beds; processing like roasting must be standardized. Cleaning must include minimization of extraneous matter (<1%) and removal of all foreign matter.
- 2. Grading in line with international standards:** Grading gives both buyers and sellers comfort that they pay and receive the right price, respectively. The most common grades are Hand Picked Selected, First Grade and Fair Average Quality, followed by 'grinding quality' and 'extraction quality'. Usually a collector finds all these when buying at the farm gate so he must also have the complete spectrum of grades at hand in order to sell them.  
Organic is in fact a grade on itself and can help to obtain a 5–10% bonus on the current market price.
- 3. Making export quality the standard:** Traders and processors have become aware that at least part of their produce will enter export markets, either in whole form or as an ingredient in exported food products. In order to remain eligible to their buyers, they must comply with international standards for quality, storage and packaging. Those who can meet these minimum quality requirements are most likely to find buyers in the global market. Thereby they can export their best quality at premium prices to export markets, at the same time having an outlet for even their lowest quality on local markets. Products must adhere to EU regulation no. 1881/2006 for aflatoxins/ochratoxins and EU regulation no. 396/2005 for MRLs on pesticides.
- 4. Packaging:** Cardamom is usually packed in 25 kg single lined polypropylene bags with a gross weight of 25.2 kg. Better, but more expensive, are jute bags. It is important that the product can 'breathe', which reduces the risk of moulds forming. To compensate for weight loss during transport (due to extra moisture evaporation), bags must have a surplus of 1% in weight.
- 5. Export documents:** There should be accuracy in completing the right set of documents:
  - Three original Bills of Lading plus two copies, one Fumigation Certificate, one Health Certificate, one Phytosanitary Certificate, three invoices, two packing lists, one Generalized System of Preferences Form A certificate plus one copy and one Certificate of Quality or one specification sheet.
- 6. Quality control:** Prepare a pre-shipment sample in accordance with ISO 948 and contract an accredited laboratory to do the quality analysis. Based on the Certificate of Analysis and the Bill of Lading the buyer can pay once the goods are aboard ship (Cash Against Documents).
- 7. Logistics – storage and transport:** Dried cardamom (< 12% moisture) should be always stored in clean and dry places and transported in clean trucks, well protected against rainfall, insects and theft.
- 8. Financing:** World trade is usually either FOB (Kolkata for Nepal) or Cost and Freight (CFR)/Cost Insurance Freight (CIF) to the destination port. In order to become a successful exporter, funds must be available to finance all steps from purchasing at the farm gate through to loading containers on a ship. If this 'last mile' is not taken care of, international trade will not develop.
- 9. Value adding:** This ranges from simply washing/cleaning the harvested cardamom to sterilizing, packing in retail bottles and even grinding and making blends. This requires processors to comply with HACCP standards and obey ISO rules.
- 10. Establish new spice origins:** 'Captive use' of spices like cardamom in both India and China grows, due to their increased consumption of meat, which is the result of their improved economic situation. India, for example, has become an importer of ginger and turmeric, whereas it used to be a major source of these spices. This adds to the growing gap between world demand and available export volumes and it explains the positive trend in prices, which trickle down to the farm level. New spice origins are needed: this is an opportunity for Nepali cardamom.

Completing the set of documents usually means a visit to a couple of institutions as well as paying levies. The information on all documents must be complete and identical. Any deviation will lead to confusion at the port of entry and unnecessary delays. Delays are costly because freight companies will charge 'demurrage' costs for containers when these stand at the quay for more than 14 days.

### Good practices in the export of spices



Moisture meter < 12%



Polypropylene 25 kg bag



Gross weight 25.2 kg



Pre-shipment sampling



Covered truck



Clean container



Photo: ITC

# THE WAY FORWARD

Taking note of all previous analyses and key success factors, the large cardamom sector possesses significant potential for imparting socioeconomic contributions to Nepal through export-led and domestic market growth. In order to realize this potential, competitive constraints and structural deficiencies along the four export development gears (supply side, business environment, market entry and development side) will be addressed and identified market opportunities will be leveraged. The following is a delineation of the proposed vision and strategic approach in this direction.

## THE VISION

“ Developing Nepali Black and Pink Everest Cardamom production and quality to increase export revenues and support sustainable economic development ”

## THE STRATEGIC OBJECTIVES

The Plan of Action (PoA) will respond to this vision by addressing the sector's constraints in a comprehensive manner. To this end, particular efforts will be made to further skills development and acquisition, enhance the policy and business environment, improve market structures and leverage investment as a driver of structural change within the sector.

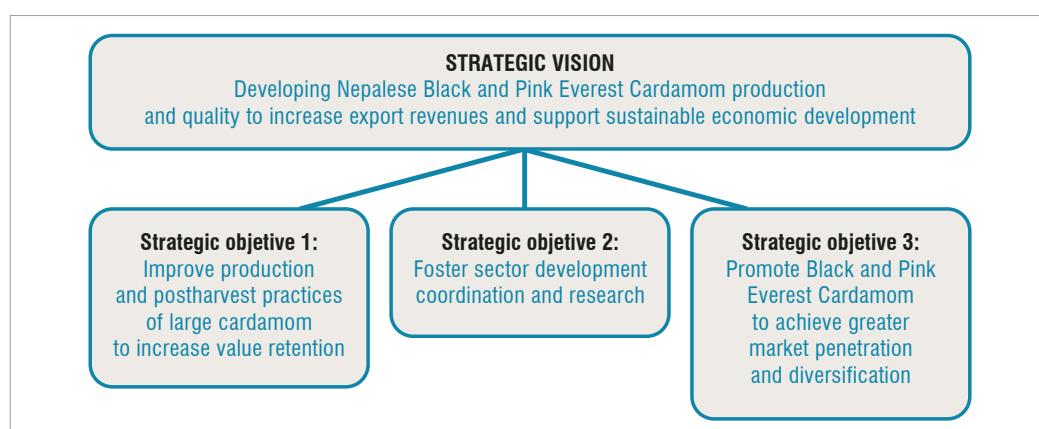




Photo: ITC, FLCEN president during workshop with large cardamom farmers

## LEVERAGING MARKET AND PRODUCT DEVELOPMENT OPPORTUNITIES IN THE DOMESTIC AND EXPORT MARKETS

### LEVERAGING EXPORT MARKET OPPORTUNITIES

The demand for large cardamom is increasing in Pakistan, as analysed previously (see emerging trends) but the growth is mostly driven by imports from new origins at a lower unit price. Indeed, supply is growing in that new competitors such as China, Viet Nam, Guatemala and Ethiopia offer 'duplicate' black cardamom even though it has a different flavour profile from Nepali large cardamom. These competitors sell at very competitive prices (US\$5/kg) in a market used to the high Nepali prices (US\$20+/kg). Based on recent reports from Nepali traders, it appears that Indian traders have also started to import 'duplicate' cardamom and mix it with Nepali large cardamom in order to remain competitive. Another consequence is that imports from India have reduced significantly in value and volume (see figure 6) over the last two years as Indian buyers are bargaining for lower prices and Nepali traders have not realized that new competitors are disturbing the market in Pakistan by introducing this 'duplicate' black cardamom.

Declining export volumes of Nepali large cardamom to current Delhi traders present the need to look for new markets where similar food habits prevail and where the characteristic roasted taste profile of Nepali large cardamom will be considered an asset.

Nepali large cardamom, with its specific flavour profile and high price, might find a market in other Muslim/biryani eating communities, provided that its specific properties (in flavour and shell, for example) are well communicated and appreciated there. However, Nepali traders are not experienced in complying with the tedious regulations of international export markets, nor with financing requirements. It is this 'last mile' to export which must be developed. The actions required are described below.

### DEVELOP MARKETING EFFORTS IN THE TRADITIONAL MARKETS OF INDIA AND PAKISTAN TO PROMOTE NEPALI LARGE CARDAMOM'S SUPERIOR QUALITY VIS-À-VIS DUPLICATE BLACK CARDAMOM

Given the recent appearance of 'duplicate' black cardamom in India and Pakistan, there is a need to promote Nepali large cardamom in these two major importing markets, targeting Muslim buyers, and to communicate the superior quality of Nepali large cardamom vis-à-vis 'duplicate' black cardamom imports. Such a promotion campaign towards final consumers can only be successful if selected Indian traders and Pakistani importers are also involved.

- The following actions are required to promote Nepali large cardamom in Pakistan:
  - A brand profile must be developed based on market research in Pakistan to clearly understand purchasing habits, market price and consumer characteristics. The aim of this market research in Pakistan would be to determine if consumers are being cheated when they purchase large cardamom from Nepal which it is actually mixed with 'duplicate' black cardamom.

### DEVELOP NEW TRADE ROUTES AND DIRECT DISTRIBUTION CHANNELS TO PAKISTAN

In order to move away from the current monopoly of Indian traders, the sector needs to collaborate to set up new trade routes to access Pakistan directly. Past initiatives have not been successful but this does not mean that efforts should be halted.

- Other trade routes must be investigated, such as:
  - Exports from Birtamod to Bangladesh then through sea freight to Pakistan.
  - Air freight from Kathmandu through Dubai and then to Pakistan. There are currently several international airlines connecting Nepal to global trade hubs in the Gulf countries such as Dubai, Abu Dhabi or Doha (for instance: Flydubai, Jet Airways, Emirates Airways, Qatar Airways, Air Arabia).

### LOOK FOR NEW EXPORT MARKET OPPORTUNITIES FOR NEPALI LARGE CARDAMOM LINKED TO THE PAKISTANI DIASPORA AND MUSLIM COUNTRIES

Overdependence on the Indian market has limited the development capacities of the sector. Given the uniqueness of Nepali large cardamom, the sector must take steps to approach new destination markets, starting with the Pakistani diaspora in other markets and Muslim communities in the Middle East and Indonesia.

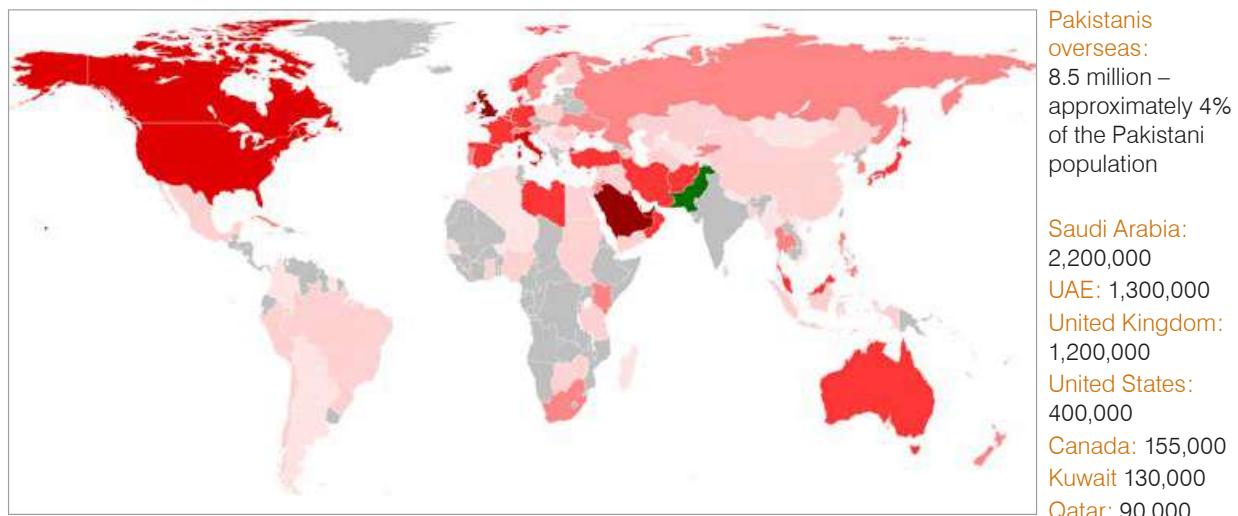
For decades, the distinct 'smoky' flavour of Nepali large cardamom has been a prominent ingredient in the preparation of biryani dishes in the Muslim population of

Pakistan. According to the Pakistani Government there are around 8 million Pakistani people living abroad, with the vast majority of them residing in the Middle East (Saudi Arabia, UAE). Pakistanis who emigrated to or were born in these countries tend to stay close to Pakistani culture. The Pakistani diaspora is a very interesting niche market in the Middle East and potentially in other countries such as the United States, United Kingdom and Canada.

To be able to export to these new markets, packaging must comply with import regulations as well as sea freight requirements (palletized, shrink wrapped). Additionally, exporters have to ensure that the whole pods meet international quality standards for moisture, biochemistry and MRLs, and become experienced in drafting all necessary export documentation. A key aspect in developing new business partnerships in new target markets is also based on developing ways to finance deliveries FOB Kolkata or CIF port-of-destination.

- The Pakistani diaspora seems to be an attractive niche market. In order to assess its potential, the strategy would be to:
  - Carry out market research in the Middle East to understand if the Pakistani diaspora keeps using large cardamom in its cooking and the existing distribution channels for spices in these countries.

Figure 20: Pakistani diaspora worldwide



**Source:** Year Book, 2004–2005 (PDF), Islamabad: Ministry of Labour, Manpower, and Overseas Pakistanis.

## UNDERSTAND THE BUSINESS PRACTICES AND REQUIREMENTS OF INTERNATIONAL SPICE TRADERS: TRADERS, PACKAGERS, GRINDERS AND EXTRACTORS

In order to develop new export markets, Nepali traders need to understand how international spice traders operate and design proper strategies to contact them.

**Traders of black cardamom:** The first distribution channel to be targeted. As black cardamom is mainly used as whole pods, it does not need extra processing. In that respect it resembles cloves, which also mainly find their application in whole form. Traders usually work with back-to-back contracts, which assume that the final buyer/packager has full knowledge of the end consumer and the trader is merely a go-between without detailed market knowledge.

Potential companies to be contacted:

- Royal Golden General Trading from Dubai, which targets Middle Eastern (Muslim) clients
- Yso and Sons General Trading from Ethiopia, targeting Middle Eastern and North African (Muslim) clients
- Gorom Kencana from Indonesia, targeting Indonesian and Far East clients
- Interviews with major trading companies that cater to Western markets are not appropriate, as they do not carry black cardamom in their portfolio: Olam – Viet Nam, Nedspice – Viet Nam, Jayanti – India, Synthite – India, AVT-McCormick – India, Catz – Netherlands.

