

# Strategic Guidance for Value Chain and Market Development of Agriculture Products in Sudurpaschim and Karnali Provinces

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Submitted to:

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## Acronyms and Abbreviations

AD	Anno Domini
ADS	Agriculture Development Strategy
CBS	Central Bureau of Statistics
CSO	Community Support Organization
DADO	District Agriculture Development Office
DCA	Dan Church Aid
DDC	Dairy Development Corporation
DLSO	District Livestock Service Office
EDC	Equality Development Centre
FEDO	Federation of Dalit Organization
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
HVAP	High-Value Agriculture Project
ICT	Information and Communication Technology
INGO	International Non-government Organization
LIBIRD	Local Initiatives for Biodiversity Research and Development
MAPs	Medicinal and Aromatic Plants
MDO	Malika Development Organization
MoF	Ministry of Finance
MSP	Multi-Stakeholder Platforms
NARC	National Agriculture Research Council
NGO	Non-governmental Organization
NNSWA	Nepal National Social Welfare Association
NTFPs	Non-timber Forest Products
PM-AMP	The Prime Minister Agricultural Modernization Programme
RDS	Rural Development Society
SDGs	Sustainable Development Goals
SOSEC	Social Service Centre
SWOT	Strength Weakness Opportunities and Threats
ToR	Terms of Reference
TWUC	Tharu Women Upliftment Centre
VACDEP	Value Chain Development Programme



## Executive Summary

Agriculture sector, expected to contribute 27.6% of the GDP in FY 2075/76, is the backbone of the Nepalese economy. The Nepalese farming system is basically subsistence-oriented and is characterized by low productivity and a weak value chain. Although the agriculture sector is moving towards commercialization with the market-based approach in the recent years, the pace is excruciatingly slow and challenging. The Government of Nepal (GoN) formulated and endorsed the Agriculture Development Strategy (ADS) in 2015. The ADS is expected to guide the agriculture sector to become self-reliant, sustainable, competitive and inclusive. In the absence of proper planning and effective implementation, however, most of the initiatives are not able to deliver the intended output. In order to increase the production and productivity of the agriculture sector, the Dan Church Aid (DCA) Nepal is working to strengthen the value chains for selected agriculture commodities. The working districts of the DCA are Doti, Achham, Bardiya, Kanchanpur and Dailekh. The selected agriculture commodities for this study are fresh vegetables, potato, ginger, turmeric, milk and onion. Other products that has been identified as potential products for the value chain are chili from Bardiya and Soyabean from Doti.

The main objective of the study was to develop a value chain and market development strategy for the selected agriculture commodities in Sudurpaschim and Karnali Provinces for the DCA. This strategy, complementing the ADS, provides guidance to the DCA to design project activities for different nodes of the value chain: input supply, production, processing, marketing and consumption. This strategic document can serve as a common document to work with newly elected local and provincial governments. The methodologies used for the study are review of related policies, research studies and literatures, consultations with stakeholders and value chain actors, and identification of pocket areas for selected commodities and exploring market.

The study finds that the value chains of almost all selected commodities are weak. Generally, it was found that most of the farmers are producing in a conventional way so production volume of commodities is insufficient to meet even the local demand. Nevertheless, few farmers have started farming on a commercial scale. With proper study of market demand, marketing and brand promotion and facilitation for market linkages between farmers and various markets, production and other required infrastructure and services can be planned accordingly. For example, the amount of fresh vegetables produced is consumed locally which shows that there exists a good market for vegetables within the district and have also ample of opportunities to grab the market during off season in terai. In cases of potato, onion, soyabean, ginger and turmeric there are few evidences of being traded intermittently to other districts which shows there is opportunity to establish linkages between farmers, local traders and wholesalers. In the other hand, milk is the only product which has established market chain because of prior institutional tie up with DDC and large private dairy industry.

There are a number of issues and challenges in the commodities value chains. Most of the farmers hesitate to switch from traditional farming to commercial farming. They give the first priority to cereal crops and then only go for commercial high-value crop production. Another challenge is the quality of products in few products such as adulteration done in turmeric powder. Moreover, number of collection centers is not enough and wherever present, it was found inefficient due to weak governance and lack of trust among actors. Likewise, unavailability of quality inputs, poor technical knowledge, lack of transportation facilities and cold storages, overburden of agriculture works for women, impact due to climate variability are some of the challenges in the value chain.

In order to strengthen the value chain of selected commodities, DCA should carry out both short and long-term interventions. The short-term interventions proposed include encouraging agrovets to sell only certified seeds and quality fertiliser, scaling out of women-friendly agri-tools, and providing irrigation support and soil testing facilities. In addition, the DCA should work for minimizing post-harvest losses, promoting the collective marketing, capitalizing on the off-season period in the plains, providing business literacy so that farmers know the cost of production, and organizing multi-stakeholder platforms at regular intervals. Likewise, there are a few long-term interventions that the DCA can initiate, for instance, linking farmers to financial institutions to access loans for commercial cultivation, establishing cold storages, Linking pocket areas through road corridor approach, and collaborating with municipalities to leverage resources to address the interventions identified by the study for livelihood upliftment of targeted beneficiaries.



# 1. INTRODUCTION

The Global Food Security Index 2015 ranks Nepal 85th among 109 countries in the world in food security status (LWF Nepal, 2017). Smallholder farmers are the backbone of Nepal's economy. Considering this, policy-makers are increasingly focusing on the development of agro-industries with emphasis on promoting effective agro-value chains to expand the role of the agriculture sector in economic growth and poverty reduction. Agriculture

Agriculture is considered as the major contributor (27.6% of GDP) to food security and livelihoods in Nepal, but it has been badly impacted by climate change and frequent disasters.

is considered as one of the means to GDP contribution (27.6% of GDP) along with contribution to food security and local livelihoods in Nepal, but it has been badly impacted by climate change and frequent disasters (MoF, 2018). Nearly, 80% of Nepal's population and 60% of

its labour force are still dependent on agriculture (CBS, 2014). However, the agriculture sector is largely subsistence and traditional and is characterized by a weak value chain. Moreover, available Nepalese farmers have little knowledge of improved technologies; lack capacity to access new technologies if any; lack market information; lack basic infrastructure; and have weak market access. Farmers are not getting appropriate returns on their investments. To address this situation, the Government of Nepal (GoN) and many development agencies are promoting the agriculture sector for improving the livelihoods of rural poor. In the absence of proper planning, however, most of the initiatives are not able to deliver the intended outcomes. Implementation of project activities without proper pre-study and lack of capable human resources may result in weak performance. Dan Church Aid (DCA) Nepal aims to improve the livelihoods of rural communities by increasing income and employment opportunities by strengthening the



value chains of selected agriculture commodities in its project districts.

DCA is working in Dailekh in Karnali Province and Doti, Achham, Bardiya, and Kanchanpur in Sudurpashchim province. The priority commodities are potato, vegetables, in Doti; ginger, turmeric and vegetables in Achham; Dairy in Bardiya; and onion in Kanchanpur. Nevertheless, soyabean in Doti and Chilli in Bardiya are other potential commodities. Poverty, illiteracy, health-related problems and migration are some of the major problems in the DCA working area. The then Mid and Far Western Region comprised 23% of Nepal's population and 42% of total area. Food poverty is the highest in the then Far West (39%), while non-food poverty is the highest in the then Mid-West (46.5%). The causes of food insecurity in this region basically include lack of easy access to roads, technology/irrigation and preference of people on rice above other food grains. Labour migration is an important livelihood strategy.

These regions received high amount of remittance collection from India.

The lower economic quartile of the people in the region are smallholder farmers, landless and land-poor, migrants/returnees, and minority ethnic groups or castes, such as Dalit and communities like Badi. Even within such communities, female-headed households are the most affected. Issues of food security and economic empowerment disproportionately affect women because of their gender roles at the household level. Though women play an important role in agricultural production, they lack access to and control over productive resources like land and the income generated through the sale of agro-products. Likewise, there is a growing trend of outmigration of the youth due to limited employment opportunities in the village. This has significantly increased the workload of women in agriculture sector implying a feminization of agriculture.



## 1.1 Rationale

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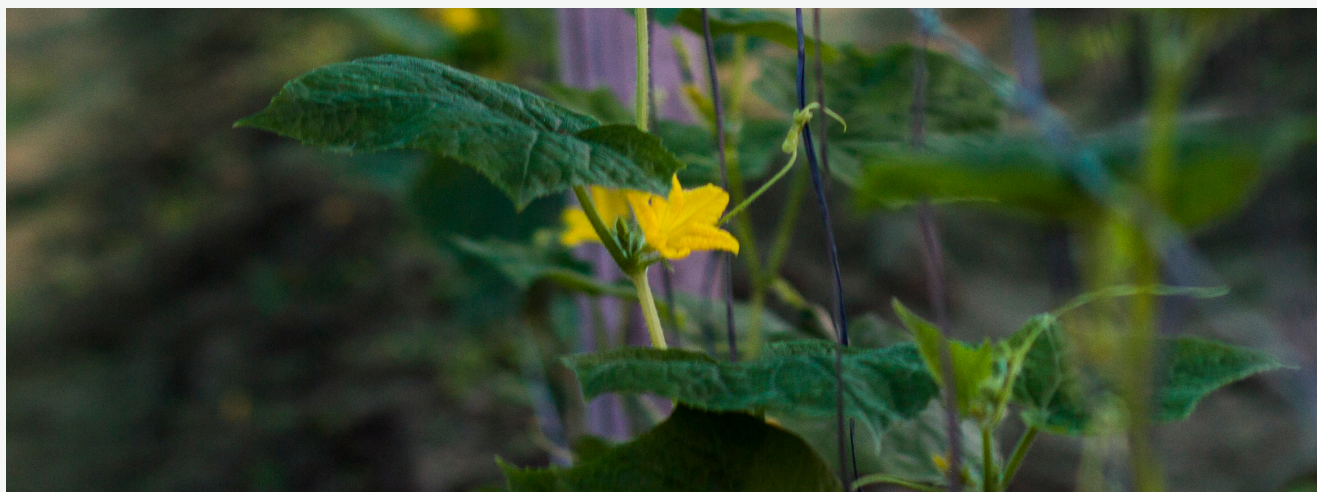
The western part of Nepal is lagging far behind in terms of human development index such as gender inequality index, literacy rate and poverty rate. Livelihoods options are limited and agriculture serves as the main means of livelihoods. However, the state of commercial production, processing and marketing is relatively poor. As a consequence, the share of agricultural crops in household income is low, women bear unequal workload burden, forcing seasonal migration of the youth to India. This requires systematic interventions to curb the root causes of the situation. As a part of the systematic intervention, this strategic guideline is prepared.

Several research works have shown that, as an effect of neo-liberal market economy, farmers and small traders have not been able to compete or retain in agriculture business for long. They have poor access to means of production, poor understanding of market dynamics and are often unorganized in production and marketing activities which ultimately make them uncompetitive. In such context, this document provides strategic guidance to DCA and its implementing partners on how to protect small farmers and traders, and remove socioeconomic and institutional barriers to women, Dalits and minority communities through their increased access to means of production, capturing new opportunities in value

addition and increased access to market, along with an understanding of market dynamics.

This strategy is developed to contribute on the objectives of the Agriculture Development Strategy (ADS) 2015. The ADS, for the first time, introduced the Value Chain Development Programme (VACDEP) as one of its four flagship programs. This strategic document also provides a framework to work with newly elected local and provincial governments. The local and provincial governments have prioritized agriculture as a means to generate employment and sustain the local economy. They further aim to commercialize and modernize agriculture, putting emphasis on high-value agriculture. Beyond that, it is relevant for exploring potential support to develop capacity of stakeholders, including government institutions, co-operatives and the private sector.

Furthermore, this contributes to meet the national goal of 'prosperous and happy Nepal' and Nepal's international commitments, i.e. achieving sustainable development goals (SDGs). This strategy has direct linkage with the SDGs: no poverty (G1), zero hunger (G2), gender equality (G5), decent work and economic growth (G8) and reduced inequality (G10).





## 1.2 Purpose of the study

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The main objective of the study is to develop a value chain and market development strategy for selected agriculture commodities from selected districts in Karnali and Sudurpaschim province and Nepal for DCA Nepal. The specific objectives are:

- To identify areas of engagement and contribution by DCA Nepal in the value chain and market development at local, provincial and federal levels
- To recommend to the DCA doable actions in strengthening the value chains and marketing of prioritized agricultural commodities.

## 1.3 Study framework

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As a guiding definition for common understanding, we defined 'value chain a combination of a full range of activities required to bring a product or service from conception to the final consumer (Haggblade et al., 2012). This provides a visual framework for understanding the structural connective issues linking small farmers to input suppliers, processors, traders and final consumers (ibid). This is a practical approach rooted in the real world of production and marketing. Figure 1 illustrates study framework. This study is based on the desk review and intensive field consultations with the stakeholders, such as government officials, agriculture agencies, I/NGOs, civil societies, lead farmers, local traders in the selected study districts,

This study provides sufficient understanding of the value chain dynamics of selected agricultural commodities in the project area; identifies the key strategic intervention areas and recommends possible activities for strengthening the selected value chains in particular and the agriculture sector in general. Similarly, the study also highlights the involvement of various actors and stakeholders, including the private sector, in identified issues, apart from the challenges and opportunities in the value chains from the local level to municipalities and provincial levels.

viz Doti, Kanchanpur, Achham and Bardiya. Document review was one of the major study tools. DCA's documents related to livelihoods, relevant research and policy documents were reviewed. Participatory value chain mapping of selected commodities was the major entry point to find out the situation revealing key actors and enablers involved in the chain, their functional roles, horizontal and vertical relations, boundaries of the system and flow of goods and services.

A SWOT analysis of the selected value chains was further carried out. Interaction was also conducted with key stakeholders including government officials, representatives from



implementing agencies, lead farmers and local traders soliciting comments and suggestions. The discussions with officials largely focused on existing plan, future programme, policy, priority sector and area, investment (agriculture), problems and challenges. Guided by this, the study analyzed the complementary roles of the local and provincial governments in strengthening the value chain and market. The study has interacted with all the value chain actors supported by DCA, however, it could not cover the “Ground Peanut” value chain as

Dailekh was not present in the sample study district. The findings of stocktaking and summary of the existing information through consultation has been used as inputs for DCA livelihoods dimensions for value chain development.

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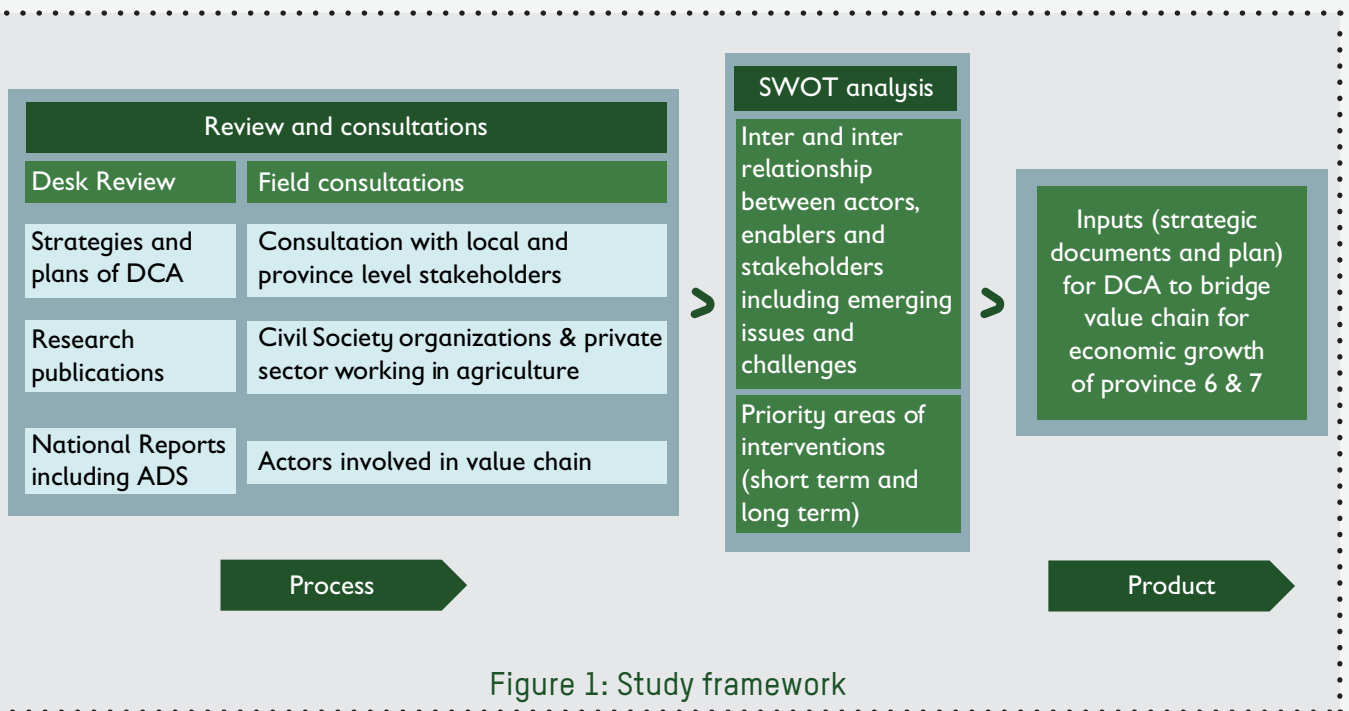


Figure 1: Study framework





## 2. REVIEW OF EXISTING POLICY AND PROGRAMMES

### 2.1 Agriculture development strategy

The GoN has developed and endorsed Agriculture Development Strategy (ADS) in 2015. The ADS is expected to guide the agriculture sector of Nepal until 2035 AD. It has envisioned agriculture sector as “[a] self-reliant, sustainable, competitive, and inclusive agriculture sector that drives economic growth and contributes to improved livelihoods and food and nutrition security leading to food sovereignty.” It has developed indicator-based targets to monitor the progress towards the vision during implementation. For instance, it has envisioned increasing percentage of farm land owned by women or joint ownership to 50% by 2035 from the current 10%. It has further envisaged transforming Nepal’s farm sector in the face of common challenges such as climate change, low productivity and poor market access. The ADS aim to boost the average annual growth rate to

5% from the current 3% for the agriculture sector and increase land productivity to US\$5,000 per hectare from the current US\$1,600.

The ADS has identified the Value Chain Development Programme (VADEP) as a methodological approach to achieve these results by developing competitive and inclusive value chains for commercially viable agricultural commodities.

The Agriculture Development Strategy aim to boost the average annual growth rate to 5 percent from the current 3 percent for the agriculture sector and increase land productivity to US\$5,000 per hectare from the current US\$1,600.

## 2.2 GESI strategy

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The Ministry of Agriculture and Livestock Development (MoALD) developed its Gender Equality and Social Inclusion (GESI) strategy in 2006, which aims to reduce gender gaps at institutional and farm levels while adopting positive discrimination in favour of the farmers who are deprived socially and economically. This strategy has set three strategic plans: commercialization, irrigation and engagement with local government units. This strategy is aimed at enhancing women participation in all institutions, ensuring market for women farmers, facilitating access to market information and technology for women farmers, and enhancing women farmers’

participation in high-value cash crop production. Similarly, the strategy emphasizes women’s access to irrigation facilities and provides efficient water use technology to increase production. It encourages women to engage with local government units and leverage resources for women’s social and economic empowerment.

This strategy has set three strategic plans: commercialization, irrigation and engagement with local government units.

## 2.3 Prime minister agricultural modernization programme

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The GoN has been implementing the Prime Minister Agricultural Modernization Programme (PM-AMP) since 2015/16. This programme aims to achieve a modernized, industrialized, commercialized, sustainable and self-reliant agriculture sector. It covers all seventy-seven districts of the country and engages four different modes: Pockets (coverage >10 ha), Blocks (coverage >100 ha), Zones (coverage >500 ha) and Super Zone (coverage >1000 ha). The responsibility for blocks and pockets is handed over to local governments, while the MoALD has set up district units for zones and super zones.

Relating this with the DCA-covered districts, there are 50 pockets in Bardiya, 15 in Dailekh, 10 in Achham, 45 in Kanchanpur and 15 in Doti. Similarly, in case of blocks, fish and banana blocks are in located in Bardiya, citrus fruits and maize/maize

seeds in Dailekh; potato and fresh vegetables in Achham; ginger/turmeric and potato in Doti; and rice and fish in Kanchanpur (as of FY 2073/74). Similarly, altogether 69 zones have been established in the country and, among them, two zones are in the DCA working area: potato in Achham and rice in Kanchanpur. Overlapping with DCA in Dailekh and Achham districts, the High-Value Agriculture Project (HVAP), implemented by the MoALD, is working in the value chain development of ginger/turmeric and off-season vegetables and vegetable seeds.

This programme aims to achieve a modernized, industrialized, commercialized, sustainable and self-reliant agriculture sector.



## 2.4 Government roadmap for agriculture transformation

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The MoALD has developed a 52-point roadmap for agricultural transformation in 2018 (Bikram Sambat 2075). These provide the basis for the government to plan activities and budget at federal, provincial and local levels for agricultural development. The key areas of intervention include review of existing policies, structures, and processes, promotion of agriculture research and knowledge sharing mechanism (develop National Agriculture Research Council [NARC] into a deemed university), facilitate establishment of agro-livestock-based enterprises, establish cold stores, adopt corridor approach (11 corridors) for vegetables, fruits and other crops with comparative advantage. Similarly, it suggests the establishment of an integrated

agricultural market, organic certification laboratory, quarantine, minimize the role of brokers, development of auction centres, care of soil health, agro-tourism, youth engagement, agri-insurance policy, farmers' pension programme (contribution-based) and so on. This has rightly captured the current issues in the agriculture sector and tried to address them.

The key areas of intervention include review of existing policies, structures and processes, promotion of agriculture research and knowledge sharing mechanism

## 2.5 Federal and provincial government policies and programme

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The new federal and provincial governments have truly adhered to the roadmap for agricultural transformation through programmes and budgets for the current fiscal year. Both governments have recognized the importance of high-value agriculture crops, viz vegetables, potato, spices, milk, fish and

The insurance will cover 75 per cent of the total loss of farmers and provision of loan of up to NPR 700,000/- with educational certificates as collateral.

horticulture crops, to sustain the contribution of the agriculture sector to the national economy, generate employment at the local level and improve livelihoods. The

priority activities of these programmes include construction of warehouse/cold storages on a cost-sharing basis with entrepreneurs; focus PM-AMP on commercial crops; establishment of local collection centres, subsidy on purchasing vehicles for transportation of agri-products; provide subsidies on seeds and seedlings of commercial commodities; soil test and so on. Similarly, the GoN has assured provision of input—fertilizer, seeds, pesticides, equipment, and other basic services from local agriculture service centres. The insurance will cover 75% of the total loss of farmers and provision of a loan of up to NPR 700,000, with educational certificates as collateral.

# 3. FINDINGS



## 3.1 Areas of engagement and contribution by DCA Nepal in value chain and market development

The DCA Nepal is guided by its international goals: build resilient communities, save lives and fight extreme inequality. As a means to achieving its aforementioned goals, DCA has taken a rights-based approach and has identified areas of interventions - resilient livelihoods and sustainable food security, inclusive citizenship for good governance, and humanitarian response and disaster risk reduction. In Nepal, it works with minority communities and Dalits where poverty is high, human development indices are low and livelihoods are more dependent on agriculture.

According to CBS (2014), 80% of the population and 60% of the labour force are still dependent on agriculture (CBS, 2014). Engagement of women in the agriculture sector is increasing over the years, i.e. the percentage share of women working in the agriculture sector is 12.6% higher than that of men.

But the agriculture sector is still at the subsistence level. Farmers have inadequate knowledge of technologies/skills, inadequate capacity to claim food rights combined with poor market access, infrastructures and access to services. The groups affected from such situation are: smallholder farmers, landless and land-poor, migrants/returnees, minority ethnic groups or castes.

The DCA Nepal has tried to address such challenges by working with smallholder farmer groups and adopting market-

The strategy has adopted a multi-stakeholder approach: working with farmers, government agencies, and private actors for identification, development and promotion of the value chain.

based strategic interventions: improving production and productivity, commercialization, strengthening smallholder farmer groups/cooperatives, collection centres, processing, quality improvement, technologies and skill transfer, branding and packaging, market linkages, etc. The livelihoods strategy aims to take an approach to promote value chain development of cash crops, for example, ginger, turmeric, garlic, peanuts, soybean, lentil, potato, mushroom cultivation, and beekeeping. The strategy has identified areas for expanding the scale of production and strengthening the market network. The strategy has adopted a multi-stakeholder approach: working with farmers, government agencies, and private actors for identification, development, and promotion of the value chain.

Under the theme, resilient livelihood, various livelihood activities are being implemented in all four studied districts such as support in vegetable farming, livestock rearing, integrated farming with group approaches and promoting cooperatives. Efforts are being made to integrate these activities with the value chain approach. Direct agro-input support and indirect support through capacity building, facilitating linkage-building between farmers

and local government for capacity building and input support, promoting sustainable and climate-resilient farming technologies and practices for enhancing production, establishing infrastructure (collection centre, vehicle facility) and developing linkages among value chain actors for marketing of produce are the consolidated activities being carried out by the implementing agencies. The expected outcomes of the interventions under the Resilient Livelihood theme are:

- i) Improved livelihood and food security of smallholder, marginalized and commercial farmers engaged in production, processing and marketing of value chain-based products through enhanced agriculture productivity;
- ii) Promotion of climate-resilient and eco-friendly indigenous farming technologies/practices;
- iii) Facilitated and strengthened farmers organizations (groups and cooperatives);
- iv) Advocacy for improved service delivery and increased investment by government bodies and the private sector in agriculture;
- v) Coordinated local and national market through value chain management. The interventions are presented in brief in Annex 4.

### 3.2 Value chain actors, enablers and their functions

A value chain analysis was conducted to understand the existing situation and to identify the key constraints on, and opportunities for, maximizing benefits for all actors involved. While conducting the value chain analysis, all the actors involved in the production functions and their linkages were assessed. The functions include input

supply, production, collection, trading, wholesaling, retailing and consumption. At first, a value chain map of each product dealt with was prepared following the participatory situation analysis. The detail of the product wise value chain is given below:





### 3.2.1 Vegetables

Fresh vegetables were found as the major products during the stakeholder consultation meeting. The value chain map has been prepared for two rural municipalities, namely Purbichowki and KI Singh. Figure 2 depicts the flow of fresh vegetables from producers to the final consumer with respect to the case of Prasamsa Cooperative.