**Buyers/packagers:** Established in the receiving country/market, this person is the one with the best knowledge of the application. S/he must become convinced of the specific quality characteristics of Nepal large cardamom and prepared to advise clients to use it in recipes. Green cardamom seeds are widely used in India and elsewhere as mouth refreshers. They are sold in bulk boxes as well as in retail packs.

**Grinders:** These do not seem to play a role, because Nepali cardamom pods are consumed in whole form; that is, they are used during the cooking process and taken out just before serving the dish. Green cardamom is ground, both for applications in sweets/bakery products and for its application in spice mixes (curries & masalas). Grinding is done both for the whole pod and of the seeds only (which renders a more expensive product).

**Extractors:** An interview with an essential oil supplier from Nepal (Vossen & Co), revealed that Nepali large cardamom has a low volatile oil content, for which reason it is not currently suitable for extraction.

- According to the current business practices of cardamom traders identified during the research carried out for the development of this sector Strategy, the two key requirements requested are:
  - Develop specific carton packaging that can be easily shipped, similar to what is being used for green cardamom, cloves and chilli pepper: apply a food grade 10kg box as shown in the pictures below.
  - Potential buyers will wish to know the specifications of Nepali black cardamom; these can best be communicated by adhering to the ESA quality standards as shown in table 10.



**Pictures:** International Trade Centre – Black cardamom boxes in importer's office in Dubai

Table 10: *ESA quality standards*

**Large black cardamom**  
**Date: August 2016**  
**Created by: ITC Revision**  
**Raw material: *Amomum subulatum***  
**Origin: Nepal (named 'Alaichi')**

Cropping and processing	Harvesting: December–April Drying in ( <i>bhatti</i> ) oven immediately after harvesting Time between harvesting and drying: 5–7 days		
Packaging information	<ul style="list-style-type: none"> <li>Single layer 25 or 50 kg polypropylene bags or jute bags</li> <li>20 ft. container with 8 tons, not palletized</li> <li>40 ft. container with 15 tons, not palletized</li> </ul>		
Chemical characteristics	Quality minima (ESA)*	Nepal	Remarks
Moisture	12.0% max		
Total ash	9.0% max		
Acid insoluble ash	2.5% max		
Volatile oil	4.0% min	2.0% min	Nepali black cardamom is unsuitable for oil extraction
Physical characteristics			
Foreign matter	Absent		
Extraneous matter	1.0% max	Tails < 5%	
Organoleptic appearance		Whole pods	
Colour		Brown/black	
Flavour profile		Roasted	Due to artificial drying in <i>bhatti</i> ovens, using wood as a combustible, Nepal cardamom has a roasted taste and a strong outer skin (pericarp)
Other		1 ppb = 1 µ/kg; 1 ppm = 1 mg/kg	
Aflatoxin total	< 10 ppb	(B1+B2+G1+G2)	
Aflatoxin B1	< 5 ppb		
Ochratoxin A total	< 30 ppb		
Pesticides	Absent		
Biphenyl	<0.05 mg/kg-ppm	To be investigated for Nepal	
PAHs	Benzo(a)pyrene < 10 ppm, Sum of Benzo(a)pyrene / Benzotriazine / Benzofluoranthene <50 ppm	To be investigated for Nepal	

The product adheres to EU legislation for pesticides and heavy metals

The product is non-irradiated, non-ethylene oxide treated and not a genetically modified organism

The product is free of allergenic materials

\* ESA = European Spice Association

## DIVERSIFYING PRODUCT RANGE AND DEVELOPING DERIVATIVE PRODUCTS: LOOKING FOR NEW OPPORTUNITIES APART FROM LARGE CARDAMOM ROASTED IN TRADITIONAL BHATTIS

Nepali exporters have traditionally only exported whole large cardamom pods. New market opportunities might emerge based on the different uses of green cardamom and by investigating its possible applications to Nepali large cardamom.

### Developing exports of pink large cardamom

Large cardamom is valued for its flavour and aroma in only a few importing markets, India and Pakistan. Pink cardamom processed in the modern *bhatti* is supposedly also superior in quality to the black cardamom roasted in traditional *bhattis*. This product should therefore command a higher price. However, Indian buyers are not interested in pink cardamom. The reason is final consumers are only accustomed to the brown colour given by traditional *bhattis* and they are also not aware of the higher quality of the pink cardamom. Based on discussions with exporters of large cardamom, traditional distribution channels do not support the development of pink cardamom. Thus a distinct niche market for this quality product has to be created and consumer appreciation has to be developed.

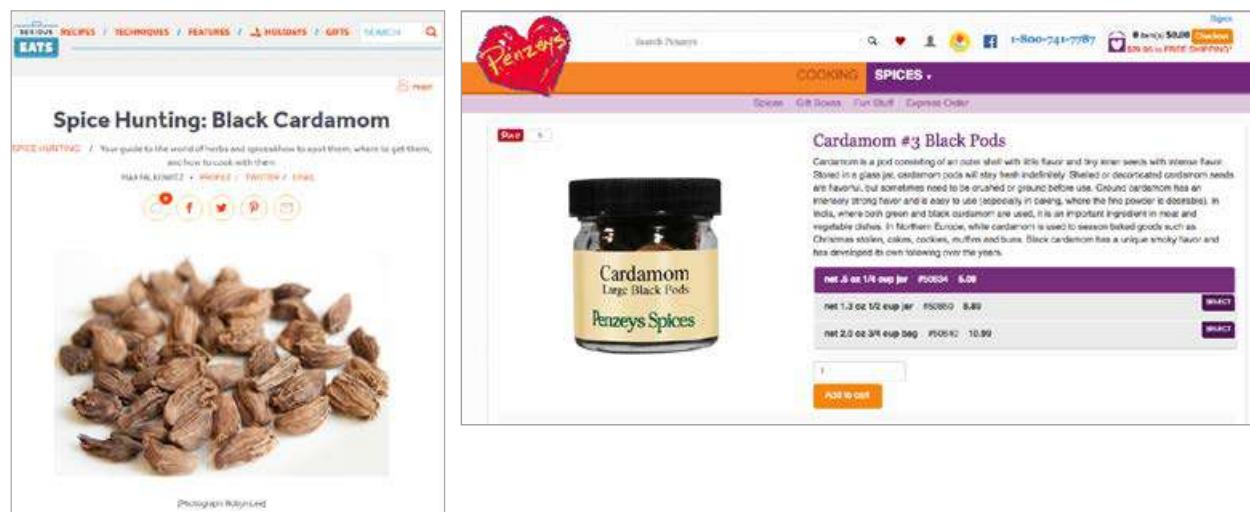
The Strategy proposes to elaborate a communication campaign targeting high-end spice specialty stores in various capitals hosting prominent Indian or Pakistani diasporas such as Delhi, Karachi, Dubai, New York and London. The introduction of this new 'Pink Everest Cardamom' must be done in close partnership with famous Indian and Pakistani chefs and launched as a special product with unique culinary features. Chefs would be invited to develop recipes and cooking demonstrations. Specialized press, social media and specialized spice cuisine websites would be relevant communication channels to target consumers. Free samples of pink cardamom could be sent to spice specialty stores and specialized online stores.

- The following actions are required to promote pink large cardamom in spice specialty stores and specialized online stores:
  - Analyse the chemical characteristics and flavour of pink cardamom;
  - With the support of development agencies, set up a cooking research project with top chefs to integrate Pink Everest Cardamom in Indian and Pakistani recipes;
  - Carry out an online communication campaign to promote Pink Everest Cardamom in specialized press, social media and specialized spice cuisine websites supported by FLCEN, TEPC and business schools;
  - Develop attractive packaging for final consumers;
  - Send samples to specialized spice and online stores.

Table 11: Examples of specialized spice cuisine websites and specialty spice online stores selling large cardamom

	Online store	URL	Target market	Black cardamom sold
1	The Spice Shop	<a href="https://thespiceshop.co.uk/">https://thespiceshop.co.uk/</a>	Globally	Yes
2	Penzeys	<a href="https://www.penzeys.com">https://www.penzeys.com</a>	United States	Yes
3	Spices Inc.	<a href="http://www.spicesinc.com/">http://www.spicesinc.com/</a>	United States	Yes
4	My Spice Sage	<a href="https://www.myspicesage.com/">https://www.myspicesage.com/</a>	United States	Yes
5	Just Ingredients	<a href="http://www.justingredients.co.uk/">http://www.justingredients.co.uk/</a>	Globally except for certain countries (Africa, Australia, Canada, South America, United States, China, Japan, Republic of Korea, India and Norway)	Yes
6	Spice Jungle	<a href="https://www.spicejungle.com/">https://www.spicejungle.com/</a>	Globally	Yes
7	Steenbergs Organic	<a href="http://www.steenbergs.co.uk/">http://www.steenbergs.co.uk/</a>	Globally except for the United States and Canada	Yes
8	21 Gourmet Street	<a href="http://21gourmetstreet.com/">http://21gourmetstreet.com/</a>	Dubai	No, only large cardamom
9	Choithrams	<a href="https://choithrams.com/">https://choithrams.com/</a>	Dubai	No, only other types of cardamom
10	Easy Living	<a href="http://www.easyliving.ae/">http://www.easyliving.ae/</a>	Dubai	No, only other types of cardamom

## Specialized online stores



<http://www.serioouseats.com/>

<https://www.penzeys.com/online-catalog/cardamom-3-black-pods/c-24/p-1230/pd-s>

### Develop exports of large cardamom seeds

Individual seeds of green cardamom are sometimes chewed and used in much the same way as chewing gum. It is used by confectionery giant Wrigley; its Eclipse Breeze Exotic Mint packaging indicates the product contains 'cardamom to neutralize the toughest breath odours'. Based on interviews with Ethiopian black cardamom exporters, the ITC team has identified that exports of black cardamom seeds are already taking place. Any further investigation here would first require samples of

large cardamom seeds in order to compare their quality with 'duplicate'/black cardamom seeds and then communicate with present buyers of seeds.

■ The Strategy proposes to:

1. Find food processors interested in seeds, such as for use as a mouth refresher.
2. Carry out market research to identify the price, the technology required and the competition.
3. Develop seed extraction tools and technology.

### Market and product diversification opportunities recap

	Existing markets	New markets
Existing products	<p>Market penetration</p> <p>Remain competitive in the Pakistan market:</p> <ul style="list-style-type: none"> <li>• Develop marketing efforts in the traditional markets of India and Pakistan to promote the superior quality of Nepali large cardamom vis-à-vis 'duplicate' black cardamom</li> <li>• Develop new trade routes and direct distribution channels to Pakistan</li> </ul>	<p>Market development</p> <p>Diversify exports of large cardamom:</p> <ul style="list-style-type: none"> <li>• Investigate potential market opportunities with the Pakistani diaspora living in the Middle East, United States and United Kingdom.</li> <li>• Explore interest in Muslim countries for Nepali-flavoured biryani dishes</li> </ul>
New products	<p>Product development</p> <ul style="list-style-type: none"> <li>• Promote Pink Everest Cardamom in high-end specialty spice stores and specialized online stores</li> <li>• Develop seed extracts (de-shelling of pods)</li> </ul>	<p>Diversification</p> <p>Oil extraction based on research on different varieties of large cardamom</p>

## STRUCTURAL IMPROVEMENTS TO THE VALUE CHAIN

A number of structural improvements to the value chain were suggested by value chain stakeholders and are grouped according to the following five value options:

- Improve efficiency
- Retain more value in the country
- Add value by improving existing products
- Create value by developing new products
- Contribution to development.

### Box 11: Value options for the large cardamom sector

Improve efficiency: Acquire value by improving efficiency between actors in the value chain, especially concerning the increase of production, research and promotion (and thereby enhancing the sector's competitiveness)		
Value option	How to implement	Time frame
Foster collaboration between FLCEN, CDC, NARC and MoAD to boost creation of disease-free certified nurseries	<ul style="list-style-type: none"> <li>• DADO and CDC should consider the creation of satellite large cardamom nurseries managed by DADO extension officers under the technical supervision of CDC</li> <li>• A quality accreditation system for private nurseries needs to be put in place to grow disease-free, clean and healthy planting material, managed through close collaboration between NARC, CDC and DADO</li> </ul>	Short term
Foster collaboration between private sector and public technical agencies involved in R&D projects	<ul style="list-style-type: none"> <li>• Government must play an important role through prioritizing research and allocating sufficient budget to implement these new technologies and agricultural practices</li> <li>• A clear agricultural research policy on large cardamom has to be established, supported by a cardamom experts' committee comprised of persons from multiple disciplines and involving representatives of both the public and private sectors</li> <li>• One agency must be clearly appointed to coordinate the research effort and build partnerships with foreign research institutes specialized in spices and cardamom</li> </ul>	Short term
Reinforce the support services provided by the private sector association, FLCEN, concerning changes in production practices and development of new promotion campaigns	<ul style="list-style-type: none"> <li>• FLCEN needs to set up a consortium of farmers, traders, public support services and <i>bhatti</i> producers to design, fabricate, install and test the overall performance of modern <i>bhattis</i></li> <li>• FLCEN should partner with development agencies to provide training in GMPs related to the installation and use of modern <i>bhattis</i>. A training of trainers approach should be taken, managed by FLCEN with the support of CDC</li> <li>• Review the FLCEN Code of Conduct (CoC) and integrate new quality standards</li> <li>• Disseminate information about QM and storage procedures to farmers' cooperatives</li> <li>• Improve the FLCEN website and marketing materials to provide more information about large cardamom to potential buyers in overseas markets</li> <li>• Develop partnerships between FLCEN, TEPC and Kathmandu University School of Management (KUSM) to develop marketing activities involving new communication channels such as social media and online marketplaces</li> <li>• Reinforce the capacities of FLCEN to promote Everest Big Cardamom in the international market by organizing international marketing training programmes for traders</li> </ul>	Short term
Strengthen exporters' ability to handle international export procedures, documentation and trade finance requirements	<ul style="list-style-type: none"> <li>• Train exporters on export documentation and export packaging</li> <li>• Build partnerships with banks to develop trade finance services and introduce insurance schemes</li> <li>• Train exporters on trade finance for large cardamom</li> </ul>	Medium term

### Value retention: Minimize postharvest losses and improve productivity and QM

Value option	How to implement	Time frame
 <b>VR1</b> Improve productivity of orchards by disseminating GAPs, focusing on pest/disease management and climate-smart production practices	<ul style="list-style-type: none"> <li>Upgrade old orchard management by disseminating specific GAPs, including knowledge about soil nutrients, pest and disease control and shade tree management through specialized training, model farming and demonstrations</li> <li>Establish commercial large cardamom orchards in new production areas in western Nepal</li> <li>Disseminate best practices for pest and disease management through mass campaigning</li> <li>Develop improved tools to harvest large cardamom</li> </ul>	Short term
 <b>VR2</b> Improve drying techniques and postharvest centralized processing at the farmer level to improve quality	<ul style="list-style-type: none"> <li>R&amp;D programmes to improve medium and large community-managed modern <i>bhattis</i> and develop related business support services</li> <li>Same for cleaning and tail cutting and grading after drying</li> <li>Improve tools for tail cutting to improve productivity</li> </ul>	Short term
 <b>VR3</b> Improve QM in terms of storage and processing techniques	<ul style="list-style-type: none"> <li>Improve moisture control during the drying process at the farmer level (should be &lt;12%)</li> <li>Improve QM at storage and processing units in Birtamod</li> <li>Prevent adulteration with wild cardamom</li> <li>Review the CoC for large cardamom, focusing on quality requirements, storage management and moisture control</li> </ul>	Short term

### Value addition: Develop the production of higher-value added products by improving the export quality and grading system

Value option	How to implement	Time frame
 <b>VA1</b> Adopt and disseminate compulsory grading, standardization and quality standards at the production and processing levels, and for exports	<ul style="list-style-type: none"> <li>Define clear grading standards and disseminate the information to farmers</li> <li>Define a price differentiation mechanism negotiated between farmers' associations, collectors and traders through FLCEN</li> <li>Review the CoC for large cardamom, focusing on price determination according to quality standards</li> <li>Benchmark analysis: investigate the (export) quality of black cardamom from Guatemala, Ethiopia and Viet Nam; eventually also that of green cardamom from Guatemala, using specifications provided by international traders of such products</li> </ul>	Medium term
 <b>VA2</b> Define and adopt GMPs for the processing and storage units in Birtamod	<ul style="list-style-type: none"> <li>Carry out an HACCP certification programme for large processing units in Birtamod</li> <li>Develop a systematic and standardized MRL testing for biphenyl and PAHs to meet MRL export requirements and comply with international quality standards such as those set by ESA</li> </ul>	Short term
 <b>VA3</b> Develop a traceability system between actors to monitor quality and MRLs	<ul style="list-style-type: none"> <li>The batch has to be registered from local production to district traders and exporters to ensure traceability. This can be achieved by preharvest distribution of bags with the GPS number of respective farmers</li> <li>Improve testing facilities for MRLs in Nepal:</li> <li>Establish internationally accredited laboratories in Nepal for chemical testing</li> <li>Improve DFTQC chemical laboratories' and other private laboratories' international accreditation for MRLs</li> </ul>	Long term
 <b>VA4</b> Use new packaging for new export markets	<ul style="list-style-type: none"> <li>Use cheaper packages for export, such as polypropylene bags</li> <li>Develop specific carton packaging that can be easily shipped (10 kg)</li> </ul>	Short term
 <b>VA5</b> Promote the Big Everest Cardamom trademark in other Muslim countries	<ul style="list-style-type: none"> <li>Develop a local brand to improve the visibility of the spice in other markets, starting with Muslim countries with important Pakistani diasporas</li> <li>Conduct market studies on food recipes in targeted countries to create new versions of biryani recipes for other Muslim countries</li> </ul>	Medium term

Value creation: Develop new market linkages by exporting new differentiated products		
Value option	How to implement	Time frame
Develop sales of large cardamom seeds	<ul style="list-style-type: none"> <li>Find food processors interested in seeds, such as spice grinders and mouth refresher producers</li> <li>Carry out market research to identify the price, the technology required and the competition</li> <li>Develop seed extraction tools and technology</li> </ul>	Short term
Promote Pink Everest Cardamom in niche specialty spice high-end markets and specialized online stores	<ul style="list-style-type: none"> <li>Analyse the chemical characteristics and flavour of pink cardamom</li> <li>Set up a cooking research project with top chefs to integrate Pink Everest Cardamom in Indian and Pakistani recipes</li> <li>Carry out an online communication campaign to promote Pink Everest Cardamom in specialized press, social media and specialized spice cuisine websites</li> <li>Develop attractive packaging for final consumers</li> <li>Send samples to and specialized spice online stores</li> </ul>	Medium term
Research derived products, applications and potential market opportunities	<ul style="list-style-type: none"> <li>Research the market potential of large cardamom grinds with food specialists</li> <li>Research large cardamom essential oil characteristics, processing requirements and market opportunities</li> <li>Research drying floral parts to use the pink pigments as a natural dye and use the dry leaves, stem and husk of the capsules to make handmade paper</li> </ul>	Medium term
Value distribution: Economic and social development opportunities		
Value option	How to implement	Time frame
Promote the integration of women and young smallholders in FLCEN	<ul style="list-style-type: none"> <li>Encourage women to participate in FLCEN</li> <li>Encourage young smallholders and entrepreneurs to develop new products</li> </ul>	Short term

The section below provides more explanation on the different value options and actions required.

## IMPROVE EFFICIENCY

### Foster collaboration between FLCEN, CDC and DADO to boost creation of disease-free certified nurseries.

Due to both the good market price and an alarming disease infestation situation, there is increasing demand for saplings to quickly replant old orchards in eastern Nepal and keep developing growing areas in central and western Nepal. CDC, in consultation with DADO, has put in place a programme to support the development of private nurseries to specifically produce seedlings and healthy suckers. There are about 100 private nurseries with a production capacity of 3.5 million seedlings available from 2018 onwards. These are spread in almost 15 large cardamom producing districts. Unfortunately these programmes cannot meet the ever-increasing demand for virus-free seedlings in spite of a long fruit-bearing time. The private sector needs to be further involved in the establishment of large cardamom nurseries. The current

subsidy systems have been effective but there is still a gap in the production of seedlings.

- DADO and CDC should consider the creation of satellite large cardamom nurseries managed by DADO extension officers under the technical supervision of CDC.

Additionally, despite the expertise and dedication of CDC experts and technicians to assist private nurseries, the process does not ensure access to disease-free quality input materials.

- A quality accreditation system of private nurseries needs to be put in place to grow disease-free, clean and healthy planting material, managed through close collaboration between NARC, CDC and DADO.

Private nursery owners will have to follow an advanced course on nursery and pest/disease management. CDC experts would then closely monitor these types of nurseries. CDC carries out regular training of trainers programmes on GAPs. This programme should be supported by a communication campaign on television and radio.

### **Foster collaboration between private sector and public technical agencies involved in R&D projects.**

R&D programmes on large cardamom have been scattered between various offices (NARC, CDC, Agricultural Research Station Pakhrivas and Commercial Crop Division) and regions without developing any dialogue with the private sector. For instance, CDC has no specific equipment or laboratory to conduct research on pests and diseases. Recent research has led to the development of new technologies for large cardamom, especially research done by NARC. However, the findings have not been effectively tested and validated on a large scale in farm conditions.

The sector, including planters and traders, has realized the urgent need for a highly specialized and autonomous large cardamom research and training institute that facilitates research and training on all aspects of cardamom technology and thereby supports the enhancement and modernization of cultivation and processing. The scope of such a specialized institution includes:

- Plant breeding for improved and market-oriented cultivars
- Soil fertility management and improvement
- Integrated pest management (entomology and pesticides)
- Mechanization and productivity improvements
- Energy management (alternative sources, efficiency and economy)
- Quality and automation
- Laboratory management and certification
- By-product uses
- Socioeconomic and environmental concerns.

Such an institution will integrate and coordinate R&D activities on some of these important areas that attract the services of senior scientists and highly specialized technical manpower. It should also have its own research farm, laboratory and other infrastructure. The Government of Nepal has two options: (a) set up a completely autonomous institution under public-private partnership; or (b) to restructure NCARP and strengthen its current set-up with private sector participation.

An autonomous research organization would have several advantages in terms of effective professional and team research work free of government and political interference and management hierarchical influence. Furthermore, private sector involvement encourages long-term, needs-based, commercial and result-oriented research and training. Private sector large cardamom plantations and CDC can support the institution by providing land and other resources for experimental farming and technological research. The advantages of restructuring and strengthening NCARP for large cardamom technology development

are: (i) the technical expertise in different facets of NARC could be tapped into at low cost; (ii) NARC has established historical data and documentation; and (iii) donor partners will have easy access and flexibility to work together with NCARP for R&D. A decision will need to be made between the two options.

However, in the immediate future the Government should encourage the restructuring and strengthening of NCARP with the active participation of the private sector as the most important beneficiaries of the results of research and technological development.

- Government has an important role to play through prioritizing research and allocating sufficient budget to implement these new technologies and agricultural practices.
- A clear agricultural research policy on large cardamom must be established, supported by a cardamom experts' committee comprised of persons from multiple disciplines and involving representatives of both the public and private sectors.
- One agency, potentially NCARP, must be clearly appointed to coordinate and carry out the research effort and build partnerships with foreign research institutes specialized in spices and cardamom, as well as development agencies.

### **Reinforce the support services provided by the private sector association, FLCEN, concerning changes in production practices and development of new promotion campaigns.**

FLCEN plays an important role in supporting the development of the sector and conducting policy advocacy on behalf of its members. As presented in the following sections on 'value addition' and 'value creation', one of the key objectives is to improve drying techniques and adopt GMPs for the processing and storage units in Birtamod. FLCEN must be the driving force of change and push the entire sector to actively engage in collectively upgrading its traditional practices to modern, internationally recognized practices in order to be able to reach new export markets. The following activities will need to be managed by FLCEN:

- Set up a consortium of farmers, traders, public support services and *bhatti* producers to design, fabricate, install and test the overall performance of modern *bhattis*;
- Partner with development agencies to providing training in GMPs related to the installation and use of modern *bhattis*. A training of trainers approach should be taken, managed by FLCEN with the support of CDC;
- Review the CoC and integrate new quality standards;
- Disseminate information about QM and storage procedures to farmers' cooperatives.

FLCEN, supported by TEPC, has recently developed a CoC for the entire sector and set up standardized grading (Jumbo Jet, standard and regular). Both organizations also developed a trademark for large cardamom – Everest Big Cardamom. However, no marketing and promotion campaign has been developed since and the sector clearly lacks capacities to promote itself in the international market. Following the successful example of orthodox tea, the sector association needs to strengthen its marketing skills and actively engage with institutions such as TEPC and KUSM so traders and FLCEN members can learn about international marketing. A few basic activities that need to be undertaken quickly:

- Improve the FLCEN website and marketing material to provide more information about large cardamom to potential buyers in overseas markets.
- Develop partnerships between FLCEN, TEPC and KUSM to develop marketing activities involving new communication channels such as social media and online marketplaces.
- Reinforce the capacities of FLCEN to promote Everest Big Cardamom in the international market by organizing international marketing training programmes for traders.

### Develop export business services and international trade culture: the requirements to cover 'the last mile' to successful exporting.

Large cardamom exporters in Nepal do not have much exposure to the intricacies of the international export business. Most of them are small traders and their experience is limited to exporting large cardamom to Siliguri market, which is close to the Nepal border. Only a few exporters have shipped large cardamom to markets overseas. Export is to be done carefully, particularly to distant countries, and with proper documentation. Hence exporters and/or their personnel need to be well-trained in export procedures and documentation.

A major additional drawback will be the restriction on export funding, as it cannot be expected that new buyers will consider any form of prepayment and nor do they like letters of credit. Rather they will buy FOB, or preferably CFR/CIF. This calls for actions with respect to:

- Training on export documentation and export packaging: Certificate of Origin, Health Certificate, Bill of Lading, packing list, invoice, fumigation certificate, quality analysis (by external lab)
- Stowage in a container: 40 ft. high cube (25 tons) or 20 ft. (10.5 tons) and polypropylene bags of 51.5 kg gross (= 50 kg net).

Since one cargo of 10 tons may have a value of US\$200,000, this will require financial and insurance instruments. For this the sector will need to build partnerships with banks specialized in trade finance. A key financial aspect will be to arrange working capital to finance CIF port-of-destination, as sea freight takes 4–6 weeks compared with truck transport, which takes 4–5 days to Delhi. Some experienced traders in large cardamom suggested using Advanced Payment Certificates. However this is not a common practice in spices. The following actions will be required:

- Building partnerships with banks to develop trade finance services and introduce insurance schemes
- Training on trade finance for large cardamom exports.

### VALUE RETENTION

#### Improve the productivity of orchards by disseminating GAPs focusing on pest/disease management and climate-smart production practices.

Improving orchard management practices will result in maintaining healthy gardens and increased productivity. There is a tendency to use old practices for planting and harvesting of large cardamom. There is a clear need to disseminate GAPs such as earthing up, irrigation, manuring, weeding, trashing, seed collection and selection for seedling raising, seed quality, scarification, soil moisture, and monitoring and management of pests.

- Upgrade old orchard management practices by disseminating specific GAPs – including knowledge about soil nutrients, pest and disease control and shade tree management – through specialized training, model farming and demonstrations.

Weeding and thinning, proper manuring and covering, shade regulation and timely irrigation are major works to be carried out by farmers on a regular basis. Most farmers do this work themselves or hire labour directly or through contracts. The recommended orchard management practices need to be demonstrated to all cardamom farmers as the commercialization of monoculture demands that specialized jobs be done in a specified manner. There are examples of farmers who are engaged in large cardamom farming as a successful business.

Traditional practices need to be revisited to develop large cardamom commercial farming because it requires specialized knowledge and skills. Model farms and practice demonstration farms can be jointly supervised and organized by DADO and field technicians/farmers in order to share techniques with a large number of large

cardamom farmers. Additionally, preparation of audiovisual aids from model farms and farmers will help in large-scale dissemination of information to farmers located in remote areas.

Government service providers at DADO and agriculture technicians also need to upgrade their knowledge and skills in cardamom farming. Private actors like lead farmers and nursery owners also need to be knowledgeable and skilful in dealing with large cardamom farmers regarding planting, equipment and tools, with proper care and handling techniques.