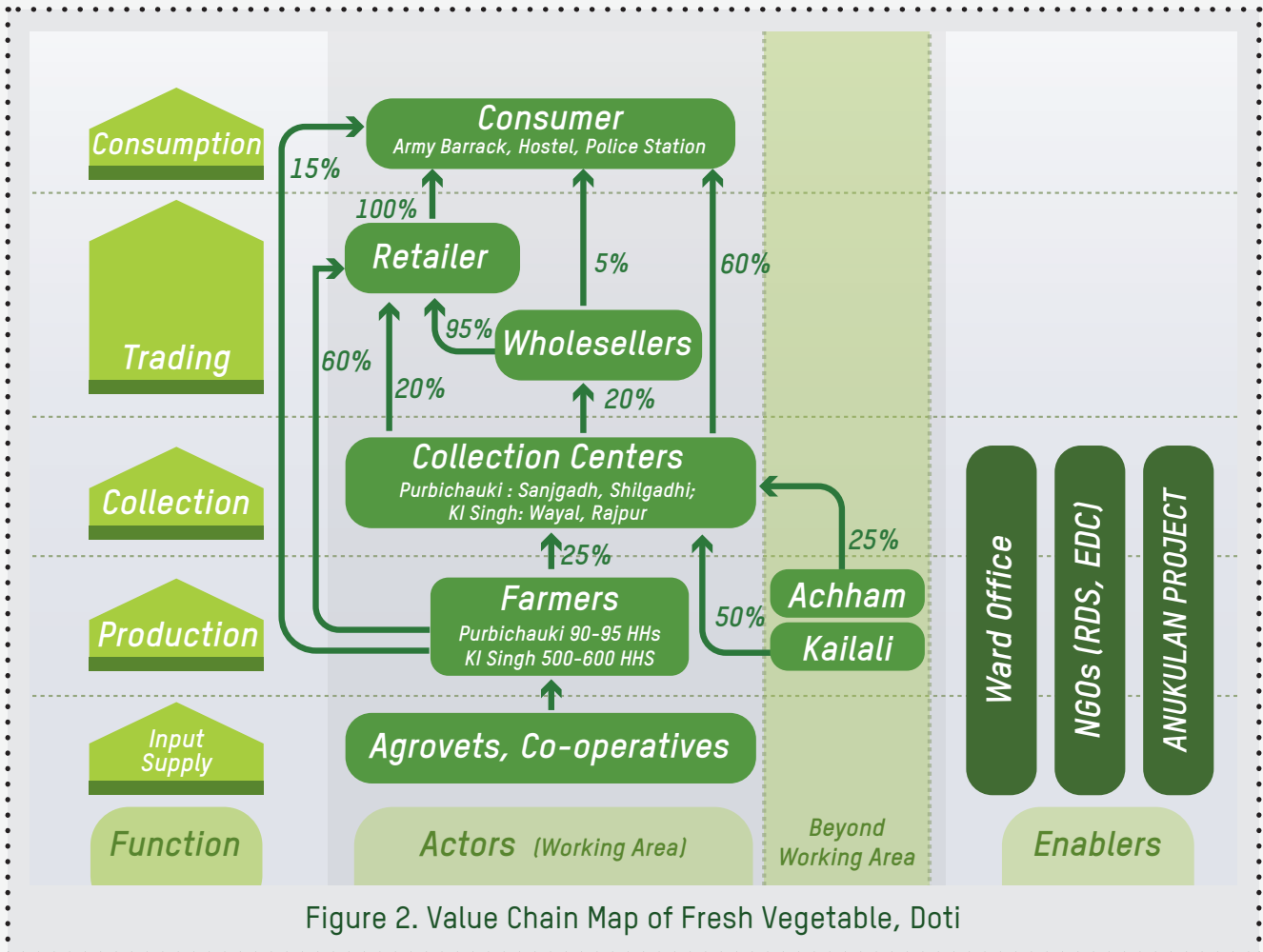


Figure 2. Value Chain Map of Fresh Vegetable, Doti

#### Input suppliers

Local private agrovets, NGOs, INGOs, and local government are the major input suppliers of fertilizers, seed, tools and technologies. Under the DCA programme, LIBIRD is providing women-friendly tools and technologies such as fruit-pickers, gloves, and 14 teeth rake. In addition, they are promoting other technologies, such as farming in a plastic tunnel, drip irrigation, plastic pond, cattle shed management (urine collection) and waste water collection, along with rainwater harvesting. Yam sack production and super green bags for seed storing were found to be the innovative and efficient approaches.

#### Producers

Almost 500-600 households in KI Singh rural municipality and 90-95 households in Purbichowki rural municipality are involved in the fresh vegetable production. Fresh vegetables from Sahajpur, Doti, a commercial farming area, go to the Terai region. In many areas, farmers seldom produce off-season vegetables and local production meets only 25-35% of the district's total demand.





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## Collection

Only 25% of fresh vegetables were produced locally, whereas the rest were supplied from neighbouring districts, Achham and Kailali. Moreover, farmers generally bring vegetables to collection centres when they are not able to sell them in the local market (see Box 1).

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## Traders (wholesalers and retailers)

From collection centres, the produce is eventually taken to traders (contractors, wholesalers) and then to local retailers and finally to consumers.

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## Consumers

Individual buyers comprise almost 60%, while 40% of the consumers are bulk buyers such as army barracks, school hostels, and police stations. The respective locations of markets of two different rural municipalities are as follows:

- (i) Products from Purbichowki > Sanjgadh, Chaukhutte bajar, Shantinagar Silgadhi
- (ii) Products from KI Singh > Wayal, Rajpur

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## Enablers

NGOs such as EDC, RDS and Anukulan Project provide technical as well as financial assistance. With the support of LIBIRD, EDC is providing water saving and gender-friendly tools and technologies and technical information on bio fertilizers, bio pesticides, etc. Ward offices provide technical as well as financial assistance and motivate locals to involve in the production of crops.

## Box 1: Story of the community owned - privately managed collection centre



Prasamsha vegetable collection centre, situated at Rajapur of Doti, owned by a cooperative was established six year back with support from different development agencies. After a couple of years of operation, it could not run further due to the main reason - low price offered by the collection center compared to that offered by the retailers. Hence, farmers preferred selling directly to the retailers than to the collection centre. As the management of the cooperative was not able to run the cooperative effectively, Yogendra and his spouse Gauri took over the management of collection centre. Now, it is community owned, privately managed collection centre. Gauri is responsible for buying vegetables from farmers and selling to the customers from collection centre. Yogendra is responsible for coordinating products with the farmers and delivery of vegetables to the local retailer and regular institutional customers – Seti Technical School, Sahid Smriti School, Army Barrack, Police Barrack. Soon, the name ‘Prasamsha collection centre’

famed among retailer and customers for quick service delivery, reasonable price and quality of vegetables. From this business, Yogendra and Gauri make an average daily transaction of around NRs 20,000.

However, there exist few challenges such as farmers come with their product without prior information. As a consequence, sometime supply becomes surplus and sometime deficit. Secondly, farmers have tendency to sell to the tourist type of middlemen to get higher price particularly during strikes when there is short supply from terai. In such situation, collection centre faces trouble to manage supply of vegetables to its regular clients. Similarly, farmers supply produces both graded and non-graded. Most farmers – nearly 75% - bring vegetables without grading and seek the same price as graded ones. Despite of these challenges, the community owned - privately managed model can be replicated to other inefficiently run collection or processing centre.

## SWOT analysis

Strength	Weakness
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Suitable climate for off season production</li> <li>• Use of efficient agricultural tools</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Availability of collection centres</li> <li>• Existence of enabling environment</li> <li>• Local government has prioritized the agriculture sector</li> </ul>	<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Overburden for women in agricultural work</li> <li>• Outmigration of male</li> <li>• Insufficient water for irrigation</li> <li>• Lack of technical knowledge on off-season vegetable production</li> <li>• Lack of coordination among farmer so both uniformity and variety of production is lacking</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Cooperatives are inefficient</li> <li>• Lack of benefit analysis and entrepreneurship skill in traders</li> <li>• Intermediaries – no clear role of intermediaries</li> <li>• Lack of trust between farmers and collection centres: They do not provide products to collection centers rather go to market by themselves to sell their products.</li> <li>• Lack of grading products</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Priority of local government and technical experts views are mismatching. For example: Municipality allocated budget in piloting of the tea production, but the technical experts view on the tea feasibility is negligible</li> <li>• No linkage between financial institutions and farmers</li> <li>• Insurance scheme is impractical.</li> </ul>
Opportunities	Threats
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Expansion of off-season fresh vegetables production can be done.</li> <li>• Coordination with a neighboring municipality to produce vegetables all-round the year</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Fresh vegetables from hills can be sold in off season to plains and vice versa.</li> </ul>	<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Human-wildlife conflict: Crop depredation by monkey, wild boar, porcupines</li> <li>• Climate change impact: Untimely rainfall</li> <li>• Agriculture land left fallow due to migration of land owner</li> <li>• Farmers involved are either landless or owns small piece of land</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Competition with the Terai fresh vegetables</li> <li>• Competition with the fresh vegetables from India; price is determined accordingly</li> </ul>

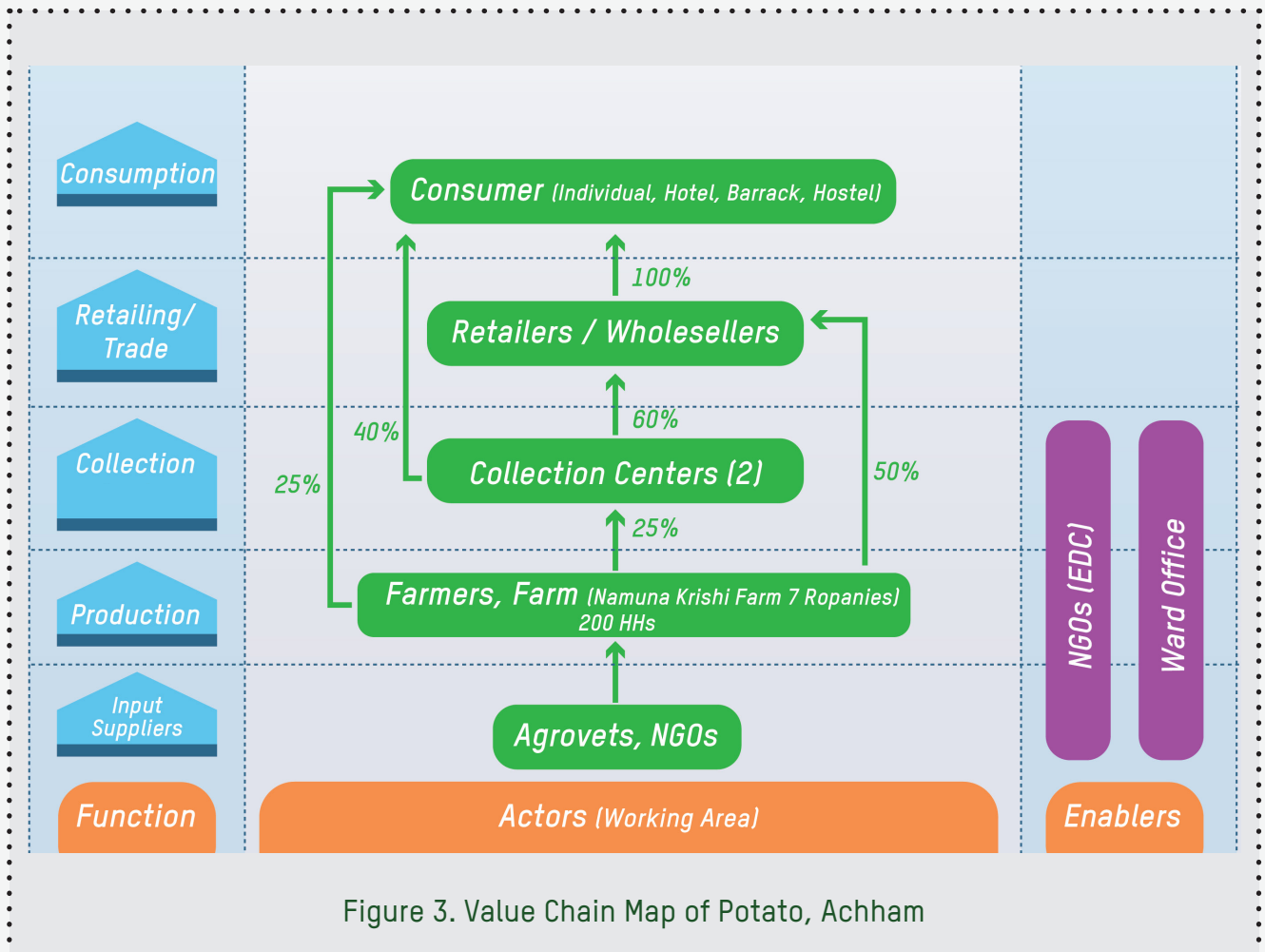
## Priority area of interventions

Areas	Interventions
<b>Production</b>	<ul style="list-style-type: none"> <li>• Encourage agro-vets to supply quality seeds</li> <li>• Orient farmers on the use of the certified seed</li> <li>• Introduce crop insurance schemes</li> <li>• Scale up gender friendly agri-tools</li> <li>• Mobilize extension staff to provide timely and quality services to the farmers</li> <li>• Facilitate farmers to increase of production by increasing volume or by increasing the number of producers or by both ways</li> <li>• Strengthen farmers to farmer relationship for collective bargaining, the volume of product traded into the local market</li> <li>• Support farmers on smart irrigation technologies</li> <li>• Orient on costs of production to farmer groups</li> <li>• Introduce climate adaptive crop varieties</li> </ul>
<b>Processing and Transportation</b>	<ul style="list-style-type: none"> <li>• Minimize the damage during transport loss by supporting farmers on packaging materials</li> <li>• Support on the establishment of the collection center</li> </ul>
<b>Trading and Marketing</b>	<ul style="list-style-type: none"> <li>• Strengthening the marketing centre</li> <li>• Strengthen vertical linkage among actors/enablers by Multi-stakeholder platform</li> <li>• Support on branding of the product</li> <li>• Conduct feasibility study for the cold storage with public-private partnership approach</li> </ul>
<b>Policy and Institutions</b>	<ul style="list-style-type: none"> <li>• Facilitate to organize Multi-Stakeholder Platform (MSP) meeting</li> <li>• Strengthen the capacity of staffs/stakeholder</li> <li>• Aware value chain actors regarding services through different government and non-government actors, including role of government</li> </ul>



### 3.2.2 Potato

Potato is another main commodity. Figure 3 presents the value chain of potato.



#### Producers

About 200 individual farmers are involved in the commercial production of potato among which “NamunaAgro farm” apparently, is the largest one, with the production land of 7 ropanis. More than 100 of farmers produce 10 quintals of potato whereas there are 20-25 households that produce only 1 quintal in a season.

#### Collection

The produce goes to two collection centers situated at each working rural municipalities i.e. Purbichauki and KI Singh. From collection centers, local retailers and wholesalers buy potatoes. The collection centers are running by cooperatives, but stakeholders are planning to change it in private mode to increase its efficiency.

#### Traders (retailers)

The produce goes as far as Dipayal, Silgadhi and other districts as well.

## Consumers

Consumers are individual buyers, hotel, barrack and hostel. Few consumers buy directly from farmers.

## Enablers

Non-governmental organizations such as EDC provide technical as well as financial assistance. With the support of LIBIRD, it provides water saving and gender friendly tools and technologies and other technical information. Ward offices provide technical as well as financial assistance and motivating locals to get involved in the production of crops.