- Establish commercial large cardamom orchards in new production areas in western Nepal

Areas for cultivation need to be selected carefully. For instance, the selected land should be free from hard pan and big boulders around and below the soil surface. There should also be arrangements to manage plant shading. The absence of these two factors might have negative effects on long-term plant growth. Then maintenance of plant density with proper spacing and pit size is of the utmost importance. Early nourishment of young plants will give rise to robust and healthy plants which lead ultimately to good yields with minimal attacks of insects and diseases. Teaching of these principles is currently missing from large cardamom extension services and outreach needs to increase to a mass scale. Insects and diseases are more likely to attack weaker plants, which then spread the infection to the whole garden.

- Disseminate best practices for pest and disease management through mass campaigning

Pests and diseases have become a very serious issue, especially in some parts of Ilam, Panchthar and Taplejung districts. Unfortunately there are only very limited solutions once a large cardamom plant is infested. Some domestic biopesticides such as insect repellent and plant-nourishing liquid mixtures can be developed locally and sprayed in the garden. Otherwise, there are no specific plant protection materials for large cardamom diseases sold in the market. Uprooting the infected plants and destroying them in the early stages will minimize the spread of disease. Mass campaigns for timely awareness are the only remedy to overcome this problem and can be undertaken in partnership with the National Spice Crops Development Programme, CDC, DADO and UNNATI.

- Develop improved tools to collect large cardamom

Faulty harvesting practices result in lifting the rhizome above ground and damaging the plant. Appropriate tools need to be developed in order to properly harvest the capsules.

### Improve drying techniques and postharvest centralized processing at the farmer level.

Large cardamom is one of the very few products to which farmers add value (by drying the large cardamom capsule). Traditional drying practices using firewood and earthen *bhattis* are the norm.

Previous technical assistance programmes have often said that traditional *bhattis* are not energy-efficient. Moreover, the end product is of inferior quality because it is not uniformly dried. Past assistance programmes supported by the Netherlands Development Organization have introduced modern energy-efficient and smoke-free *bhattis*. Recently, energy-efficient double drum dryers have been introduced. The pink cardamom produced with a modern *bhatti* system is definitely of superior quality. Despite this positive result the need to use only modern *bhattis* has not yet reached a consensus within the entire sector. The main reason is that the demand for large cardamom produced with old dryers is still higher than for that produced with improved dryers. The pink cardamom does not fetch a higher price with Indian buyers as the final consumer is not used to the appearance of pink large cardamom.

These improved dryers are expensive for common cardamom farmers and only a few companies are actively designing, fabricating, installing and testing the modern *bhatti*. For these units, the entire cost may be met by the financial support of the Agriculture Department involving the private sector, especially traders. For instance, a fee could be charged to farmers on a per kilo basis to help cover running and maintenance costs. These large dryers could be under the management of large cardamom small farmers' associations at respective locations.

There is a clear need to keep improving the efficiency of modern dryers and to create a business model to support their operating and installation costs. This calls for field-level joint R&D including all stakeholders: farmers' associations, modern *bhatti* manufacturers, DADO, financial institutions and traders, coordinated by FLCEN.

No other value addition is taking place at the farmer level. Grading and tail cutting are not done by farmers. Cutting the tails off capsules makes the produce clean. Grading is entirely done by traders.

- Create an R&D programme to improve medium and large community-managed modern *bhattis* and develop related business support services.
- Develop value addition activities at the farmer level by developing sorting and grading.
- Improve tools for tail cutting: mostly simple scissors are used but there are already better mechanized tools available in Nepal which need to be distributed to farmers.

### Box 12: Low cost modern dryers for large cardamom and spices

A major component of this modern cardamom dryer is the wood combustor, which generates clean and hot gas for direct heating and drying of large cardamom raw capsules in cardamom growing areas. The combustor burns firewood completely in a smoke-free environment and reduces wood consumption by 75% as well as shortening the curing period, thereby improving the quality of the dried cardamom. A roughly 45% increase in the essential oil content of cardamom dried this way is observed over cardamom dried using traditional methods. The dryer can also be used for drying of other spices such as chilli, ginger, garlic, etc.

**Product features:** The wood combustor – equipped with a corrugated grate, perforated combustion chamber, hood, etc. – is portable and detachable. The combustor burns firewood completely with the help of primary and secondary air streams for generation of clean hot gas. The combustor is placed at the bottom of a brick/mud walled chamber or inside the traditional *bhatti*. The top portion is covered with a steel wire net or bamboo mat for holding the raw cardamom capsules. The wood combustor supplies hot gas below the wire net at a uniform temperature for drying the spices. This method of drying of cardamom capsules is similar to the traditional process, thus finding high acceptability among farmers.

**Raw materials, equipment and tools required for fabrication:** Mild (low carbon) steel angle and sheets, galvanized iron sheets, brick or mud walls, welding and drilling machines, hand tools.

**Impact:** This new type of dryer is popular in north-eastern states of India and is conserving huge quantities of firewood and forests while also improving the quality of large cardamom, resulting in higher profits to farmers.



Traditional *bhatti*

Example of modern *bhatti*

Cardamom produced with modern Bhatti keeps its original pinkish colour

## Improve QM in terms of storage and processing techniques

Quality is the essential prerequisite for gaining and maintaining sustained competitive advantage and market presence in the international market. Through safety, performance, reliability and sustainability, quality is critical to export success. Enterprises with sound QM are likely to be more innovative.

- Improve moisture control during the drying process at the farmer level

Control moisture variations (should be <12%) by developing centralized drying centres.

- Improve QM at storage and processing units in Birtamod

QM is defined in ISO 9000 as 'coordinated activities to direct and control an organization with regard to quality'. To direct and control an organization, its management should first set out its quality policy and related quality objectives and then specify activities related to quality planning, quality control, quality assurance and quality improvement. The objective of QM is to ensure that all company-wide activities necessary for enhancing the satisfaction of customers and other stakeholders are carried out effectively and efficiently. QM focuses not only on product/service quality but also on the means for achieving it.<sup>36</sup>

A first step prior to introducing QM for processing units is to implement 5S as a good housekeeping tool. The 5S system allows improved productivity and reduces cost by simply carrying out systematic organized housekeeping within the processing unit. 5S is based on five steps:

1. Sort (distinguish between necessary and unnecessary items).
2. Set in order (enforce the dictum 'a place for everything and everything in its place').
3. Shine (clean the workplace and look for ways to keep it clean).
4. Standardize (maintain and monitor adherence to the first three Ss).
5. Sustain (follow the rules to keep the workplace 5S-right. Hold the gain).

These training activities on quality improvement and moisture control at the level of the processing units need to be rolled out annually. The following activities should take place:

- Introduce 5S housekeeping and then QM practices to processing unit owners and workers by developing user-friendly training packages and training programmes with a specific focus on storage standards. The topics will include intake control, quarantine area for (insect) infested goods, high-medium- and low-care sections, temperature and moisture control, dressing instructions for personnel and a specific dispatch area.

- Prevent adulteration with wild cardamom

As previously mentioned, some traders ask Nepali farmers to supply wild cardamom as a separate consignment: the taste is bitter but the pods are difficult to distinguish from large cardamom. Wild cardamom is also mixed with large cardamom; this practice must be considered adulteration and be stopped immediately.

- Review the CoC for large cardamom, focusing on quality requirements, storage management and moisture control

FLCEN has already defined specific quality requirements in its CoC. It is important to review these requirements in light of international market requirements and ESA quality standards and define clear storage guidelines focusing on moisture control.

## VALUE ADDITION

### Adopt and disseminate compulsory grading, standardization and quality standards at the production and processing stages and for exports.

Grading is an important tool for the buyer to value produce properly at the time of purchase. It is often difficult to ascertain the price of assorted produce and in the absence of grading the buyer normally fixes the price more on notion (most often in the buyer's favour). Large cardamom exporters do some rough grading as small, medium and large; and in medium and large, tail cut and uncut. However, these grades must be based on scientific standards and with clear specifications based on market requirements. The current practice of grading needs to be critically studied and definitions and specifications prepared for different grades required in the market. These grades should be discussed with major foreign buyers at Siliguri and Delhi in India for fine tuning. Then the grades should be adopted by the Government as grades of large cardamom of Nepal. Such specifications should be clearly documented and include:

36. International Trade Centre and Physikalisch-Technische Bundesanstalt (2011). Export Quality Management: A Guide for Small and Medium-Sized Exporters. 2nd edition, p. 11.

- The proportion of cardamom pods with tail
- Foreign and extraneous matter, preferably < 1% and < 4% respectively
- Moisture as measured by professional equipment must be <12%
- Grade measured in size and purity
- MRLs like biphenyl and PAH tests

A financial incentive for farmers has to be clearly determined following these specific grading criteria. These grading and improved quality requirements during harvesting and drying must be reflected in the price determination in order to ensure sustainable supply of quality large cardamom.

Once this stage is reached, grading should be made compulsory for export. When only graded produce exits the country, it should be possible to realize a higher return from exports. Exporting will be much smoother if quality standards become transparent and used throughout the sector. FLCEN needs to be actively involved in the whole operation and ensure the application of this systematic grading mechanism for exports.

When it comes to exporting overseas to new markets, it will also be easier for international buyers to fix their prices according to specific quality and for control agencies to release a cargo on the basis of a Certificate of Analysis. Because payments will usually be FOB, the buyer needs confidence when he pays Cash Against Documents, and that confidence can only be based on agreed quality standards.

- Review the existing grading standards, adding specific scientific criteria, and disseminate the information to farmers.
- Define a price differentiation mechanism negotiated between farmers' associations, collectors and traders through FLCEN.
- Review the CoC for large cardamom, focusing on price determination according to quality standards.

### Define and adopt GMPs for the processing and storage units in Birtamod.

Working towards the production of safe, quality large cardamom will become mandatory for future export development. The large cardamom sector must **adopt large cardamom processing GMPs** which cover facilities, equipment, operating procedures and skills spanning the supply chain from large cardamom harvesting and drying to storage, dispatch and all the processing steps from sorting, grading and tail cutting through to packaging. The control of safety and quality hazards will be achieved by proper product design based on preventative measures that assure the safety and suitability of large cardamom and its packaging. An **HACCP certification**

**programme** needs to be established for large processing and storage units.

- Carry out an HACCP certification programme for large processing units in Birtamod.
- Develop systematic and standardized MRL testing for biphenyl and PAHs to meet MRL export requirements.

The use of inferior combustibles with traditional *bhattis* may provoke the occurrence of biphenyl and PAHs, rendering the product unfit for export to international markets. It is of utmost importance to start analysing systematically the content and residues in large cardamom in order to provide trustworthy specifications to potential buyers in overseas markets.

Set up a MRL testing programme with selected farmers, collectors and traders supervised by DADO, CDC and FLCEN

- Have 1 kg of Nepali large cardamom analysed for biphenyl and PAH; this is a 'benchmark' measurement.
- Select 100 farmers/collectors to work with improved *bhattis* and see if they can meet MRLs<sup>37</sup> and reach EU requirements.
- Investigate the organoleptic properties when sun drying large cardamom: taste, smell, firmness of shell, etc.
- Investigate if sun-dried Nepali black cardamom is acceptable for a broader group of recipes/users, apart from biryani eaters in Pakistan.

### Develop a traceability system between actors to monitor quality and MRLs.

Traceability is an important concept in the current international trade of foodstuff. There are both legal and non-legal aspects to traceability: food ingredients like spices should be traceable for food safety purposes.

Traceability is the ability to track any food, feed, food-producing animal or substance that will be used for consumption through all stages of production, processing and distribution. In the event of a food incident it enables the identification and subsequent withdrawal or recall of unsafe food from the market. If the food has not reached the consumer, a trade withdrawal is undertaken. If the food has reached the consumer, a product recall is undertaken which includes notification of the consumer through in-store notices and press releases.

37. MRL= Maximum Residue Level, in this case for biphenyl and PAHs.

Another reason traceability is important is that it allows food companies to monitor quality, MRLs and food safety along their supply chain and take rapid, focused corrective measures when required. To be applicable in the large cardamom sector, a batch would have to be registered from local production to district traders and exporters to ensure traceability. This can be achieved by preharvest distribution of bags with the GPS number of respective farmers.

The capacities of laboratories in Nepal have been strengthened over the last few years and accreditation has been obtained. MoAD now has to build and defend the reputation of its testing laboratories and the Government needs to ensure that the mutual standards recognition already stipulated in bilateral agreements with its main trading partners is applied.

- Develop a training of trainer programme on pesticide and chemical management for inputs suppliers to guarantee pesticide-free status or safe levels of MRLs for large cardamom production.
- Develop a monitoring system within cooperatives with outreach offices, field offices and field inspectors.
- Improve testing facilities for MRLs in Nepal:
  - Establish internationally accredited laboratories in Nepal for chemical testing.
  - Improve DFTQC chemical laboratories' and other private laboratories' international accreditation for MRLs.

### Use new packaging for new export markets.

As described previously, one current business practice of cardamom traders identified during the research for the development of this sector Strategy is to use specific packaging that allows transportation overseas. This would include:

- Use cheaper packages for export, such as polypropylene bags.
- Instead of using jute bags, packaging for export can be polypropylene bags, preferably single lined so the goods can aerate. Pack 25.2 kg gross in bags of 25 kg net, to compensate for moisture loss on the way. When pallets are needed, pack 20 bags on one pallet (500 kg) and use shrink wrap.
- Develop specific carton packaging that can be easily shipped, similar to what is being used for green cardamom, cloves and chillies: apply a food-grade 10 kg box.

### PROMOTE THE UNIQUE CULINARY FEATURES OF BLACK EVEREST CARDAMOM AND DEVELOP A SPECIALITY PRODUCE BRAND.

Large cardamom is valued for its flavour and aroma. It is reported that Nepali large cardamom is superior in quality to that from other origins. This may be mainly due to the proportionately large size of the capsules and the roasting process in the *bhatti*. It is necessary to look into inherent quality parameters such as oil and oleoresin contents by drawing a large number of samples from major producing areas and analysing them to establish their general levels. Following that, the effect of the drying process and its impact on flavour should be analysed.

Creating a brand exclusively for Nepali large cardamom is an important tool in marketing. Some popular spice origins such as Grenada nutmeg, Sarawak black pepper, Muntok white pepper or cinnamon from Sri Lanka have developed specific demand over the years in international markets and command high prices compared with similar spices from other origins. Hence an effort should be made to establish Nepal's superior quality in large cardamom and promote it with a suitable brand name in overseas markets.

The story of Nepal large cardamom – how it is produced without using chemicals and processed in improved *bhattis*, and its quality advantages over the produce from other origins – is not known by importers. Additionally, a few popular recipes in which large cardamom is used and provides its unique flavour should be explained and promoted. This information should be prepared in simple and easy to read language (including Urdu and Arabic) and displayed on an official website as well as in marketing material (brochures, leaflets). The existing Big Everest Cardamom trademark must be used and a new logo has to be developed to be located on all export packaging and business cards. The adjective 'Big' should be replaced by 'Black' as it brings more information to the buyers. Black cardamom is the common name used in the international market.

- Promote specialty products in specialized international trade fairs

Participating in international trade fairs is an effective way of gathering market information, getting to know the competition and meeting potential buyers. It is also a good way to increase the exposure of Nepali large cardamom in the world market. Trade fair websites usually propose catalogues which help to identify potential buyers. Examples of important trade fairs and forums have been identified in table 12.



Photo: ITC, Large cardamom weighting

### Box 13: Successful branding initiatives for specific spice origins

**Nutmeg:** Like black cardamom, nutmeg has a relatively small production volume, about 12,000 tons annually. It is primarily consumed in northern Europe, where it is a major ingredient in the meat industry: sausages, minced meat, etc. For that reason there is also considerable consumption in North America. Indonesia produces 80% of the world's nutmeg; second comes Grenada. [Grenada nutmeg](#) obtained a distinct image because of its consistent high quality and meeting MRLs, more specifically those for aflatoxin. Grenada nutmeg generally trades at prices 10% higher than Siau-Ambon nutmeg from Indonesia (for further information also see the ITC Grenada Sector Development Strategy 2010–2015).

**Sarawak black pepper:** Native to the Malaysian part of Borneo, this pepper is renowned for its mild flavour. It generally trades at prices 10% higher than the second-best [Lampung](#), from the island of Lampung in Indonesia.

**Muntok white pepper:** Coming from the island of Bangka, Indonesia, this product comes from the same *Piper nigrum* species but is exclusively grown for making white pepper. It is obtained by a special postharvest processing method, whereby ripe pepper berries are soaked for 1–2 weeks in clean running water, whereby the skin softens, the taste becomes 'fermented' and no black skin develops. It sells at a 30% premium over black pepper.

**Cinnamon from Sri Lanka:** True *Cinnamomum zeylanicum* is indigenous to Sri Lanka, formerly known as Ceylon. Its main importer is Mexico, where it is used to flavour coffee and chocolate drinks. True cinnamon sells at a price 50–100% higher than cassia. Cassia is called canela or cinnamon in Northern Europe and North America, where it is primarily used in bakery products. The main source of cassia is Indonesia.

Table 12: International spice trade fairs

Trade fair	Venue	Date	Website
<b>Middle East</b>			
Gulfood Manufacturing	Dubai UAE	November 2017	<a href="http://www.gulfoodmanufacturing.com/">http://www.gulfoodmanufacturing.com/</a>
<b>Asia</b>			
AAHAR	India	March 2017	<a href="http://www.aaharregionalfair.com/index.php?ref=home">http://www.aaharregionalfair.com/index.php?ref=home</a>
Annapoorna – World Food India	India	September 2017	<a href="http://www.worldoffoodindia.com/TheFair.html">http://www.worldoffoodindia.com/TheFair.html</a>
India International Trade Fair	India	November 2017	<a href="http://indiatradefair.com/iitf/">http://indiatradefair.com/iitf/</a>
• Every year they partner with a country which has a pavilion dedicated to their products.			
<b>Americas</b>			
Winter Fancy Food Show	San Francisco, United States	January 2018	<a href="https://www.specialtyfood.com/shows-events/winter-fancy-food-show/">https://www.specialtyfood.com/shows-events/winter-fancy-food-show/</a>
Summer Fancy Food Show	New York, United States	June 2017	<a href="https://www.specialtyfood.com/shows-events/summer-fancy-food-show/">https://www.specialtyfood.com/shows-events/summer-fancy-food-show/</a>
Expoalimentaria	Lima, Peru	September 2017	<a href="http://www.expoalimentariaperu.com/en">http://www.expoalimentariaperu.com/en</a>
<b>Australia</b>			
Fine Food Australia	Sydney, Australia	September 2017	<a href="http://finefoodaustralia.com.au/whats-on/">http://finefoodaustralia.com.au/whats-on/</a>
<b>International food trade fairs</b>			
BIOFACH	Nuremberg, Germany Delhi, India	February 2018 November 2017	<a href="https://www.biofach.de/">https://www.biofach.de/</a> <a href="http://biofach-india.com/">http://biofach-india.com/</a>
SIAL Food	Changes annually 1-China 2-Paris	Changes annually May 2017 October 2018	<a href="http://www.sialchina.com/">http://www.sialchina.com/</a> <a href="https://www.sialparis.com/">https://www.sialparis.com/</a>
Foodex	Japan Birmingham, United Kingdom	March 2017 April 2018	<a href="http://www.jma.or.jp/foodex/en/">http://www.jma.or.jp/foodex/en/</a> <a href="http://www.foodex.co.uk/">http://www.foodex.co.uk/</a>
Food Ingredients (Fi)	<ul style="list-style-type: none"> <li>Fi Istanbul in Turkey from 2–4 May 2017: meeting Middle East customers</li> <li>Fi South America in Sao Paulo, Brazil, 22–24 August 2017</li> <li>Fi Asia in Bangkok, 13–15 September 2017: the best place to meet traders and buyers from India, Indonesia and the Far East</li> <li>Fi Europe in Frankfurt, 28–30 November 2017; possibly interesting for the Muslim communities in Western Europe</li> <li>Fi Viet Nam in Ho Chi Minh City, 16–18 May 2018</li> <li>Fi Asia Indonesia in Jakarta, 3–5 October 2018</li> </ul>		
Health Ingredients (Hi)	<ul style="list-style-type: none"> <li>Hi Europe and Natural Ingredients (Ni), Frankfurt 27–29 November 2018</li> <li>Hi South-East Asia in Jakarta, Indonesia 22–24 March 2017</li> <li>Hi China in Shanghai, 20–22 June 2017</li> </ul>		

## VALUE CREATION

### Develop sales of large cardamom seeds.

As described previously, there is an existing market for individual seeds of green cardamom used as mouth refreshers. Further investigation is required to test large cardamom seeds as potential substitutes for or competitors to green cardamom seeds. In the case of positive results, the sector should communicate with existing green cardamom seed buyers. The following actions will be required:

- Find food processors interested in seeds, such as for mouth refreshers
- Carry out market research to identify the price, the technology required and the competition
- Develop seed extraction tools and technology.

### Promote Pink Everest Cardamom in niche specialty spice high-end markets and online stores.

As described previously, pink cardamom processed with the modern *bhatti* could potentially find a new niche market by targeting spice specialty stores and specialized online stores. This would require specific marketing strategies and developing a new trademark specifically for pink cardamom. The Strategy proposes to build on the existence of the trademark Big Everest Cardamom to create two new trademarks and develop distinctive marketing strategies. On one hand, Black Everest Cardamom would be promoted in traditional importing markets in India and Pakistan, and importing markets with target diasporas. On the other hand, Pink Everest Cardamom would only be promoted in high-end spice specialty stores in various capitals hosting prominent Indian or Pakistani diasporas (such as Delhi, Karachi, Dubai, New York and London) and specialized online stores.

- The following actions are required to promote Pink Large Cardamom in spice specialty stores and specialized online stores:
  - Review the existing trademark and create a new trademark specifically for pink cardamom processed with modern bhatts: Black and Pink Everest Cardamom.
  - Marketing activities targeting spice specialty stores and specialized online stores (described previously).



Photo: ITC, consultation in Birtamod

### Research applications for derived products and potential market opportunities.

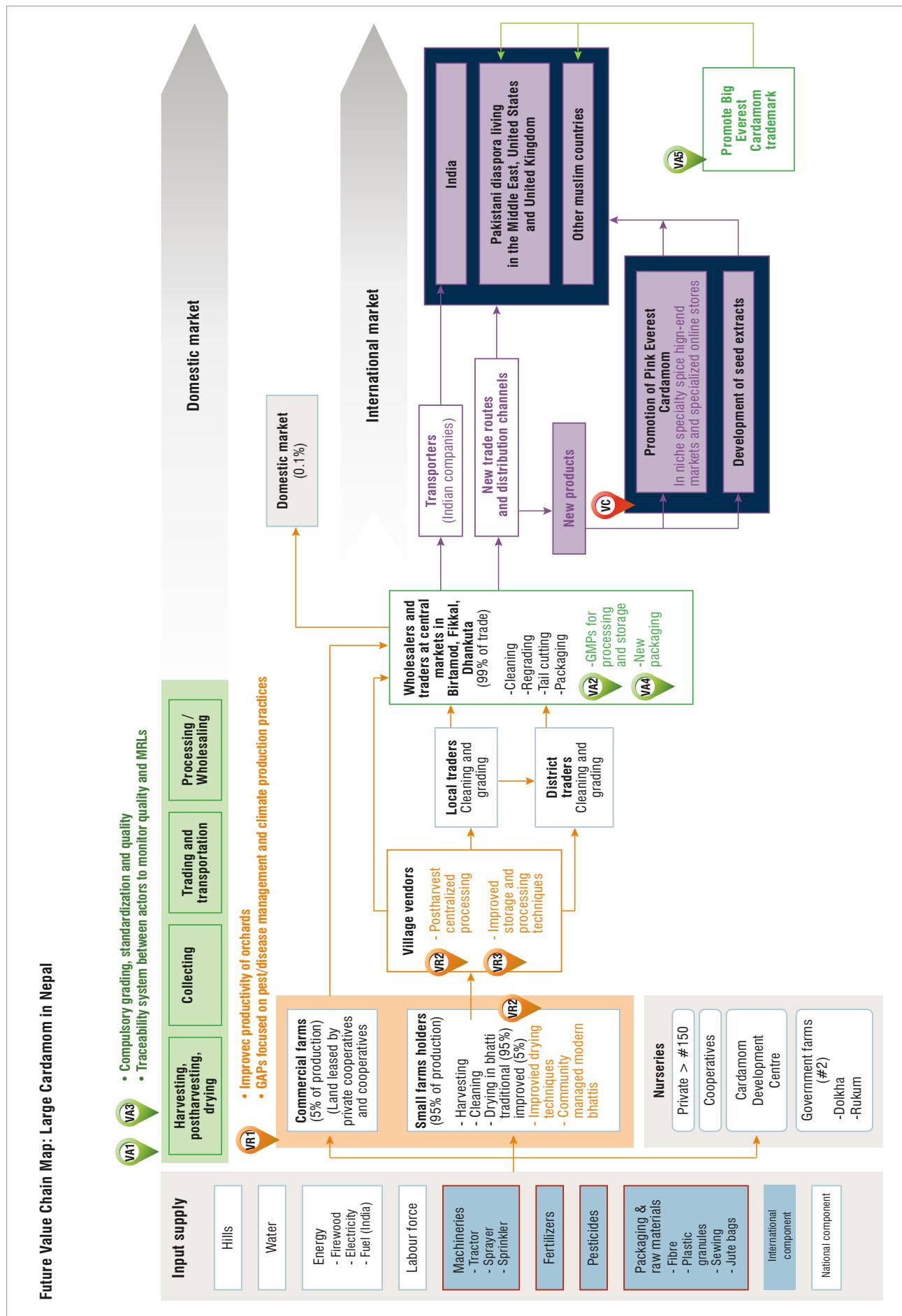
In order to increase demand for large cardamom it is necessary to develop derived products. Previous studies and sector analyses have indicated the possibility of drying floral parts to use the pink pigments as a natural dye; the dry leaves, stem and husk of the capsules for preparing handmade paper; and capsules/seeds for making special incense. Following the processing of other spices, another possible derived product would be to sell ground large cardamom ready to be used to prepare curry. This would require culinary investigation to properly test this new type of grind.

Previous research has also indicated the possibility of using different varieties of large cardamom roasted with modern bhatts for extraction of oil and oleoresin. Green cardamom essential oil is currently used in the industrial sector for flavouring various products such as toothpastes, biscuits, toffees, etc. It is worth investigating whether large cardamom essential oil could find an interest in the food industry given its smoky flavour. Additionally, the market for organic essential oil extracts is increasing from a small base, and a high premium is often available for many essential oils.

## FUTURE VALUE CHAIN

Developing Nepali large cardamom quality and sustainability will require transformations throughout the value chain. The structural improvements explained in the previous section are reflected in the future value chain schematic (see figure 21) and presented in colour. Major adjustments are also indicated with the following icon: .

Figure 21: Future value chain diagram



## LEVERAGING INVESTMENT TO DEVELOP PRODUCTION AND COMPETITIVENESS

Nepal has more than 1 million hectares of land in middle hill regions available for crops like cardamom. It is roughly estimated that, based on agro-climatic suitability, even 2% of such land would be enough to double present production. In view of market demand it is easily possible to expand investment in planting and production of cardamom in Nepal and the investment prospect is also bright for large cardamom-based industries such as spice packaging, essential oil making, etc. Moreover, a MoAD study has revealed that the cost benefit ratio of large cardamom is very high (1.10) due to the low investment required compared with the return. Setting up a large cardamom-based spice and essential oil or oleoresin production unit also seems viable as a joint venture with an international or regional spice manufacturing company.

## WAYS TOWARDS GREATER SUSTAINABILITY AND SOCIAL INCLUSIVENESS

### POTENTIAL OFFERED BY THE SECTOR FOR WOMEN

The sector offers potential for the empowerment of women in both rural and urban areas in Nepal. However, to achieve positive returns a number of orientations need to be considered as priorities. These areas will provide women with immediate opportunities and have the lowest involvement of cultural perceptions.