## SWOT Analysis

Strength	Weakness
<p><b>Input Suppliers</b></p> <ul style="list-style-type: none"> <li>• Presence of various projects that provide inputs in subsidized rate or for no cost</li> </ul> <p><b>Production:</b></p> <ul style="list-style-type: none"> <li>• Pocket area of potato, chilli, tomato</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Jayagadh Market is the one door for 11-12 rural municipalities.</li> <li>• Collection centre is present</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Presence of cooperatives</li> <li>• Presence of Prime Minister Agriculture Mechanisation Project and self-employment program</li> </ul>	<p><b>Input suppliers</b></p> <ul style="list-style-type: none"> <li>• Seed production not focused by farmers</li> <li>• Lack of knowledge of certified and uncertified seeds</li> </ul> <p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Lack of coordination among farmers for mass production</li> <li>• Sustainability issue: High expectation of project subsidised and freely distributed inputs by farmers</li> <li>• Lack of proper irrigation facility</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Intermediaries missing</li> <li>• Collection centres not so functional and successful</li> <li>• Lack of trust between farmers and collection centres: They do not provide products to collection centers rather go to market by themselves to sell their products.</li> <li>• Lack of knowledge of cost-benefit and entrepreneurship</li> <li>• Lack of grading products</li> <li>• No cold storage for long-term storage</li> <li>• Lack of transportation facility</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Lack of number of technical persons</li> </ul>

Opportunities	Threats
<p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Another collection centre is being constructed in Sanfebagar</li> <li>• Branding possibility for mountain potato</li> <li>• Diversification of products: dried radish, potato</li> <li>• Vehicle arrangement</li> <li>• Potatoes can be sold in off season provided availability of cold store</li> <li>• If store house is available, then the potatoes can be sold in off season as well</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Ward plans for agriculture is encouraging</li> </ul>	<p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Proper vertical linkage of the stakeholders is missing</li> </ul>

## Priority area of interventions

Areas	Interventions
<b>Production</b>	<ul style="list-style-type: none"> <li>• Encourage agro-vets to supply quality production inputs, especially seeds</li> <li>• Orient farmers on the use of the certified seed</li> <li>• Introduce crop insurance schemes</li> <li>• Scale up gender friendly agri-tools</li> <li>• Mobilization extension staff to provide timely and quality services to the farmers</li> <li>• Facilitate farmers to increase production by increasing volume or by increasing the number of producers or by both ways</li> <li>• Strengthen farmers to farmer relationship for collective bargaining, the volume of product traded into the local market</li> <li>• Support farmers on smart irrigation technologies</li> <li>• Orient on costs of production to farmer groups</li> <li>• Introduce climate adaptive crop varieties</li> </ul>
<b>Processing and Transportation</b>	<ul style="list-style-type: none"> <li>• Facilitate to value-add, by cleaning the potato and store it in the cold storage</li> <li>• Orient farmers on potato grading with the necessary support</li> </ul>
<b>Trading and Marketing</b>	<ul style="list-style-type: none"> <li>• Strengthening the marketing centre</li> <li>• Strengthen vertical linkage among actors/enablers by Multi-stakeholder platform</li> <li>• Support on the branding of the product</li> <li>• Conduct feasibility study for the cold storage with public-private partnership</li> </ul>
<b>Policy and Institutions</b>	<ul style="list-style-type: none"> <li>• Establish Multi-Stakeholder Platform (MSP) and organize meetings</li> <li>• Strengthen the capacity of staffs/stakeholder</li> <li>• Aware value chain actors regarding services avail through different government and non-government actors, including role government</li> </ul>



### 3.2.3 Milk

The value chain has been built on the basis of “lean season” (April to November) when the milk production is reduced. Below is the value chain map of milk for Bardiya Municipality, Bardiya.

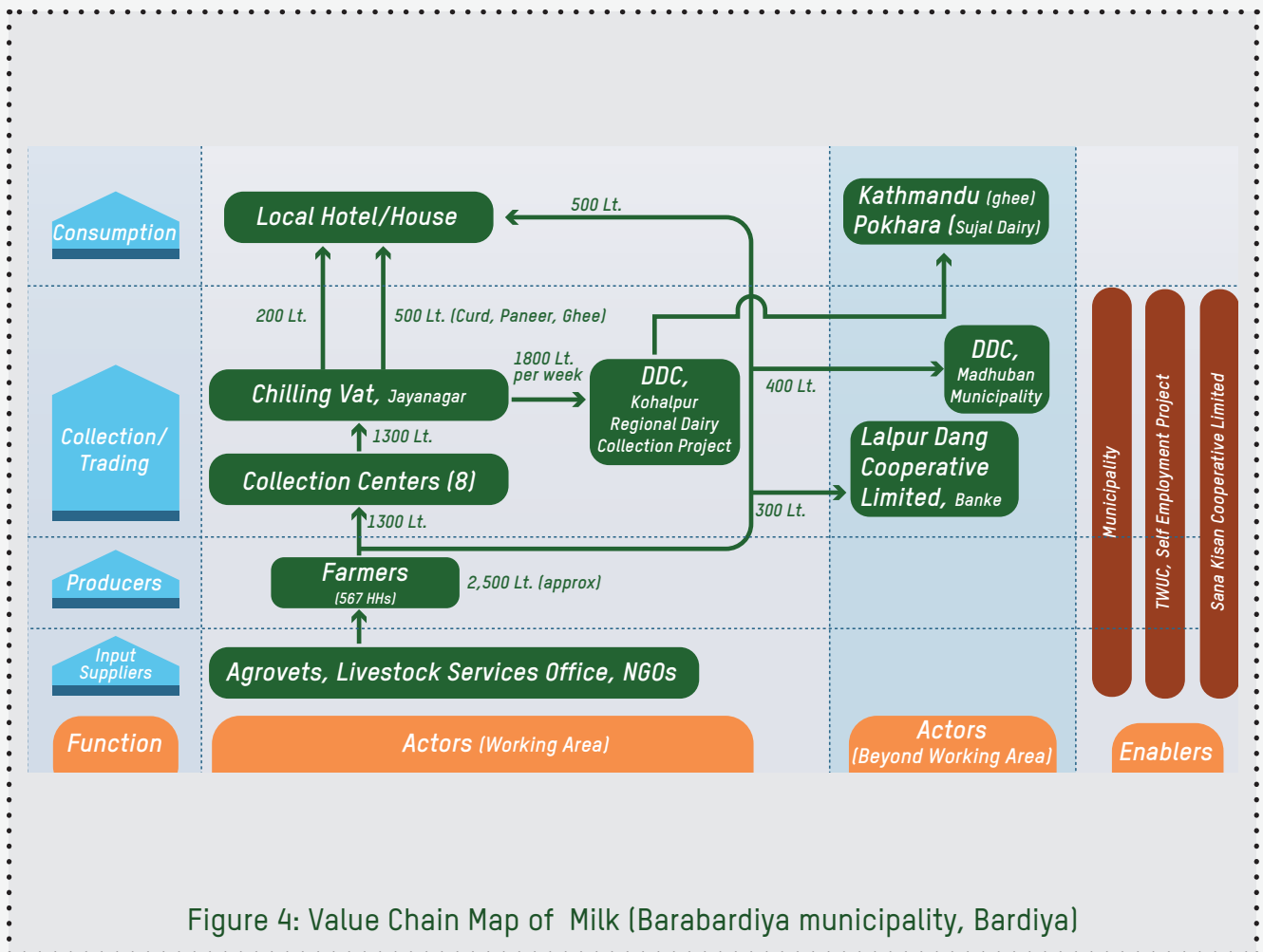


Figure 4: Value Chain Map of Milk (Barabardiya municipality, Bardiya)

#### Input suppliers

Existing agrovets, municipality livestock services department, cooperatives and other projects are input suppliers for the milk value chain.

#### Producers

The production of milk in Barabardiya municipality is 2,500 liters in the lean season while it increases as much as 5,500 liters in ‘flush’ season (December to March). Altogether 567 HHs is involved in the milk production.

## Collection

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Out of 2,500 liters produced, the fresh milk is collected from

- Milk Cooperative, Banke district =300 liter,
- DDC Sanosiri, Madhuvan Municipality = 400-liter
- Collection centers (8 in number; both private and cooperative) = 1,300 liters
- Local hotels and household level= 500 liters

The milk collected in the collection center is consumed in a local market as well as reach to the market of Kathmandu and Pokhara. Under DDC, Kohalpur Regional Milk Collection Project 1,800 liters of milk in a week is sent to kathmandu DDC and Sujal Dairy, Pokhara. Local hotels and households consumes 200 liters of fresh milk and 500 liters (paneer, curd, buttermilk, butter) in a week.

The major constraint in the milk value chain is the insufficiency of chilling centers at the right place and number. The stakeholder meeting suggested for establishing a chilling center at Jodhpur and Katarniya with 500-liter capacity and at Ranipur with 1,000-liter capacity.

## Enablers

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Municipality provides livestock services as a regular program provide farmers with technical support, livestock breeding, treatment, feeding and cattle shed management, etc. Tharu Women Upliftment Center (TWUC) has a facilitative role, provides technical and input support. A local cooperative, “Sana Kishan Cooperative Limited” support by providing a loan at the 9% interest rate. For shareholders, it shares its bonus in terms of livestock feed of worth NPR 20,000, once in 3 years. Youth Self-employment program provides loan and other entrepreneurial support.



## SWOT analysis

Strength	Weakness
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Milk production surplus</li> <li>• Locally popular for the quality of milk since no adulteration</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• No market problem for milk</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Municipality programs continued: livestock breeding, treatment, feeding and cattle shed management</li> <li>• Collaboration with the community forest for grass cultivation</li> <li>• Subsidy in grass seeds and animal feed processor and cattle shed improvement</li> <li>• Planning to establish milk collection centre by the municipality</li> </ul>	<p><b>Input suppliers</b></p> <ul style="list-style-type: none"> <li>• Farmers do not follow technical instructions</li> <li>• Agrovets lack updated knowledge</li> </ul> <p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Lack of sufficient cold storage for the milk storage</li> <li>• Less than one-third of farmers are in commercial production</li> <li>• Improper cattle shed management</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Collection center not sufficient for milk and other produce</li> <li>• Absence of vehicle for supplying produces</li> <li>• Low voltage of electricity for running cold storage</li> <li>• Lack of knowledge of cost-benefit analysis and entrepreneurship</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Number of technical experts is very low</li> <li>• No information of services such as insurance of cattle</li> </ul>
Opportunities	Threats
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Commercial production of grasses would be beneficial</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Sahayogi Collection center recently established</li> <li>• Product diversification (ice-cream, cheese etc)</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Presence of cooperative and bank</li> </ul>	<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Labor shortage: Migration of male members to India so scale of commercialization minimum</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• No sufficient collection centre</li> <li>• Lack of proper packaging</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Services are grabbed by few farmers only</li> </ul>





## Priority area of interventions

Areas	Interventions
<b>Production</b>	<ul style="list-style-type: none"> <li>• Encourage agro-vets to supply quality production inputs, especially seeds for grass production and livestock feed</li> <li>• Support farmers to cultivate grasses and fodder including the use of concentrate feed</li> <li>• Support farmers on livestock insurance</li> <li>• Provide cattle feed vessels to the farmers</li> <li>• Mobilize extension staff to provide timely and quality services to the farmers, especially on livestock disease</li> <li>• Strengthen farmers to farmer relationship for collective bargaining, the volume of product traded into the local market</li> <li>• Orient on costs of production to farmer groups</li> <li>• Support farmers on improved cattle shed construction</li> </ul>
<b>Processing and Transportation</b>	<ul style="list-style-type: none"> <li>• Support for construction of chilling vat/collection center</li> <li>• Support farmers on testing of milk-related equipment</li> <li>• Facilitate to value-add, and product diversification and stole in chilling center</li> </ul>
<b>Trading and Marketing</b>	<ul style="list-style-type: none"> <li>• Strengthen linkages of the farmers with the dairy</li> <li>• Strengthen vertical linkage among actors/enablers by Multi-stakeholder platform</li> <li>• Support on ensuring regular power supply on chilling center, especially through generator support</li> <li>• Support cooperative on vehicle purchase for milk transport</li> </ul>
<b>Policy and Institutions</b>	<ul style="list-style-type: none"> <li>• Facilitate Multi-Stakeholder Platform (MSP) meeting</li> <li>• Strengthen the capacity of staffs/stakeholder</li> <li>• Aware value chain actors regarding services avail through different government and non-government actors, including local government</li> </ul>