In Nepal's agricultural sector, around 90% of the farmers are women and most are usually small farm operators.<sup>38</sup> Both men and women have been reported to be equally engaged in cardamom farming, in preparing the farm, planting the saplings, weeding, irrigating or watering, harvesting or picking the capsules, drying the cardamom and selling the product.<sup>39</sup> However, women also perform value addition tasks which include cleaning, cutting and grading of large cardamom. It is mostly women who work in processing centres that carry out the value addition work, while it is mostly men who take the cardamom to

38. FAO of the UN (2010). Integration of Gender in Agriculture: An Analysis of Situation. p. 5; and SOFA Team and Doss C (2011). The Role of Women in Agriculture. *ESA Working Paper No. 11-02*, p. 2. Retrieved from <http://www.fao.org/docrep/013/am307e/am307e00.pdf>.

39. KC, Sony; Uperti, B.R.; and Subedi, B.P. (2016). We know the taste of sugar because of cardamom production': Links among Commercial Cardamom Farming, Women's Involvement in Production and the Feminization of Poverty. *Journal of International Women's Studies*, p. 192. Retrieved from: <http://vc.bridgew.edu/jiws/vol18/iss1/13>.

the market.<sup>40</sup> For example, in Jimale, a city in Nepal, there are no women traders because the patriarchal practice of designating gender roles suggests that women are less capable of doing this job.<sup>41</sup> In addition, there is a recent trend of men leaving the country to pursue employment in other countries, reinforcing the employment of women. Assistance through self-help groups, sustainable financial programmes and skills trainings can give women in this industry a good foundation to expand, improve and be competitive in the market.

### POTENTIAL OFFERED BY THE SECTOR FOR YOUNG PEOPLE

The Nepali youth (age 15–35) labour-force participation rate is roughly 84% in rural areas and 62% in urban areas.<sup>42</sup> Given that youth unemployment is high compared with other age categories (13.4%),<sup>43</sup> promoting decent and productive employment opportunities for youth has become a national priority. The cardamom sector has the potential to boost economic opportunities for youth due to being labour-intensive at both the farm and factory levels.

Enhancing the capacity of young farmers by introducing GAPs can increase their productivity and therefore their earnings. This can play a significant role in reducing rural-to-urban migration. Trainings and workshops can be provided in order to address challenges such as insufficient access to knowledge, information and education. In 2007, the All Nepal Peasants' Federation integrated a separate youth wing: the Youth Peasants Federation, which is also a member of the International Fund for Agricultural Development Farmers' Forum.<sup>44</sup> This federation promotes youth participation in policymaking processes. They have training courses for capacity-building and workshops for specialization on topics such as sustainable farming practices. They managed to create cooperatives for cardamom production and these cooperatives facilitated youth access to credit and other services. These initiative have proven that agricultural activities and agribusiness in cardamom can became more profitable for the youth, motivating other young people to go into farming<sup>45</sup> and possibly contributing to employment growth in Nepal.

40. *Ibid.*

41. *Ibid.*

42. Ministry of Health and Population (2012). National Survey on Adolescents and Youths; Pereznieta, P. (2016). Rapid Review of Programmes for Women and Girl's Economic Empowerment. *EPS-PEAKS*, p.2.

43. International Labour Organization (2014). Regional commissioners' youth employment forum in Tanzania. Retrieved from [http://www.ilo.org/addisababa/countries-covered/tanzania/WCMS\\_321400/lang--en/index.htm](http://www.ilo.org/addisababa/countries-covered/tanzania/WCMS_321400/lang--en/index.htm).

44. All Nepal Peasants' Federation website: <http://www.anpfa.org.np/>.

45. FAO of the United Nations (2014). Youth and Agriculture: Key Challenges and Concrete Solutions.p.84. Retrieved from <http://www.fao.org/3/a-i3947e.pdf>.

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To achieve the vision and strategic objectives that have been discussed above, a robust, actionable and realistic strategic PoA is required. This is provided in the section below, and effectively constitutes the heart of this Strategy.

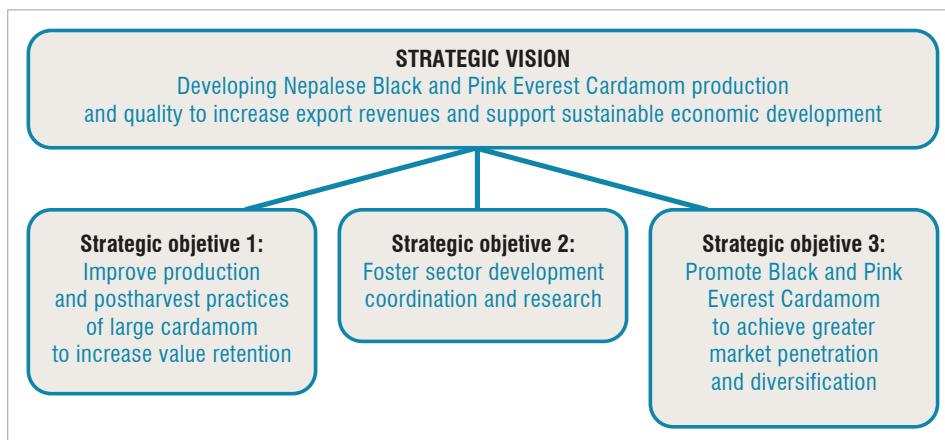
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Photo: ITC

# STRUCTURE OF THE POA

The PoA of the Strategy is articulated around three strategic objectives. Each strategic objective is composed of operational objectives to answer specific constraints affecting the sector. Below is the structure followed by the PoA.



1. Improve production and postharvest practices of large cardamom to increase value retention.
  - 1.1. Ensure better and disease-free seedlings for farmers.
  - 1.2. Improve productivity of orchards by promoting GAPs focusing on pest/disease management and climate-smart production practices.
  - 1.3. Promote adoption of GMPs for large cardamom drying using modern upgraded *bhattis* and storage management.
  - 1.4. Adopt compulsory export quality standards.
2. Foster sector development coordination and research.
  - 2.1. Develop a national large cardamom policy and create an institutional mechanism for sector coordination.
  - 2.2. Improve R&D on large cardamom plants and post-harvest treatment.
  - 2.3. Strengthen private sector associations to disseminate GMPs and carry out export promotion activities.
3. Promote Black and Pink Everest Cardamom to achieve greater market penetration and diversification.
  - 3.1. Develop export quality standards and a new collective trademark.
  - 3.2. Develop exporters' capacities to diversify export markets and value added products.
  - 3.3. Develop new trade finance mechanisms.
  - 3.4. Improve commercial diplomacy and negotiation for better access to potential new markets.

NEPAL  
NATIONAL SECTOR EXPORT STRATEGY  
LARGE CARDAMOM

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THE PLAN OF ACTION





Strategic objective 1 : Improve production and postharvest practices to increase value retention									
Operational objective	Activities	Priority 1=high 2=med 3=low	Starting period 2017 2018 2019 2020 2021	Beneficiaries	Target measures	Leading national institution	Supporting implementing partners	Existing programmes or potential support	
Operational objective 1.3 Promote adoption of GMPs for large cardamom drying using modern upgraded bhattis and storage management.									
1.3.1 Develop and disseminate modern energy-efficient and smokeless bhattis to improve drying techniques and reduce smoke contaminants while also conducting research on improved bhattis.		1		One hundred modern bhattis distributed annually		DADO		Farmers' cooperatives FLCEN	
» <b>Conduct a field study in India to assess other bhatti designs and efficiency.</b>				One consortium created		FLCEN		DADO CDC NARC	
1.3.2 Set up a consortium of farmers, traders, public support services and bhatti producers to design, fabricate, install and test the overall performance of modern bhattis.		1							
» <b>Organize a field research study to assess the effectiveness of modern bhattis and improve their design and reduce production costs.</b>									
1.3.3 Establish small processing units for cleaning, tail cutting and grading at farmer community level to increase value.		1		Farmers' cooperatives		One hundred collection processing centres established at village level		FLCEN	
» <b>Train farmers to clean and grade large cardamom at the farmer cooperative level and introduce new tools to harvest large cardamom.</b>								DADO CDC	
» <b>Develop modern tools and equipment for cleaning, tail cutting and grading.</b>									
1.3.4 Establish modern processing units in major trading hubs for cleaning, tail cutting and grading; and consolidation and packing, to improve export quality and compliance with export markets overseas.		1		Traders		Pilot one modern processing and packaging centre in Birtamod		FLCEN	
» <b>Improve QM in terms of storage facilities, packaging and moisture control during and after the drying process.</b>								DADO NARC, CDC, AEC	
» <b>Carry out an HACCP certification programme for large processing units in Birtamod.</b>									
» <b>Develop a systematic and standardized MRL test for biphenyl and FAHs to meet MRL export requirements and comply with international quality standards such as those set by ESA.</b>									
Operational objective 1.4 Adopt compulsory export quality standards.									
1.4.1 Review and disseminate the grading system developed by FLCEN to farmers, including moisture levels and clear physical characteristics, and introduce chemical characteristics (ESA product information).		1		Sector		One revised grading system established		FLCEN	
1.4.2 Define a price differentiation mechanism negotiated between farmers' associations, collectors and traders through FLCEN coordination.		1		Sector		One pricing system for reference established and regularly updated		FLCEN	
1.4.3 Review the CoC for large cardamom, focusing on price determination according to revised quality standards.		1		Sector		CoC reviewed		Farmers' cooperatives, traders	
» <b>Standardize methods for preparing large cardamom to export.</b>				Exporters		One benchmark report		TEPC	
1.4.4 Carry out a benchmark analysis of competing black cardamom.		2		Sector		FLCEN		Farmers' cooperatives, traders	
» <b>Investigate the quality of black cardamom from Guatemala, Ethiopia and Viet Nam using specifications provided by international traders of such products.</b>						FLCEN MoC		UNNATI International spice consultants	
1.4.5 Develop a traceability system between actors to monitor quality and MRLs.		3		Sector		Pilot traceability system		FLCEN	
» <b>A batch has to be registered from local production to district traders and exporters to ensure traceability. This can be achieved by preharvest distribution of bags with the GPS number of respective farmers or cooperatives.</b>								Farmers' cooperatives, traders, MoAD	

Strategic objective 2: Foster sector development coordination and research support.		Priority 1=high 2=med 3=low	Starting period 2021 2020 2019 2018 2017	Beneficiaries	Target measures	Leading national institution	Supporting implementing partners	Existing programmes or potential support
Operational objective	Activities							
Operational objective 2.1	Develop a national large cardamom policy and institutional mechanism for sector coordination.	1		Sector	One official cardamom policy	MoC	MoAD, FLCEN	
	2.1.1 Formulate and launch a national large cardamom policy to support this sector export strategy and related action plan.			NCARP		MoAD	NARC, CARP, DADO, FLCEN	CDC
	2.1.2 Conduct a needs assessment for an institution and propose pragmatic options to coordinate implementation of a national large cardamom policy and programme.							
	2.1.3 Set up an institutional mechanism for the development of large cardamom in Nepal that is well represented by the public and private sectors and development agencies.			NCARP		MoAD	NARC, NCARP, CDC, DADO, FLCEN	
	2.1.4 Increase financial support for R&D, GAP dissemination, branding and testing of new product developments.			NCARP, CDC		MoAD	NARC, CDC	
	2.1.5 The taxation system on large cardamom should be reviewed and value added tax on exports should be eliminated or, if necessary, it should be imposed directly to exporters at Customs exit points.					Ministry of Finance	Ministry of Finance, MoC, Department of Commerce	
Operational objective 2.2	Improve R&D on large cardamom plants and postharvest treatment.	1		NCARP	One research committee established and funded	MoAD	NARC, NCARP, CDC, DADO, FLCEN	
	2.2.1 Establish a clear agricultural research policy for large cardamom.							
	» Set up a cardamom expert research committee formed by researchers from multiple disciplines and also involving representatives from the public and private sectors.							
	» Establish NARC (NCARP) as the technical focal point agency to coordinate all the research efforts on variety development and pest/disease management, and build partnerships with foreign research institutes specialized in spices and cardamom.							



**Strategic objective 3: Promote Black and Pink Everest Cardamom to achieve greater market penetration and diversification.**

Operational objective	Activities	Priority 1=high 2=med 3=low	Starting period 2017 2018 2019 2020 2021	Beneficiaries	Target measures	Leading national institution	Supporting implementing partners	Existing programmes or potential support
Operational objective 3.1	Develop export quality standards and a new collective trademark.							
	<p><b>3.1.1 Comply with international quality standards and develop new packaging for exports</b></p> <ul style="list-style-type: none"> <li>» <b>Benchmark analysis: investigate the (export) quality of black cardamom from Guatemala, Ethiopia and Viet Nam – and eventually also that of green cardamom from Guatemala – using specifications for such products provided by international traders.</b></li> <li>» <b>Develop standardized MRL testing; biphenyl and PAH tests that meet MRL export requirements.</b></li> <li>» <b>Facilitate the compliance of traders with HACCP standards.</b></li> <li>» <b>Improve packaging for new export markets: consider offering black cardamom seeds in 10 kg cartons, similar to what Guatemala is doing for green cardamom, or fill bags of 51.5 kg gross (= 50 kg net) for sea freight.</b></li> </ul> <p><b>3.1.2 Adopt a collective trademark for Black and Pink Big Everest Cardamoms and promote it in traditional markets and new markets with Pakistani and India diasporas.</b></p> <ul style="list-style-type: none"> <li>» <b>Register and promote the trademark in selected target markets.</b></li> <li>» <b>The brand profile has to be developed based on market research in Pakistan to clearly understand purchasing habits, market price and consumer characteristics. The aim of this market research in Pakistan would be to determine if consumers are being cheated when they purchase large cardamom from Nepal because it is actually mixed with 'duplicate' black cardamom.</b></li> <li>» <b>Develop the Black Everest Cardamom trademark to improve the visibility of large cardamom in Pakistan and India and countries with large Pakistani and Indian diasporas, primarily in the Middle East.</b> <ul style="list-style-type: none"> <li>– <b>Carry out market research in the Middle East to understand if the Pakistani diaspora keeps using large cardamom in its cooking and the existing distribution channels of spices in these countries.</b></li> <li>– <b>Conduct market studies on recipes in targeted countries to create new versions of biryani recipes for other Muslim countries.</b></li> </ul> </li> <li>» <b>Create the Pink Everest Cardamom trademark to promote large cardamom dried with modern bhattis to niche specialty spice high-end markets and specialized online stores.</b> <ul style="list-style-type: none"> <li>– <b>Analysse the chemical characteristics and flavour of Pink Cardamom.</b></li> <li>– <b>Set up a cooking research project with top chefs to integrate Pink Everest Cardamom in Indian and Pakistani recipes.</b></li> <li>– <b>Carry out an online communication campaign to promote Pink Everest Cardamom in specialized press, social media and specialized spice cuisine websites.</b></li> <li>– <b>Develop attractive packaging for final consumers.</b></li> <li>– <b>Send samples to specialized spice online stores.</b></li> </ul> </li> </ul>	1	One processing centre HACCP certified in Biratnagar	FLCEN	TEPC MoC			