### 3.2.4 Ginger/Turmeric

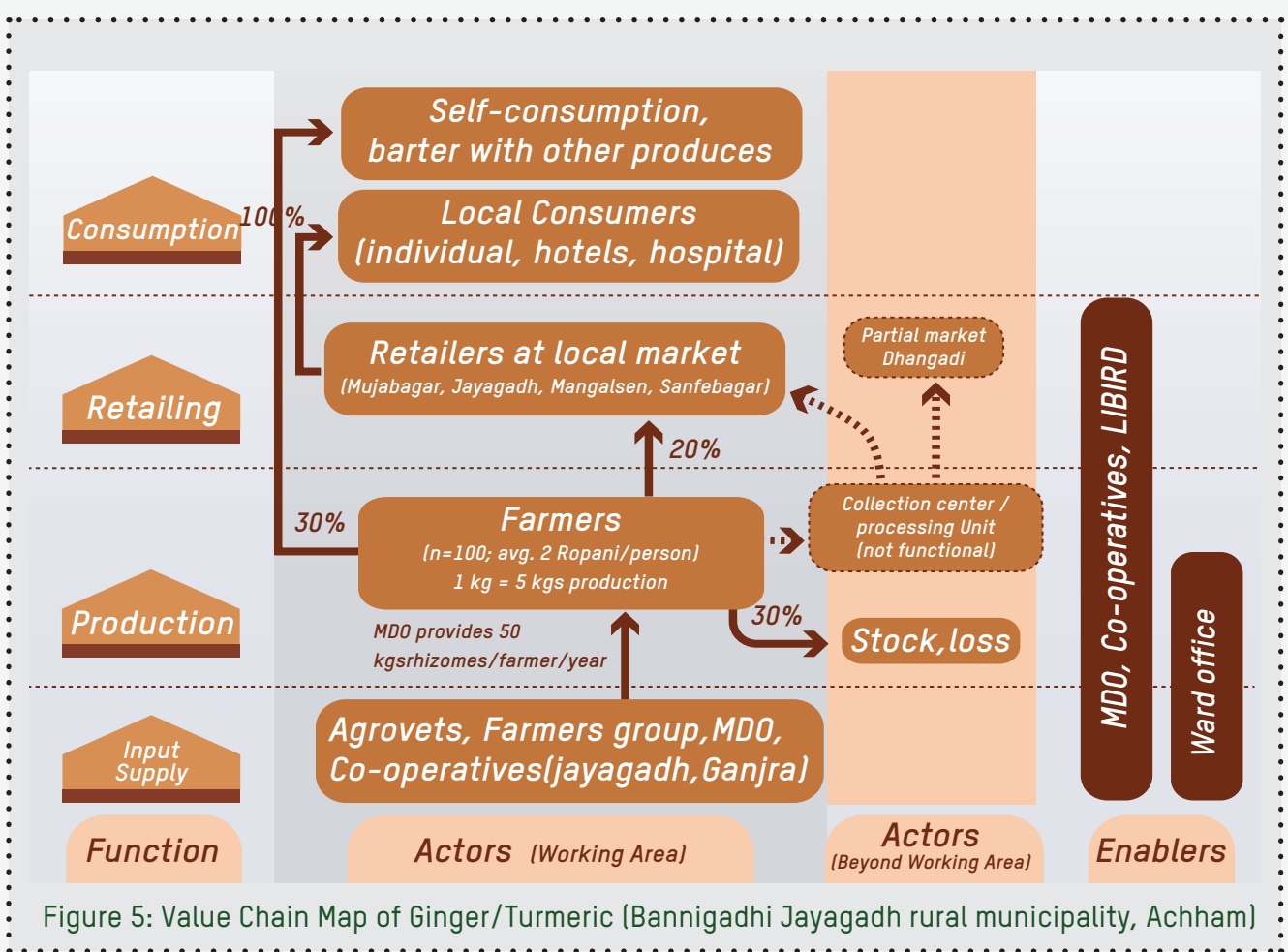


Figure 5: Value Chain Map of Ginger/Turmeric (Bannigadhi Jayagadh rural municipality, Achham)

### Input suppliers

MDO has been providing 50 kg of rhizomes of ginger or turmeric/year/farmer for the plantation to farmers through cooperatives in nominal charges. Two cooperatives in Jayagadh and Ganjra are providing the service. Apart from that, agrovets also supply rhizomes to fulfill the demand along with other inputs such as fertilizers, pesticide, tools, etc.

### Producers

About 100 farmers are involved in the ginger/turmeric farming with landholding about 2 ropanis per person. Average household production of ginger or turmeric is 25 tones per household. There is no processing unit or storage facility.

### Collection

A collection center is an inactive stage at present. Few years ago, there used to be a collection center at Jayagadh which used to provide services of marketing and had started expanding the market to Dhangadhi. However, after the relocation of the collection center, it has been in a dormant stage because of less accessibility to farmers and congested space.

## Processing

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A micro-enterprise namely Jayagadh Besar Prasadhan Kendra was established with grinder machine, solar dryer and packaging unit to sell the processed product in the market. However, the processing unit is also not in the functional state due to unavailability of the person in the name of who's the enterprise is registered. Moreover, the process of quality assurance of the processed product by the Department of Food Technology and Quality Control was not fulfilled or certified therefore the plant is in a dormant stage.

## Retailers/Trading

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There is a missing linkage of intermediaries or collection center that facilitates the collection of the produces. Hence, farmers carry the produces by themselves to the local retailers at market centers Jayagadh, Mangalsen and Sanfebagar.

## Consumers

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Almost 20-30 percent of the total production is either self-consumed or sent to relatives or bartered with other products by farmers. Hotels, hospital and other local people are direct consumers from retailers.





## SWOT analysis

Strength	Weakness
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Pocket area for ginger and turmeric apart from maize, fresh vegetables, peanuts/ orange and potato</li> <li>• Ginger from Kalachaur is of a special type</li> <li>• Traders from India come to Bagteda to collect dry ginger.</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Collection centers situated in Dipayal and Rajpur</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Local government has prioritized the agriculture sector</li> </ul>	<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Overburden for women in agricultural work: high male outmigration</li> <li>• Lack of sufficient water for irrigation</li> <li>• Less availability of agricultural land – low commercialization</li> <li>• Lack of coordination among farmers for mass production</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Cooperative approach not so functional and successful</li> <li>• Lack of knowledge of cost-benefit analysis and entrepreneurship</li> <li>• Intermediaries – no clear role of intermediaries</li> <li>• Unethical practices such as adulteration with non-food items. Example: in turmeric</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Due to the absence of zone and super zone, the Prime minister agriculture modernization project is not present</li> <li>• Priority of local government and technical experts views are mismatching. For example; Municipality allocated budget in piloting of the tea production, but the technical experts view on the tea feasibility is negligible</li> <li>• Missing linkage between financial institutions and farmers</li> </ul>
Opportunities	Threats
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Ginger and turmeric can be promoted for block production for local market as well as for export by processing it to dried ginger (sutho)</li> <li>• To revive the collection center and turmeric processing unit</li> </ul>	<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Climate change impact: Untimely rainfall/drought</li> <li>• Agricultural land left fallow due to migration of owner and people who are willing to work are landless or owns small piece of land.</li> </ul>

## Priority area of interventions

Areas	Interventions
<b>Production</b>	<ul style="list-style-type: none"> <li>• Introduce crop insurance schemes</li> <li>• Mobilization extension staff to provide timely and quality services to the farmers</li> <li>• Introduce high yielding varieties to increase production and productivity</li> <li>• Strengthen farmers to farmer relationship for collective bargaining, the volume of product traded into the local market</li> <li>• Promote organic farming</li> <li>• Orient on costs of production to farmer groups</li> </ul>
<b>Processing and Transportation</b>	<ul style="list-style-type: none"> <li>• Support to establish spices processing enterprise (grinding and packaging).</li> <li>• Introduce technology for slicing and drying to make sutho</li> </ul>
<b>Trading and Marketing</b>	<ul style="list-style-type: none"> <li>• Support on the branding of the product</li> <li>• Explore international exporters of organic ginger and other linkages</li> </ul>
<b>Policy and Institutions</b>	<ul style="list-style-type: none"> <li>• Facilitate to organize Multi-Stakeholder Platform (MSP) meeting</li> <li>• Strengthen the capacity of staffs/stakeholder</li> <li>• Aware value chain actors regarding services avail through different government and non-government actors, including role of government</li> </ul>



### 3.2.5 Onion

The value chain map above represents the production of onion in two wards - ward number 3 and 5 of Belauri rural municipality, Kanchanpur.

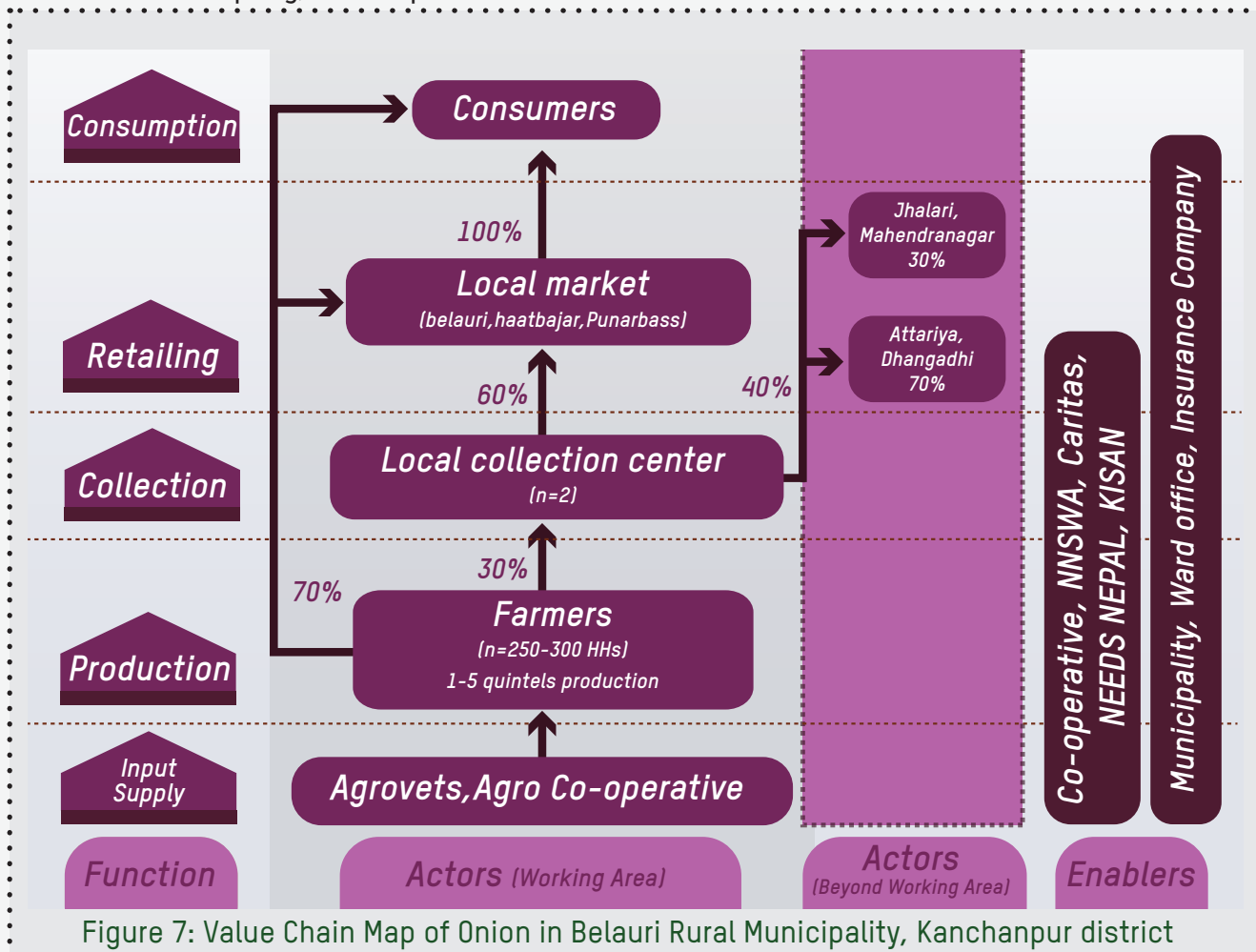


Figure 7: Value Chain Map of Onion in Belauri Rural Municipality, Kanchanpur district

#### Input suppliers

The local agro-vets provide seeds, fertilizer, insecticides and pesticides to the farmers. The agricultural technicians from municipality ward office and technicians from NNWSA provide technical as well as financial support. NNWSA has provided financial support valued Rs 25000 per farmers group. These groups then provide support to needy farmers.

#### Production

Onion is an attractive income source for farmers as they can sell onion bulbs as well as plants in good price. There are farmers in between 250 to 300 who produce onion. These farmers produce minimum of one quintal and maximum of 5 quintals of onion for the purpose of selling. The production share of bulb and saplings is around 40% and 60% respectively.

#### Collection

There are two collection centres – one is located at Ramnagar and the next is at Padau. The farmers bring around 30% of their total produce at the collection centre. Rest 70% is sold through local Haatbazaar directly to the consumers and local traders. The collection centre then supplies 60% of collected onion to Haatbazaar and around 40% is supplied to relatively bigger markets.



## Trading

The traditional marketing system – Haatbazaar serves major role in marketing of onion. These Haatbazaar are located at Belauri and Purnarbas. There exists a barter system in the area i.e. onion bulb is bartered with wheat. The local traders, who collect onion from Haatbazaar sell at markets in Jhalari, Mahendranagar and Attariya of Dhangadhi



## SWOT analysis

Strength	Weakness
<p><b>Production:</b></p> <ul style="list-style-type: none"> <li>• Pilot of onion successful; both saplings and bulbs</li> <li>• Groundwater available for irrigation</li> <li>• Use of efficient agricultural tools</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Collection centre supply surplus onion to other market centers of Mahendranagar and Dhangadhi</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Local government has prioritized the agriculture sector</li> <li>• Presence of major projects including Prime minister agriculture modernization project, Mayor Agriculture Modernization Project</li> </ul>	<p><b>Input suppliers</b></p> <ul style="list-style-type: none"> <li>• Unavailability of seed on time and of unreliable quality</li> </ul> <p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Farmers are still not convinced that their livelihood can be uplifted by the income from farming activities</li> <li>• Lack of coordination among farmers</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Lack of storage</li> <li>• Absence of vehicle for supplying produces</li> <li>• Low production so farmers tendency to sell it in the local market directly to get higher price instead of giving it to existing collection centres. Hence the value chain gets distorted.</li> <li>• Lack of knowledge of cost-benefit analysis and entrepreneurship</li> <li>• Lack of trust among traders and farmers; traders complain of irregular supply of produces while farmers complain about the unfair price</li> <li>• Intermediaries do not get payment on time from traders of Dhangadi and Mahendranagar</li> </ul> <p><b>Enabling Environment</b></p> <ul style="list-style-type: none"> <li>• Number of technical persons is very low</li> </ul>

Opportunities	Threats
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• Onion farming is more beneficial; potential market can be harvested for a longer duration of time and can be dried</li> <li>• Use of the internet for learning new technologies and information related to agriculture</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Use of smart phone increasing to get information about the market price</li> </ul>	<p><b>Production</b></p> <ul style="list-style-type: none"> <li>• During monsoon, water logging problems so low production</li> <li>• Due to lack of commercialization, no regular production hence cannot ensure market</li> <li>• Farmers have limited land area for commercial production</li> <li>• Can rotten due to bad storage (air conditioning is needed)</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>• Competition from India</li> <li>• Rate fluctuation; do not get a fair price</li> <li>• Hired vehicles take maximum charges for transporting so less competitive price</li> </ul>

## Priority area of interventions

Areas	Interventions
<b>Production</b>	<ul style="list-style-type: none"> <li>• Encourage agro-vets to supply quality production inputs, especially seeds</li> <li>• Orient farmers on use of the certified seed</li> <li>• Introduce crop insurance schemes</li> <li>• Scale out gender friendly agri-tools</li> <li>• Mobilization extension staff to provide timely and quality services to the farmers</li> <li>• Facilitate farmers to increase of production by increasing volume or by increasing the number of producers or by both ways</li> <li>• Strengthen farmers to farmer relationship for collective bargaining, volume of product traded into local market</li> <li>• Introduce climate adaptive crop varieties</li> </ul>
<b>Processing and Transportation</b>	<ul style="list-style-type: none"> <li>• Facilitate to value add, by cleaning the onion</li> <li>• Orient farmers on onion grading with size and quality</li> <li>• Support in transportation without damaging the produces</li> </ul>
<b>Trading and Marketing</b>	<ul style="list-style-type: none"> <li>• Strengthening the marketing centre</li> <li>• Strengthen vertical linkage among actors/enablers by Multi-stakeholder platform</li> <li>• Support on the branding of the product</li> <li>• Conduct feasibility study for the cold storage with public-private partnership</li> </ul>
<b>Policy and Institutions</b>	<ul style="list-style-type: none"> <li>• Facilitate to organize Multi-Stakeholder Platform (MSP) meeting</li> <li>• Strengthen capacity of staffs/stakeholder</li> <li>• Aware value chain actors regarding services from different government and non-government actors, including role of government</li> </ul>

## 3.3 Existing status of the potential product for value chain

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### 3.3.1 Soyabean

Soyabean is identified as one of the promising commodities for value chain development in Doti district. The stakeholders, EDC staffs and LIBIRD local staffs highlighted its potentiality. Based on the discussion, the brief value chain analysis of soyabean is presented below.

#### Input suppliers

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Agro vets and agro-cooperatives are main input suppliers. The producers mentioned that they have not applied chemical fertilizer and pesticides in soyabean production.

#### Production

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There are around 215 households producing Soyabean. The estimated production in the district is about 15,000 quintals. LIBIRD has started doing an action research on five varieties of soyabean both local and improved. The action research will not only look at the comparative analysis of the yielding capacity but also recommend what variety is good for what products such as oil, salad, snacks, etc

#### Collection

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Jaljala cooperative centre at Dipayal is serving as collection centre for Soyabean. Middlemen from Mahendranagar bought in bulk and then sold to trader of India

#### Processing

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Soyabean is sold to produce soya cake and oil. But, in case of study area, there are limitations in processing soyabean to produce oil. Although, the local investors are thinking of installation of processing plant, its cost is the major barrier. An oil extracting machine cost between NRS 30 lakhs and 60 lakhs which is too costly for small investors. So, they are exploring the possibility of installing plant through co-operative and also approaching municipality for some support from Municipality. In addition, EDC is exploring whether or not the installation of the small-scale oil production unit in the area is possible.



#### Trading and marketing

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Though DCA support in soyabean was not present, the collection center received good volume of soyabean indicating the high production potential. Sauri Krishak Sahakari had the business transaction of 2 million in a year by selling green soyabean only.

#### Institutions

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Sustainable Agriculture Development Program (SADP) implementation years (2014-2017) brought this commodity at front. Later, the project management team (PMT) comprising the representatives from EDC, LIBIRD concluded that the district has potential for soyabean production and therefore felt necessity of developing its value chain. Owing to its potentiality, EDC is supporting value chain actors in feasibility of product diversification.



The value chain map has been prepared in consultation with local partners of DCA of Doti districts

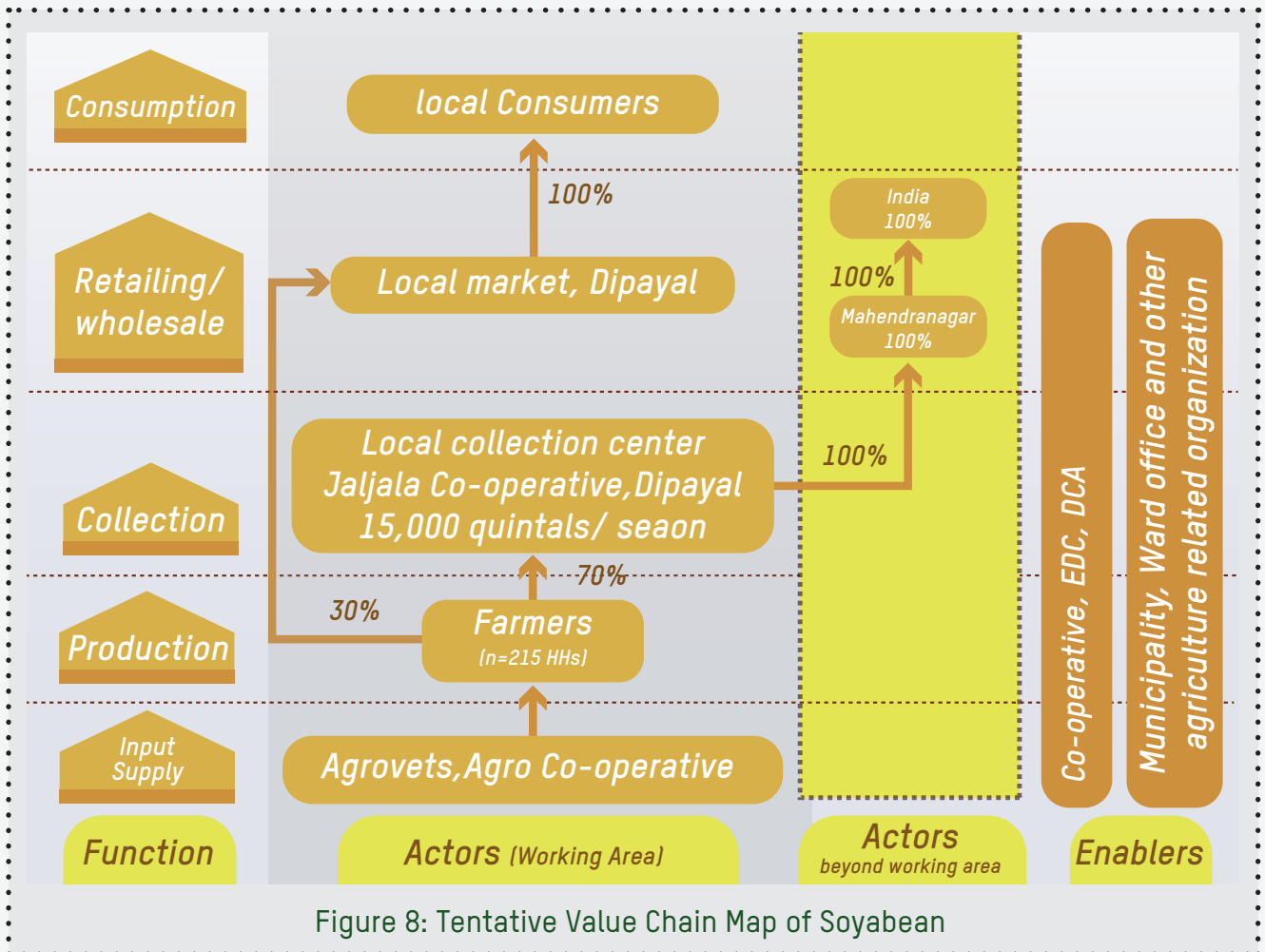


Figure 8: Tentative Value Chain Map of Soyabean

### Few key findings of the exploration are:

Oil and soya cake (by product) were considered for product diversification.

- The cost of oil production unit is NRS 30-60 lakhs.
- For potential local investors, such agrovets, municipality and cooperatives the investment amount is beyond their capacity
- Oil industries are present in Lamki (Sitaram food industries factories) and Dhangadhi (Rajpur Food Industries). In case of inability of establishing oil extraction unit locally, the products can be assembled in collections centers and linked to these existing industries.
- Soyabean can be promoted through corridor approach considering Achham district.
- The information on soyabean was collected through rapid survey so it is suggested that DCA should conduct a study on the production status of soybean, end market analysis, storage facility, demand supply analysis, and product diversification so that the farmers and processors can get a better income.

### 3.3.2 Chili

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Chili is one of the prioritized value chain commodities of DCA Nepal in Bardiya district. During the consultation with the DCA partner staffs and participating actors, it was found that the chili is in the early stage of value chain i.e. at the production level and recently supported. Hence, tracing of the value chain map was not possible. The farmers expressed that it is beneficial as it has potential market and can be harvested for a longer duration of time and can be dried too. Nevertheless, existing status of the Chili production includes:

- Chili production is at the very initial stage. Tharu Mahila Utthan Kendra (TWUC), partner NGO of DCA Nepal, has distributed 700 kilo gram of chili seed to 400 participant households in this year. The participants of the meeting and interviews were unable to provide information on production and marketing status of Chili.
- The farmers and staffs of TWUC are still confused whether they should prioritize on green chilli production or conduct value addition and processing of the Chili. At present, there exists no processing facility for the Chili, especially for making Chili power. The market assessment, including cost and benefit analysis of the Chili production and processing, should be carried out prior for making an informed decision, such that economic benefits to the farmers could be enhanced. The potential market for the Chili includes Kohalpur, Bhurigaon, and Sano Shree.
- The DCA in collaboration with the partners is currently distributing seeds at the household level, however, farmers have inadequate knowledge and skills in nursery techniques and plan care and management. This had resulted in poor germination of the seeds. The partners emphasize for building capacity of the farmers on agronomic practices.







## 4. EMERGING ISSUES AND CHALLENGES

Issues and challenges are grouped together and presented in four categories according to the value chain functions. The issues and challenges emerged broadly due to the internal and external factors in the value chain. The internal issues and challenges cover attitude of actors, power relations, access to resources and capacity of the value chain actors. Similarly, external issues and challenges cover those factors which are not directly involved in the value chain but can affect the value chain.

### 4.1 Internal factor affecting value chain

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#### 4.1.1 Production

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##### Farmer's reliance on traditional farming

Farmers hesitate to switch from traditional farming to commercial farming. They believe that if they do not produce cereal crops they will not be able to feed their family. Most farmers do not believe that income can be generated through the production of high-value commodities in the same piece of land. It is hard to convince them that there exists a possibility of purchasing required commodities from the market with surplus cash in hand by selling high value crop they grow.

##### Shortage of human resources

Unlike in other regions of the country, young men migrate seasonally to India for earning cash income. Since commercial farming is wrought with risks and needs certain investment, controlling out-migration of men, particularly from poor households, and motivating them towards commercial farming is a big challenge.

##### Lack of access of the poor to grants and subsidies

Few elites capturing the available resources is a common phenomenon in rural Nepal. Citing an example, only a few people repeatedly participate in training or other capacity development activities organised in towns. Deserving farmers usually are not well aware of the process or the institution where these grants and subsidies are available.

##### Poor recognition of farmers

Most farmers argue that the youth have little attraction for the agriculture sector. They claim that this sector is poorly recognized in the community. The act of name-calling associated with the products they carry is very common, for example, *Lauke, Aaloo*. This humiliates farmers and they tend to lose their confidence in negotiating the price in the market.



## Quality and availability of inputs

Although agrovets are available at an accessible distance, farmers often choose low price seeds and other production inputs, resulting in low production. Similarly, a large number of farmers in the hills are facing problems, including lack of irrigation and technical support from agriculture technicians and experts.

## Unequal gender roles

Division of agricultural works between men and women, is noticeably unequal in the hill districts of the DCA. Women mostly involve in agricultural-related tasks, together with their traditional gender roles due to male out migration and cultural factors. This has increased the work burden of women and has created labour shortage.

## Land scarcity to expand production

While rich families have left their land fallow, poor families face scarcity of land for commercial cultivation.

## Problems of wild animals in the hills and cattle in the plains

Farmers shared the problem of crop depredation by wild animals, particularly monkeys, wild boars and porcupines. They also complained of stray cattle, cows and bull or oxen, destroying their crop in the field. Stakeholders of Barbardiya municipality, Bardiya shared that stray cattle in their municipality has reached the population of more than 2,000. This has added problems of farmers as well as of local government.



## 4.1.2 Marketing

### Effects of import of vegetables from India

This is a common and serious challenge for farmers of the study area. According to them, vegetables from India look fresh for over seven days due to high use of chemicals. But the quarantine office and customs office fail to regulate the quality of these products. Ultimately, due to this unfair competition, Nepalese farmers lose their prices as they have to sell it in lower price than expected.

### Adulteration of products

Though the scale has not been explored, certain commodities are adulterated by farmers, driven by unethical earning motive. For example, turmeric powder is mixed with maize flour and potato pulp with ghee (clarified butter). Adulteration of products in the market creates an environment of mistrust for the product, affecting the business of farmers who are trying to establish themselves in the market for the long term.

### Access to basic infrastructure

In Achham and Doti districts, earthen rural roads do not operate for three or four months in the rainy season. This is the high production season for vegetables and potato. Similarly, the electricity supply is of low voltage. So, the farmers and local intermediaries could not transport to the market or store in a warehouse.

## 4.2 External factors affecting value chain

### Practicality of insurance policy

The current insurance practice is based on either the investments made by the farmers to produce particular crops or on the area under cultivation. In farmers' view, this approach is not practical because the insurance money is not significant in comparison to the huge loss due to crop failure.