Operational objective	Activities	Priority 1=high 2=med 3=low	Starting period 2017 2018 2019 2020 2021	Beneficiaries	Target measures	Leading national institution	Supporting implementing partners	Existing programmes or potential support
Operational objective 3.2	Develop exporters' capacities to diversify export markets and develop value added products.	1		Sector	New distribution and sales channels established in Pakistan through new cargo routes	FLCEN	TEPC MoC	
3.2.1 Develop new direct sales channels in traditional importing markets.	» Open cardamom sales outlets in global centres such as Delhi, Singapore and Dubai. These would help promote Nepali/large cardamom among foreign buyers and develop direct contacts among exporters and buyers. This would lower the dependency on Indian traders and the Indian market (NTIS).							
	» Other trade routes need to be investigated, such as:							
	– Exports from Birtamod to Bangladesh, then through sea freight to Pakistan.							
	– Air freight from Kathmandu through Dubai and then to Pakistan. There are currently several international airlines connecting Nepal to global trade hubs in Gulf countries such as Dubai, Abu Dhabi, or Doha (for instance: Flydubai, Jet Airways, Emirates Airways, Qatar Airways, Air Arabia).							
	» Develop specific carton packaging that can be easily shipped, similar to what is being used for green cardamom, cloves and chilli pepper: apply a food-grade 10kg box.							
3.2.2 Improve knowledge about international business practices for logistics.	» Carry out training programmes on international trade practices to become experienced in drafting all necessary export documentation: Certificate of Origin, Health Certificate, Bill of Lading, packing list, invoice, fumigation certificate, quality analysis (by external lab).	1		Traders	Training programme organized	FLCEN	KUSM TEPC	
3.2.3 Research applications for derived products and potential market opportunities.	» Develop sales of large cardamom seeds:	2		Sector	New derived products sold in the domestic market	FLCEN	KUSM TEPC	
	– Carry out a market study to identify food processors interested in seeds, such as spice grinders and mouth refresher producers.							
	– Carry out market research to identify the price, the technology required and the competition.							
	– Develop seed extraction tools and technology.							
	» Launch an R&D programme for large cardamom value added products, applications for derived products and potential market opportunities.							
	– Research the market potential for large cardamom grinds with food specialists.							
	– Research large cardamom essential oil characteristics, processing requirements and market opportunities.							
	– Research drying cardamom flowers to use the pink pigments as a natural dye; and use the dry leaves, stem and husk of the capsules to make handmade paper.							
Operational objective 3.3	Develop new trade finance mechanisms.							
3.3.1	Build partnerships with banks to develop trade finance services and introduce insurance schemes.	2		Traders	Traders certificate with private banks established	FLCEN, private banks	MoC	
	» Buyers in new export markets will most likely not consider any form of repayment, nor do they like Letters of Credit. Rather they buy FOB, or preferably CFR/CFR.							
3.4.1	Train exporters in trade finance for large cardamom exporters.	2		Traders	Training programme organized	FLCEN	Private banks, MoC	
Operational objective 3.4	Improve commercial diplomacy and negotiation for better access to potential new markets.							
3.4.2	Support visits of officials from both the public and private sectors for pre-negotiation discussions and explore market implications and prospects.	3		Sector	Target market visits to Pakistan and Saudi Arabia	FLCEN	TEPC	



Photo: ITC

# IMPLEMENTATION MANAGEMENT

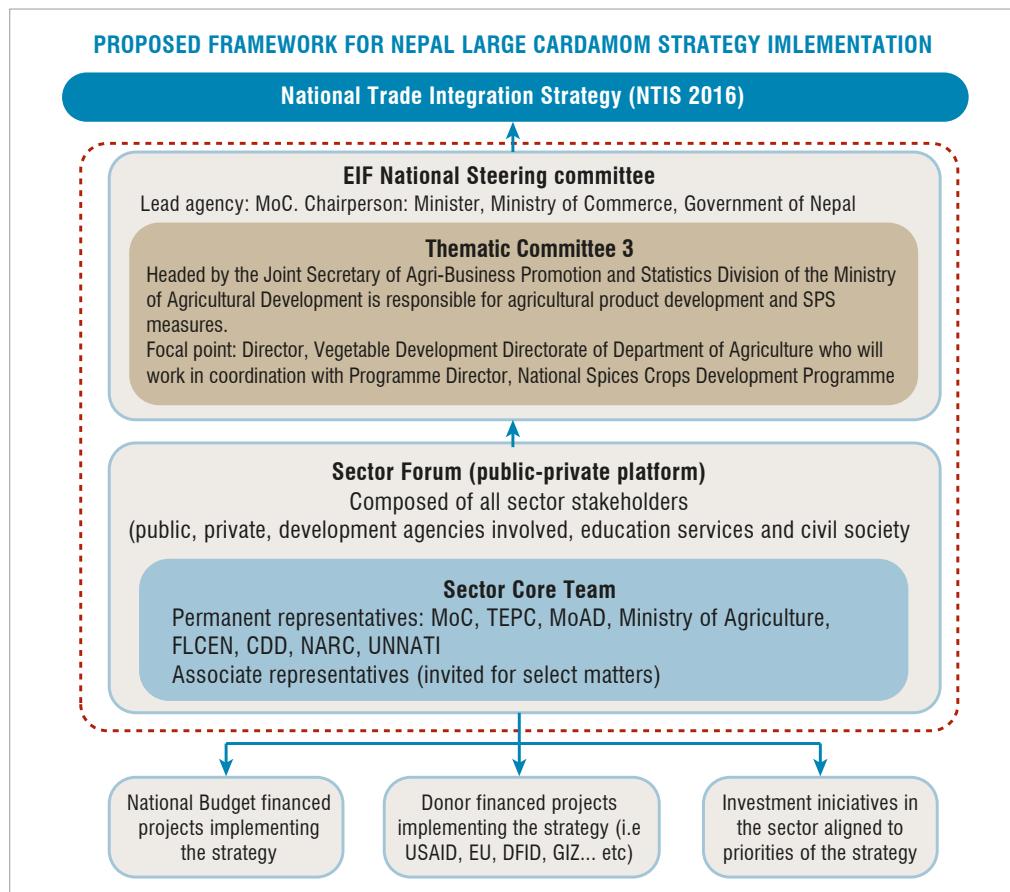
The comprehensive Large Cardamom Sector Export Strategy of Nepal endeavours to generate the conditions for a favourable expansion of the sector so as to contribute to overall socioeconomic development. Nevertheless, the Strategy in and of itself is not enough to ensure the sector's sustainable development. Such development will require the elaboration and coordination of various activities. While the execution of these activities will allow for the Strategy's targets to be achieved, success will depend on the ability of stakeholders to plan and coordinate actions in a tactical manner. Activities must be synchronized across the public sector, private sector and non-governmental organization communities in order to create sustainable results.

The implementation mechanism of NTIS 2016 has six Thematic Committees working under the EIF National Steering Committee chaired by Honorable Minister of Commerce. Thematic Committee 3 headed by the Joint

Secretary of Agri-Business Promotion and Statistics Division of the Ministry of Agricultural Development is responsible for agricultural product development and SPS measures. The focal point for the development of large cardamom is the Director, Vegetable Development Directorate of Department of Agriculture who will work in coordination with Programme Director, National Spices Crops Development Programme.

Indeed, the Large Cardamom Sector Export Strategy is not the strategy of any specific institution; rather it is the strategy of Nepal, and to ensure its success it is necessary to foster a conducive environment and create an appropriate framework for its implementation. The following section presents some of the key conditions considered necessary for the Strategy to be effectively implemented and successfully achieve self-sustainability and long-lasting benefits for Nepal.

Figure 22: Proposed structure for Strategy implementation



## ESTABLISH AND OPERATIONALIZE A PUBLIC AND PRIVATE COORDINATING BODY, SECTOR FORUM AND ITS SUBSIDIARY ORGAN, SECTOR CORE TEAM

A key criterion for the success of the Large Cardamom Sector Export Strategy is the sector's ability to coordinate activities, monitor progress and mobilize resources for the implementation of the Strategy. It is recommended that the country establishes an independent **sector forum** for public–private deliberations that acts in an advisory capacity to the Government and the private sector over issues related to or affecting the sector and its Strategy.

### Sector forum and sector core team

The formal dialogue platform will require high-level involvement by trade support network members (public and private) because their role is crucial and will impact the effectiveness with which the Strategy is implemented. Likewise, the ability of the private sector to provide inputs to the Strategy implementation process will significantly influence the success of the Strategy. The Strategy's PoA activity 2.1.3 establishes an institutional mechanism for the development of large cardamom in Nepal that is well-represented by the public and private sectors and development agencies.

The stakeholders group consulted during the Strategy design process comprised a panel of representatives of key institutions, including ministries and trade support network members, as well as representatives of the private sector. As such, once its mandate is appropriately adjusted, this group of stakeholders, together with additional human resources as required, is best positioned to serve as the public–private platform, **the sector forum**, responsible for the coordination of Strategy implementation. It will also be required that a nominated **sector core team** coordinates, monitors and mobilizes resources for implementing the Strategy.

The creation of the sector forum and sector core team are in line with NTIS 2016. The Joint Secretary of Commerce is the Focal Point for the large cardamom sector.

The main functions of the public–private platform, or **sector forum**, should be the following:

- i. Act as a consultative group pertaining to the cardamom sector, enabling the private sector and government representatives to identify priority issues;
- ii. Coordinate and monitor the implementation of the Strategy by the Government, private sector, institutions or international organizations so as to ensure Strategy implementation is on track;

- iii. Identify and recommend allocation of resources necessary for the implementation of the Strategy;
- iv. Elaborate and recommend revisions and enhancements to the Strategy so that it continues to best respond to the needs and long-term interests of the sector;
- v. Propose key policy changes to be undertaken based on Strategy priorities and promote these policy changes among national decision makers.

As discussed above, the public–private platform should be supported by a **sector core team** to complete the operational work related to implementation management of the Strategy. The core responsibilities of the sector core team should be to:

- a. Support and organize regular meetings of the sector forum (public–private platform);
- b. Monitor the progress and impact of Strategy implementation;
- c. Coordinate Strategy implementation partners;
- d. Mobilize resources to implement the Strategy in line with NTIS 2016.

Specific tasks falling under these broad areas of activities include:

- Formulate project proposals, including budgets, for implementation of activities of the Strategy;
- Develop annual and twice-yearly workplans for approval by the sector forum (public–private platform);
- Collect information from project implementation and prepare regular monitoring reports to be submitted to the sector forum, the EIF National Steering Committee, the NTIS National Implementation Unit and Donor Facilitator;
- Advocate in favour of the Strategy to public and private partners, and development partners;
- Execute any other tasks required by the sector forum.

### NTIS 2016 Implementation mechanism

The implementation mechanism of NTIS 2016 has six Thematic Committees working under the EIF National Steering Committee chaired by Honorable Minister of Commerce. Thematic Committee 3 headed by the Joint Secretary of Agri-Business Promotion and Statistics Division of the Ministry of Agricultural Development is responsible for agricultural product development and SPS measures. For large cardamom, the focal point for its development is the Director, Vegetable Development Directorate of Department of Agriculture who will work in coordination with Programme Director, National Spices Crops Development Programme.

## BUILD CAPACITIES REQUIRED FOR MANAGING THE IMPLEMENTATION

Even with institutional structures in place, Nepal and its Strategy implementation framework will not be able to effectively fulfil their assigned functions without suitable capacity development interventions.

The ability and skills of the technical committee and sector core team need to be sufficient to ensure effective management of Strategy implementation. Hence, the sector core team and its partners should have knowledge of the ideas, challenges and best practices behind the Strategy when monitoring implementation progress, assessing overall impact, mobilizing additional resources, programming and communicating results. Without such skills they will not be in a strong position to assume their respective oversight and management responsibilities for Strategy implementation.

## PRIVATE SECTOR SUPPORT AND PARTICIPATION

The private sector should benefit from Strategy implementation through improved productive capacities, reduced costs of doing business, facilitated administrative procedures, enhanced access to finance, etc. However, the private sector clearly expressed during the Strategy design process its willingness to contribute, directly or in partnership with public institutions, to the implementation of the Strategy. Their implementation efforts can range from providing business intelligence to institutions to contributing to development projects, establishing processing and transformation units, advocacy, etc. In brief, the private sector's practical knowledge of business operations is essential to ensuring that the activities of the Strategy are effectively implemented and targeted.

## SENSITIZATION OF IMPLEMENTING INSTITUTIONS TO BUILD OWNERSHIP

The key implementing institutions detailed in the PoA need to be informed of the content of the Strategy and the implications for their 2017–2021 programming. This sensitization is essential to building further ownership and it provides institutions with the opportunity to review the PoA in order to confirm the activities they can implement immediately, in both the medium and the long term. This programming approach will permit better resource allocation within the responsible agencies. This allocation can be formalized by integrating the activity of the Strategy into the programme planning of the institution. While the financial dimension is required, the human resource element is no less important.

## FINANCIAL RESOURCE MOBILIZATION FOR IMPLEMENTATION

While resource mobilization is only part of the solution, it plays a crucial and indispensable role in supporting Strategy implementation. An integrated resource mobilization plan should be elaborated as soon as the Strategy is adopted. Resource mobilization involves planning the sequencing of communications with donors, project design, project proposals/applications, and resource collection and management. This should facilitate, leverage and strengthen the impact of diverse sources of finance to support sustainable and inclusive implementation, including national resources, development aid and private investment.