### Effect of climate variability

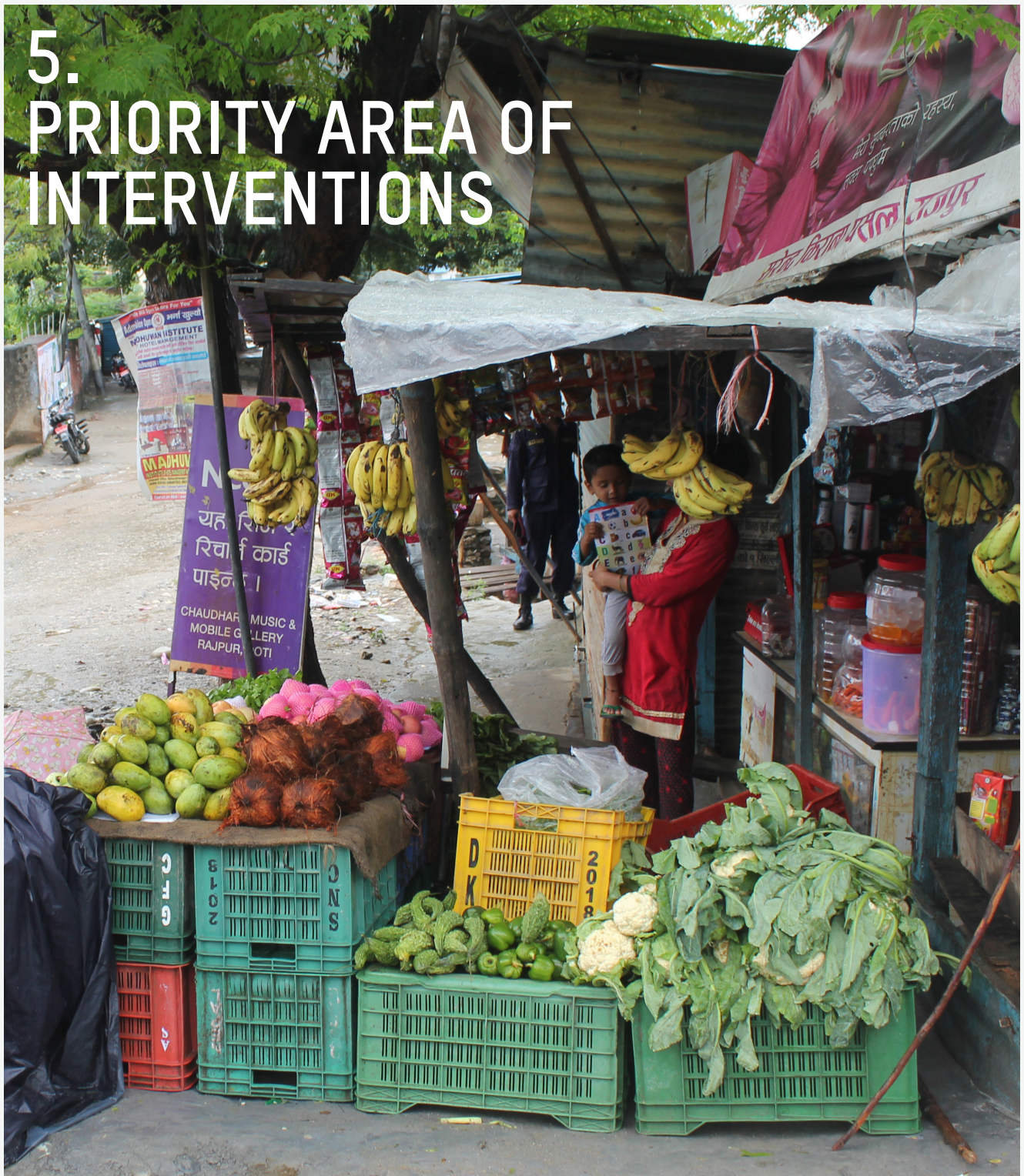
Farmers have already perceived the effects of climate change such as drying of water sources, invasion of weeds, untimely rainfall, and so on. They reported that production of rice and orange has gone down over the years.

### Low motivation of government staffs

The introduction of three levels of governance system has both positive and negative outcomes. For the time being, agriculture officers/technical staffs deployed to local governments are not much motivated to perform their role. They say that they do not have a comfortable working place, they fall in an uncomfortable position when their opinions conflict with those of the people's representatives with regard to prioritization, budgeting and delivery of the programme.







**T**his section describes the necessary interventions based on the value chain analysis of the crops under study, issues and challenges observed in the existing market and institutional context. Priority interventions are identified, remaining within the context, at two levels: short-term and long-term. Short-term intervention include those activities which should be carried out immediately or within 2 years of time, while long-term interventions includes interventions beyond that period. They are presented separately for each node of the value chain: input supply, production, processing and transportation, trading and marketing including wholesale, retail, and consumption.



## 5.1 Short term interventions

### 5.1.1 Production

#### Encourage agrovets towards the sale of certified products

Most farmers seek cheaper inputs, such as seeds, insecticides, pesticides, etc, because the certified or quality ones are costlier. To address this issue, encourage agrovets to sell only certified products, especially by providing orientation training, exposure visits and grants for the purchase of inputs.

#### Educate farmers on the importance of using certified products

Farmers should be oriented in the use of certified products and how they can enhance agricultural productivity. Moreover, the agrovets operating within the working area of the DCA should be mapped and those selling certified seeds and quality insecticides and pesticides identified. Thereafter, the project beneficiaries should be asked to approach these agrovets.

#### Scale out the use of gender-friendly agri-tools

LI-BIRD, a DCA partner, has been distributing efficient and gender-friendly tools such as; small power tiller, harrowing machine and drip irrigation etc. Encourage other farmers to use such tools and provide necessary information regarding their costs, places where they are available and procedures to access them.

#### Support in irrigation

Irrigation remained a major constraining factor for most farmers in the hills. Moreover not many farmers are aware of the use of smart irrigation technologies. So, adoption of low-cost technologies, such as water ponds and drip irrigation and solar lifting system can be piloted in collaboration with the local government.

#### Quickly respond to farmers' demand

Mobilize DCA technical staff to provide timely technical support to farmers. This can reduce loss of crops from pests and diseases. However, for service beyond their expertise, facilitate farmers to coordinate with agriculture experts at the municipality or rural municipality level or to procure services from the private sector.

#### Soil test

Farmers are not much aware of the quality of their soil and the changes in chemical composition of soil over time. So, it is suggested to include this issue in an orientation programme for the farmers who plan to adopt commercial farming. Enhance practical knowledge about the merits and demerits of using chemical fertilizers, insecticides and pesticides. Additionally, encourage farmers to conduct soil test and use biofertilizers.

#### Target to meet the local demand first

Facilitate farmers to increase production by increasing either the volume of production or the number of producers or both. This can be based on the condition of farmers and other inputs (ie irrigation, land, labor) in the working area.

#### Strengthen farmer-to-farmer relationship

Strengthened relationship increases collective bargaining and the volume of product traded in the local market, reduces transportation costs and supports commercial farming. The existing farmer's group and agri-cooperatives can play a role in strengthening this relationship. So, focus on social mobilization to address this issue.

## Capture competitive and comparative advantage

The working area of the DCA provides a unique advantage for agricultural production. When it is off-season in the plains of Terai, there is a season in the hills and vice versa. Farmers from both regions can benefit from the linkage of two different ecological regions. Similarly, facilitate farmers to tap competitive advantage, i.e. capacity to produce vegetables when there is high market demand. Farmers can follow the production calendar and avoid the time of maximum supply. The DCA can facilitate the use of plastic tunnels for high-value off-season vegetables and provide technical support.

## Orient farmers in the cost of production

The current initiative of orientation to farmers in business plans including cost of production is a good start. It is suggested that this initiative be replicated among other farmers either by mobilizing trained farmers to transfer their knowledge or by sharing their knowledge at farmer group meetings. This increases farmer's confidence in production as well as informs them about the cost of production so that they will not baffle from fluctuating price.

## Introduction of climate adaptive crop varieties

As the region has already experienced impacts of climate change, facilitate farmers to adapt technologies and appropriate crop varieties based on their experiences and knowledge. In the hills, farmers demanded drought tolerant crop varieties and in the plains flood tolerant varieties.



### 5.1.2 Processing and transportation

#### Minimize post-harvest loss

Recent research related to developing countries has found the post-harvest losses of roots / tubers fresh vegetables and fruits has reached upto 45% (Kitinoia and Kader, 2015). Similarly, , recent study (Department of Agriculture, GoN, 2017) has revealed that it goes up to 40.96% in case of Cabbage and more than 35% in case of Cauliflower. So, encourage farmers to use crates or local bamboo baskets while carrying tomatoes and to fill sacks properly for soft commodities and be careful while loading or unloading during transportation.

#### Facilitate grading of products

Orient farmers that high-quality graded goods fetch a better price. Similarly, make the local collectors aware that they can get higher price by selling graded products to the traders and that the actors of the entire chain can be benefited.

#### Pilot diversifying of products

There are product diversifying opportunities for milk, chilies and tomato. The project can pilot with milk products in Barbardiya of Bardiya district. However, before starting, ensure which new milk products are on high demand, what price consumers can offer, and what is the quantity of the demanded product is.

### 5.1.3 Trading and marketing

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#### Strengthening marketing centres

Traditional market systems, *haat bazaars*, are well-operating in the plains. This system is good in the sense that it has minimized the role of tiers of brokers. Here, farmers can fix prices of their products and sell them directly to consumers. But *haat bazaars* are being run in a very poor fashion, i.e. agro-products are traded in the open place. Similarly, in both the hills and plains, local collection centres are operating in the cooperative mode (except in Doti, where it is running in private mode). We suggest assessing the performance of both modes of operation and adopt the effective one.

#### Promoting local brands

Identify the uniqueness of products and promote them as a brand, for example, potato of Jayagadh, Achham, green vegetables of Purbi Chowki, Doti, chilies of Barbardiya, and so on. In addition, farmers should be supported on grading of products addressing the consumers need.

### 5.1.4 Policy and institutions

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#### Facilitate to organize multi stakeholder platform (MSP) meetings

Joint meetings should be held with the value chain actors-input suppliers, producers, local collectors, local traders, and value chain enablers, viz DCA, municipalities and rural municipalities, private sector representatives and elected local government officials, to assess the constraints in the existing value chain and to jointly explore solutions. This platform can strengthen the relationship and trust between the actors and the enablers and identify the issues to be addressed.

#### Strengthening the vertical linkage between actors and enablers

The relationship between farmers, local collectors and local traders is interdependent but, usually, it is of coercive nature. To turn coercion into cooperation, frequent meetings among them will be useful. In the meetings, they can assess their respective challenges and explore solutions collectively. Organising multi-stakeholder platform meetings can be one option for this.

#### Feasibility study of cold storage

Establishment of cold storages was demanded by most of the actors and enablers in the study districts. It is suggested to conduct a feasibility study to know the priority locations, capacity, costs, operation modality and potential collaborators. In case of establishment of cold storages, DCA might have to go beyond its core working area that can also contribute to the road corridor approach in the future.

#### Strengthen the capacity of staffs stakeholder

Staffs and lead farmers were found oriented in the overall concept of the value chain, but they lack understanding of the challenges in the value chain and do not know how to respond.

#### Make value chain actors aware of the access to services

Basically, small farmers are less aware of what services (material, technical, grants and subsidies) they can get from the municipalities and rural municipalities, PM-AMP, banks, co-operatives, and so on and what the process of getting these services is. So, making farmers aware of the services, process and time can be helpful.



## 5.2 Long-term interventions

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### 5.2.1 Input supply

#### Increase access to financial capital

Local cooperatives are functional in villages, and banks either have been established or are in the process of being established at local level. This provides opportunities to increase access of poor farmers to financial capital, but they need facilitation support in processing the loan including the service of loan without collateral.

#### Assess existing support mechanism

Taking the reference case of chili seed support in Barbardiya municipality, Bardiya, we suggest assessing the support mechanism. For example, in Bardiya, a local cooperative expressed its view that if chili seedling production work collaborated with them, it could benefit farmers. Furthermore, it can support the institutional strengthening of cooperative, and non-beneficiaries of the project can also take advantage of this service. This modality can be more sustainable. While the priority should be given in supporting the farmers need, strengthening capacity of the service providers (cooperative in our case) to ensure sustainability of the goods and services is immensely important.



### 5.2.2 Production

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#### Addressing out-migration

Alike every sector, out-migration of youth particularly men, affects the overall agriculture arena. To retain men in the district and eventually reduce the work burden of women, men should be made aware about the potential of commercial farming and encourage towards it. It is a challenging task. So, returnees from foreign employment who are successfully engaged in commercial agriculture could act as motivators for the youth.

#### Develop production pockets to production blocks

In line with the government PM-AMP, DCA can facilitate farmers to bring more land under production to upgrade the current pocket (ie 10 ha of land under commercial cultivation) to block level (i.e. 100 ha of land under commercial cultivation). This would make visible contributions to the commercialization of agriculture.

### 5.2.3 Processing and Transportation

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#### Labeling and packaging of product

With increased volume and/or processing of products, labeling increases the market competitiveness of products. Supermarkets prefer to sell only packaged and labeled products. Farmers and local collection centers can tap such opportunities in their areas. In addition, farmers should be supported on accessing technologies for efficient production and processing.



## 5.2.4 Trading and marketing

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### Initiate establishment of cold storages

Based on the findings of a feasibility study, DCA can pilot establishment of cold storages. Before initiation, it must be clear on who operates it and how it is operated. The management modality including governance structure should be clearly defined prior to such piloting initiatives.

### Link traders with collectors and farmer's groups

Though the scale of trading volume is small, one collection centre in Doti, Prasamsha collection centre in Rajur, supplies vegetables to large institutions, eg Seti Technical College, Smriti Secondary School, Army barracks, Police barracks. This has ensured regular supply of products from farmers to the collection centre and then from the collection centre to these institutions. This has benefited all actors. This approach can be replicated to other districts.

## 5.2.5 Policy and Institutions

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### Explore opportunities for access to cultivable land

In the hills, on the one hand, the potential beneficiaries do not have adequate land, and, on the other, land belonging to rich families is left fallow. The DCA can explore opportunities for the management of such land in coordination with the local government. One option could be implementing the traditional practice of *Maate* (a form of land contract).

### Collaboration with municipalities and rural municipalities

The DCA can collaborate with the local governments and PM-AMP. The local governments have budget, as well as are keenly interested to develop the agriculture sector, and PM-AMP's thrust is on the value chain approach. So, collaboration between the DCA and these institutions can create a synergistic impact.