- **National resources through direct budget and support programme:** The Government will need to validate defined minimum budget support towards the implementation of the Strategy. Such support for the Strategy's activities will demonstrate the Government's commitment to the initiatives.
- **Alignment of donors' support and interventions with the Strategy:** The sector forum and the authorities will need to capitalize on the significant momentum gained as part of the Strategy design process and leverage it for smooth and efficient implementation. International development agencies can use the Strategy as the logical framework for their programmes, as they will surely benefit from its favourable conditions for operation (i.e. political endorsement, private sector buy-in and improved collaboration with national institutions). The PoA of the Strategy should serve the sector forum as well as national institutions to improve communication and facilitate the negotiation, planning, coordination and evaluation of commitments made in the context of development aid, in particular through the development of programmes and project proposals aligned with the priorities of the Strategy.
- **National and foreign investment:** The current Strategy design core team is composed of representatives of national institutions, the trade support network and the private sector. If the sector forum is created and becomes the coordinating body of the Strategy, the Strategy should benefit from a solid channel of communication capable of conveying reliable information to companies about export-related opportunities in the industry, and in turn capable of communicating to the Government the needs that investors have identified in order to operate successfully. Investment in Nepal could serve as a valuable driver of export development. Even so, it must be targeted at specific prospects in order to benefit the industry's development as detailed in 'the way forward' section of this Strategy.



Photos: ITC, ITC consultation in Birtamod

# APPENDIX 1:

## LIST OF PARTICIPANTS IN THE PUBLIC/PRIVATE CONSULTATIONS

	Name of institution	Name
1	Trade and Export Promotion Centre	Mr. Bimal Nepal
2	Ministry of Agricultural Development	Dr. Pradyumna Raj Pandey
3	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Nirmal Kumar Bhattarai
4	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Rajendra Ghimire
5	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Dinesh Mittal
6	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Om Krishna Bimali
7	Federation of Large Cardamom Entrepreneurs of Nepal	Ms. Parbati Bimali
8	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Deepak Nepal
9	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Indra Bindal
10	Federation of Large Cardamom Entrepreneurs of Nepal	Mr. Subash Bhattarai
11	UNNATI	Dr. Biswo Bandhu Raj Singh
12	UNNATI	Dr. Tej Bahadur Thapa
13	Jirmale Farmer	Mr. Dev Raj Khanal
14	Jirmale Nursery	Mr. Bed Bahadur Rai
15	District Agriculture Development Office	Mr Rajendra Kharel
16	Entrepreneur, Panchthar	Mr. Dharma Odari
17	Entrepreneur, Panchthar	Mr. Bal Mani Baral
18	CAL, Farmer, Fikkal, Illam	Mr. Laxmi Raman Khatiwata
19	Nepal SBI Bank, Birtamod	Mr. Shiva Dahal
20	International Trade Centre	Mr. Olivier Marty
21	International Trade Centre	Mr. William Van Noort
22	International Trade Centre	Mr. Murari Prasad Gautam
23	Kathmandu University	Mr. Dipendra Sanjyal
24	Kathmandu University	Ms. Nisha Pote
25	Trade and Export Promotion Centre	Mr. Rajendra Man Singha

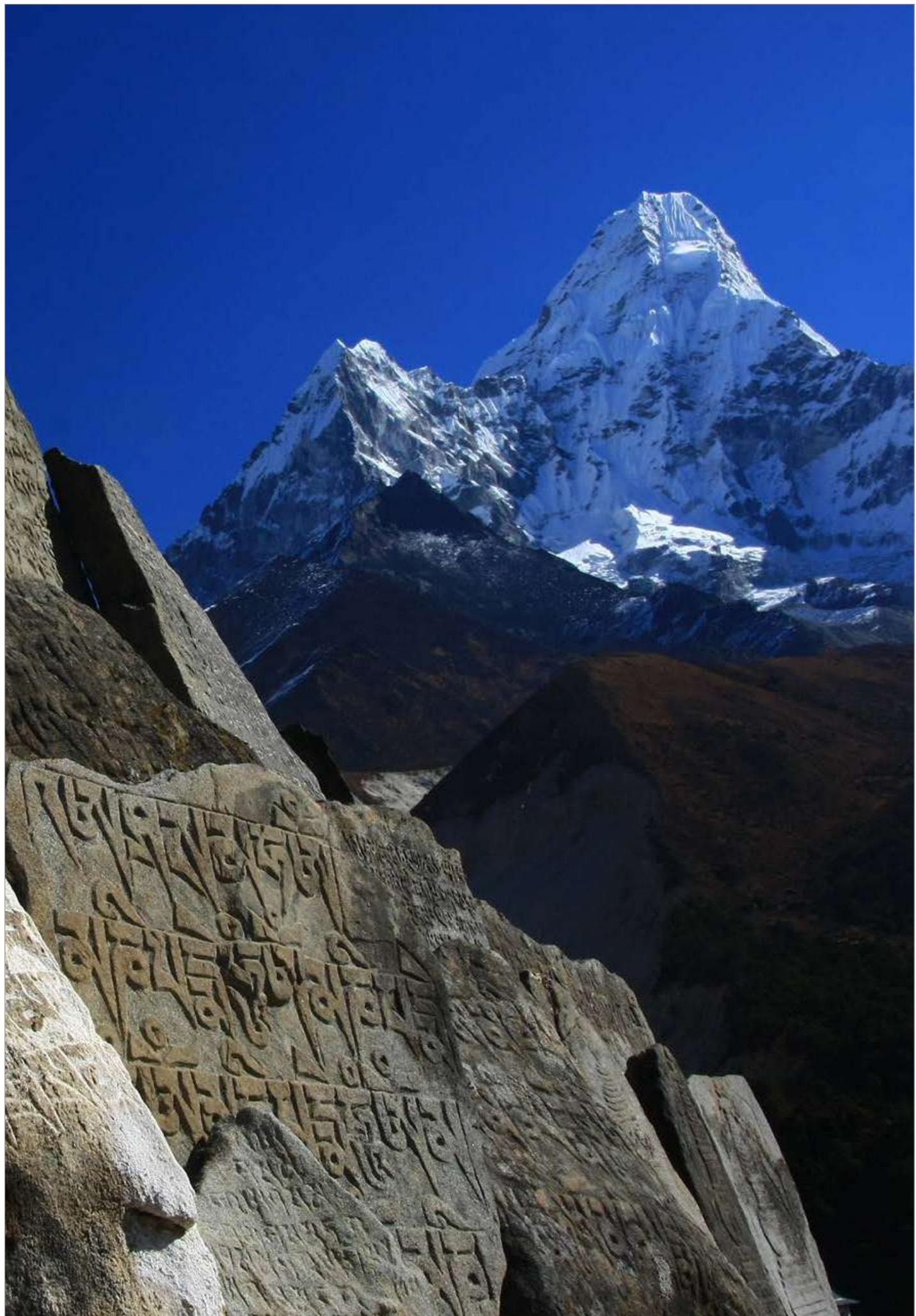


Photo: Pixabay (cc1.0), nepal-1972518.jpg

# REFERENCES

Afram, Gabi G.; Pero, Angelica Salvi Del (2012). *Nepal's investment climate: leveraging the private sector for job creation and growth*. Directions in development; private sector development. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/343221468157793055/Nepals-investment-climate-leveraging-the-private-sector-for-job-creation-and-growth>

Adhikari, P. and Sigdel, K. (2015). Activities of Cardamom Development Centre and DoA in Large Cardamom Development. Chaudhary. R. and Prasad Vista, S. (Eds.), *Proceedings of the Stakeholders Consultation Workshops on Large cardamom Development in Nepal held in April 20,2015*. Commercial Crop Division, NARC, Khumaltar, Nepal.

Adhikari P. (2017). Fikkal, History of large Cardamoms Farming and Hem raj Regmi, MoAD, Large Cardamom Production in Nepal and Its other Aspects (in Nepali), Alainchi'. Smarika. *Large Cardamom Development Centre, Federation of Large Cardamom Entrepreneurs of Nepal*.

Bimali, O. (2017). 'Alainchi Khetijo Bikas', Alainchi'. Smarika. *Federation of Large Cardamom Entrepreneurs of Nepal*.

Central Bureau of Statistics and Nepal Planning Commission Secretariat (2012). National Population and Housing Census 2011: National Report. Kathmandu

European Food Information Council (2014). Food Traceability: Cornerstone of EU food safety policy. Retrieved from [www.eufic.org/article/en/artid/Food\\_traceability\\_cornerstone\\_of\\_EU\\_food\\_safety\\_policy/](http://www.eufic.org/article/en/artid/Food_traceability_cornerstone_of_EU_food_safety_policy/)

European Spice Association (2016). General Assembly, Crop Reports. Albarracin, Belgium,

FAO of the United Nations (2014). Youth and Agriculture: Key Challenges and Concrete Solutions.p.84. Retrieved from <http://www.fao.org/3/a-i3947e.pdf>

FAO of the United Nations (2010)(a). Implications of Climate Change for Agriculture and Food Security and Adaptation Priorities in Nepal.

FAO of the United Nations (2010)(b). A Rapid Situation Assessment on Agriculture and Migration in Nepal. P.19.

FAO of the United Nations (2010)(c). Integration of Gender in Agriculture: An Analysis of Situation. Nepal, pp. 3, 5, 8.

Government of Nepal, Ministry of Labour and Employment. Labour Migration for Employment, A Status Report for Nepal: 2014/2015, p. 22.

Herms S. (2015). Business Opportunities Report Spice #6 in the series written for the Ethiopian Netherlands business event 5–6 November 2015, Rijswijk, The Netherlands.

Honsberger, A. (2015). Professionals In their Field: Women Vegetable Farmers in Nepal FAO (2010). P. 31

International Fund for Agricultural Development. The Changing Role of Women in the Economic Transformation of Family Farming in Asia and Pacific, p. 3

International Labour Organization (2014). Regional commissioners' youth employment forum in Tanzania. Retrieved from [http://www.ilo.org/addisababa/countries-covered/tanzania/WCMS\\_321400/lang--en/index.htm](http://www.ilo.org/addisababa/countries-covered/tanzania/WCMS_321400/lang--en/index.htm).

International Trade Centre (2016). Trade Map Database. Available from <http://www.trademap.org/Index.aspx>.

International Trade Centre (2015). India's Duty Free Tariff Preference Scheme for Least Developed Countries: A Business Guide.

International Trade Centre and Physikalisch-Technische Bundesanstalt (2011). Export Quality Management: A Guide for Small and Medium-Sized Exporters. 2nd edition, p. 11.

KC, Sony; Uperti, B.R.; and Subedi, B.P. (2016). We know the taste of sugar because of cardamom production': Links among Commercial Cardamom Farming, Women's Involvement in Production and the Feminization of Poverty. *Journal of International Women's Studies*, p. 192. Retrieved from: <http://vc.bridgew.edu/jiws/vol18/iss1/13>.

Ministry of Health and Population (2012). National Survey on Adolescents and Youths



Photo: ITC, Large cardamom seedling

Munankami, R. and Gautam, M. (1988). International Market Study on Large Cardamom (Field Survey Report). *Ministry of Agriculture*, Department of Food and Agriculture Marketing Services and Trade Promotion Centre 2045.

NARC, Disease-Free Large Cardamom Farming Technique (in Nepali), Handbook.

Panday, D. (2012 September 13). Reshaping Youth in Nepali Agriculture. *Young Professionals for Agricultural Development, YPAR*, Retrieved from <http://www.ypard.net/2012-september-3/reshaping-youth-Nepali-agriculture-0>.

Pereznieta, P. (2016). Rapid Review of Programmes for Women and Girl's Economic Empowerment. *EPS-PEAKS*. pp.1,2.

SANDEE (2014). Policy Brief, The Impact of Climate Change on Agriculture – A Case Study from Nepal. Number 79-14, p.2

Singh, A.I. and Pothula A.K.(2013). Postharvest Processing of large cardamom in the Eastern Himalaya. *Mountain Research and Development*. p 453-462.

SOFA Team and Doss C (2011). The Role of Women in Agriculture. *ESA Working Paper No. 11-02*, p. 2. Retrieved from <http://www.fao.org/docrep/013/am307e/am307e00.pdf>.

The World Bank (2016)(a). Nepal Development Update, May 2016: Remittances at Risk. World Bank, Kathmandu. Retrieved from <https://openknowledge.worldbank.org/handle/10986/24663> Licence: CC BY 3.0 IGO.

The World Bank (2016)(b). Could Trade and FDI be the Key to Unlocking Nepal's Potential? New Report Suggests 'Yes'. *The World Bank*, Retrieved from <http://www.worldbank.org/en/news/feature/2016/07/12/could-trade-and-fdi-be-the-key-to-unlocking-nepals-potential>

[www.worldbank.org/en/news/feature/2016/07/12/could-trade-and-fdi-be-the-key-to-unlocking-nepals-potential](http://www.worldbank.org/en/news/feature/2016/07/12/could-trade-and-fdi-be-the-key-to-unlocking-nepals-potential)

The World Bank (2013). Promoting Agribusiness Innovation in Nepal: Feasibility Assessment for an Agribusiness Innovation Centre, p. 77.

UNNATI (2016). Large Cardamom Value Chain Analysis for Market competitiveness in UNNATI's Working Districts. Tej Thapa.

United States Food & Drug Administration (a). Filing Prior Notice. Retrieved from <http://www.fda.gov/Food/GuidanceRegulation/ImportsExports/Importing/ucm2006837.htm>

United States Food & Drug Administration (b). Imports Under FSMA. Retrieved from <http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm257980.htm>

United States Food & Drug Administration (c). Chemical Contaminants, Metals, Natural Toxins, Pesticides Guidance Documents & Regulations. Retrieved from

<http://www.fda.gov/Food/GuidanceRegulation/Guidance-DocumentsRegulatoryInformation/ChemicalContaminantsMetalsNaturalToxinsPesticides/default.htm>

Yadav, P., Shrestha, K. and Mandal, D. (2015). Present Situation and Future Strategies for Research and Development of Large Cardamom in Nepal. Chaudhary, R. and Prasad Vista, S. (Eds.), *Proceedings of the Stakeholders Consultation Workshops on Large cardamom Development in Nepal held in April 20, 2015*. Commercial Crop Division, NARC, Khumaltar, Nepal. Retrieved from <http://narc.gov.np/publicaton/pdf/proceedings/Proceedings%20of%20the%20Large%20Cardamom.pdf>



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