### Link the GIFT project with the value chain

The GIFT project has promoted creativity and innovation, together with recognition of partner NGOs. This small scale projects was found to be important as it has helped to create the feeling of ownership of partner NGO towards the program. Along with this line, we suggest aligning this project towards overcoming the challenges in the existing value chain, for example in managing fallow land, improving the irrigation systems, in adding value to products, and so on.





# 6. SUGGESTED AGRO VALUE CHAIN MODEL OF DCA

Figure below presents a model of the agro value chain development for DCA. The value chain should integrate actors, functions and constraints. The problems and opportunities at each nodes of the value chain including actors, their role, profitability margin should be carried out for identifying interventions. In addition, the enablers of the particular value chain should be mapped including their functions for building synergy and partnership.

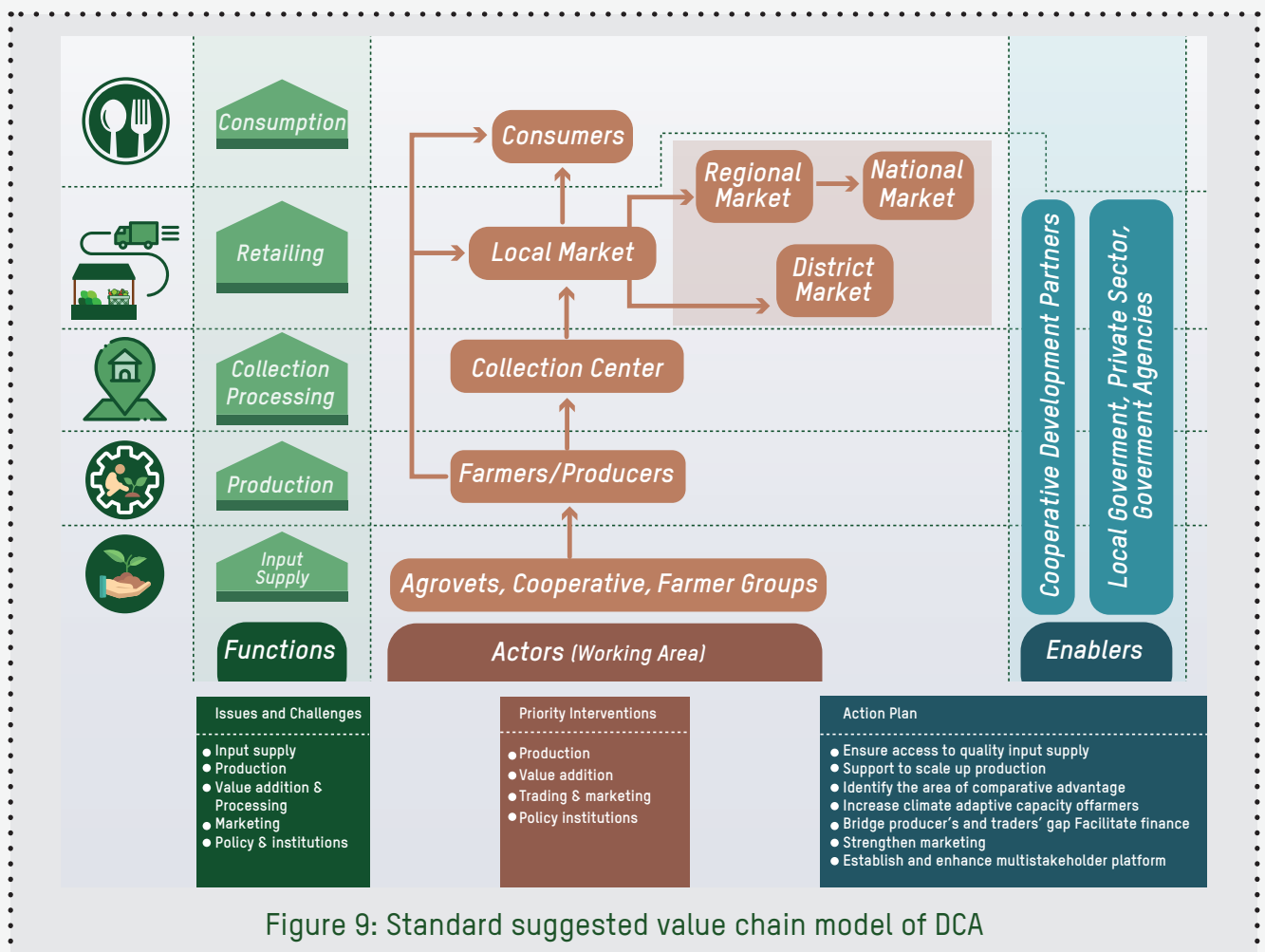


Figure 9: Standard suggested value chain model of DCA





## 7. ACTION PLAN

This section provides an action plan / operational plan as a way forward. Then, strategies are suggested by respective actions separately for each node of the value chain. The suggested activities only indicate the area of action and these are not binding. Similarly, climate change and gender are cross-cutting issues in the entire value chain. So, they are not mentioned separately in the strategy column but reflected in the suggested action plan where appropriate.

Suggested strategy	Suggested action	By whom (lead role)	When
Ensure access to quality input supply	<ul style="list-style-type: none"> <li>• Orientation to agro-vets proprietors for sale of certified products only</li> <li>• Scale out gender friendly agri-tools (as piloted in Doti and Achham by LI-BIRD)</li> <li>• Prepare a list of input service providers with contact details and provide to farmer/ group</li> </ul>	Partner NGOs DCA	Short-term
Support to scale up production	<ul style="list-style-type: none"> <li>• Social mobilization – motivating farmers for commercial production/off-season production including tunnel farming</li> <li>• Social mobilization – strengthen farmer to farmer relationship for sharing of knowledge, plan for cultivation and collective sale</li> </ul>	Partner NGOs	Short-term

Suggested strategy	Suggested action	By whom (lead role)	When
Identify the area of comparative advantage	<ul style="list-style-type: none"> <li>• Orient farmers on periods of peak demand and high price of the products</li> </ul>	Partner NGOs	Regular
Enhance competitive capacity	<ul style="list-style-type: none"> <li>• Conduct study on the cost of cultivation of selected commodities</li> <li>• Orient on cost of production and demonstrate the ways they can reduce costs</li> <li>• Identify options or suggests mechanism for reducing cost of cultivation</li> </ul>	Partner NGOs  External consultant	Short-term
Increase climate adaptive capacity of farmers	<ul style="list-style-type: none"> <li>• Assess the effect of climate change on agriculture practices and suggest on climate-smart farming practices</li> <li>• Promote climate-smart farming practices (as recommended)</li> <li>• Suggest climate adaptive varieties – applicable to dry areas for hills and water-logged areas in plains</li> </ul>	External consultant	Long-term
Minimize post-harvest loss	<ul style="list-style-type: none"> <li>• Orientation on grading of agro-products (e.g. tomato, fresh vegetables) and allocate rates as per grading the product</li> <li>• Orient farmers on use of proper packaging and handling during transportation</li> <li>• Support farmers on post-harvest equipment and infrastructure on cost sharing basis</li> </ul>	Partner NGOs	Short-term
Bridge producer's and traders' gap	<ul style="list-style-type: none"> <li>• Develop middlemen (may be from active farmers or from existing local collectors) in hills</li> <li>• Management of local marketing system – <i>haat-bazaar</i></li> </ul>	External consultant	Short-term
Facilitate marketing of products	<ul style="list-style-type: none"> <li>• Pilot running collection centre from private mode (where community-based are not functional)</li> <li>• Support to develop basic infrastructure (roofing) in <i>haat-bazaar</i> in collaboration with local government</li> <li>• Identify uniqueness of products (e.g. potato from highlands of Achham) promote among consumers</li> <li>• Conduct assessment study for the establishment of a cold store</li> </ul>	Partner NGOs	Short-term
Strengthen vertical linkage among VC actors	<ul style="list-style-type: none"> <li>• Social mobilization – develop two-way communication among farmers/local collectors and local traders/wholesalers</li> </ul>	NGOs partner	Regular

Suggested strategy	Suggested action	By whom (lead role)	When
Increase access and develop the capacity of stakeholders	<ul style="list-style-type: none"> <li>• Aware farmers and other actors regarding grants/ subsidies / loans of government</li> <li>• Provide concepts of value chain approach in agro-products to staffs/stakeholders</li> <li>• Organize Multi-Stakeholder Platform (MSP) meeting at least in six months</li> </ul>	DCA  External Consultant	Long-term
Work in collaboration with local government on agriculture development	<ul style="list-style-type: none"> <li>• Orient local government leaders and officials about agriculture development</li> <li>• Develop and implement projects/programme jointly with local government</li> <li>• Support local government on the development of agricultural policies/plan</li> </ul>	DCA  External Consultant NGO Partners	Short-term
Promote low-cost irrigation technology	<ul style="list-style-type: none"> <li>• Support on the construction of water harvesting (water tanks), water storage technology (water storage ponds)</li> <li>• Aware on efficient use of available water</li> </ul>	NGO Partner	Short-term
Retention of soil quality	<ul style="list-style-type: none"> <li>• Facilitate farmers for soil test and do necessary treatments</li> <li>• Encourage farmers on the use of organic fertilizers and bio-pesticides</li> </ul>	External consultant	Long-term
Scale up production – volume and area	<ul style="list-style-type: none"> <li>• Identify the value chain constraints in existing products and assess the potential of a selection of (new) commodities – for example, Soyabean in Doti</li> <li>• Facilitate for land-poor farmers access to land (local <i>maate</i> system or in lease)</li> <li>• Strengthen existing farmer’s groups/co-operatives for coordinated production</li> </ul>	NGO Partner  External consultant	Long-term
Increase access of farmers to financial institutions	<ul style="list-style-type: none"> <li>• Social mobilization – the process of accessing loan from local banks</li> <li>• Develop social mass awareness tools such as short video for financial literacy</li> </ul>	NGO Partner  DCA	Short-term
Upgrade local collection practice	<ul style="list-style-type: none"> <li>• Support on renovation of the collection center, wherever needed</li> <li>• Orientation to local collectors on the reduction of losses, grading and sanitation of products</li> <li>• Use of vehicle in vegetable collection and marketing</li> <li>• Facilitate collectors for proper disposal system for decayed/unsold products. For example: making fertilisers or can be processed into dried vegetables, if applicable</li> </ul>	DCA  NGO Partner	Short-term Long- term



Suggested strategy	Suggested action	By whom (lead role)	When
Explore the possibility of promoting road corridor approach in trading/ marketing	<ul style="list-style-type: none"> <li>• Identify and document information related to the state of production, major collection/marketcentres, and potential main markets to materialize road corridor approach</li> <li>• Based on the assessment study – initiate the establishment of two cold-storages (one hill and the next in plain districts)</li> </ul>	NGO Partner  External consultant	Short-term Long-term
Strengthen coordination and collaboration	<ul style="list-style-type: none"> <li>• Coordinate and collaborate with the local rural / municipality and provincial government to materialize road-corridor approach</li> <li>• Align priority of activities in line with government’s PM – AMP and expand pocket level production to block level</li> </ul>	NGO Partner  DCA	Short-term
Improve access to finance	<ul style="list-style-type: none"> <li>• Support Agrovet- on access to finance</li> <li>• Support farmers to access finance</li> <li>• Support farmer organization such as cooperatives – collection center, processing units</li> </ul>	DCA	Long-term
Support on building infrastructure, machinery, equipment and inputs	<ul style="list-style-type: none"> <li>• Support farmers in buying machinery equipment and inputs</li> </ul>		

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## ANNEX 2: Terms of Reference

### Value Chain and Market Development Strategy of DCA Nepal in the selected districts for selected agriculture commodity in Province 6, 7

#### Context and Background

Smallholder farmers are the backbone of the Nepal's economy, particularly rural, in the context where small holding agriculture contributes 33% of total Gross Domestic Product (GDP) of the nation. However, the agriculture sector is largely subsistence and traditional, and characterized by a weak value chain. The farmers have little know how about the improved technologies; poor capacity to access such technologies, if any; lack of market information; and weak market access. Farmers are not getting appropriate return of their investment. Government and many development agencies are promoting agriculture sector for improving livelihoods of rural poor.. However, in absence of proper planning most of the initiatives are not able to deliver indented outcomes. Implementation of project activities without proper pre-study and lack of capacitated human resource may result into weak performance.

Agriculture Development Strategy 2013 has envisaged to transform Nepal's farm sector in the face of common challenges such as climate change, low productivity and poor market access. The ADS has targeted boosting the average annual growth rate to 5% from the present 3% for the agricultural sector and increase land productivity to \$5,000 per hectare from the current \$1,600.

In line with the Agriculture Development Strategy, DCA Nepal aim to improve livelihoods of the rural communities by increasing income and employment opportunities through strengthening value chain of selected agriculture commodities in its project districts. The project districts are Doti for Potato, Vegetables and Soya; Dailekh for Potato, Vegetables and Peanut; Achham for Ginger, Turmeric and Vegetables; Kanchanpur for Onion and Fish; and Bardiya for Chillies and Dairy. As each district has different priority commodity, it is a complex situation and challenging for the project to deliver its activities in an effectively and efficiently. In order to develop a holistic approach of project delivery, DCA seeking for a consultant to develop Value Chain and Market Strategy for DCA Nepal. The strategy is supposed to provide guidance for effective and efficient delivery of the project activities.



## Objectives of the Assignment

This work aims to gather and analyze strengths, weaknesses, challenges and opportunities of the prioritized commodities of the selected districts; DCA's livelihood strategies, and find the areas of work for DCA at community, province and at federal level. The other objectives of this work are:

- To identify areas of engagement and contribution by DCA Nepal in value chain and market development at local, provincial, and at federal levels
- To recommend DCA the doable actions in strengthening the value chains of prioritised agricultural commodities, and its marketing

This assignment is to provide sufficient understanding on value chain dynamics of the selected agricultural commodities in the project area; explore key strategic areas and recommend possible activities for strengthening respective value chains. Similarly, the study also noticeably highlights the involvement of various stakeholders on identified value chain products including private sectors from very local level to municipalities, and at provincial levels. The farmers groups are the members of Cooperatives – how they can be benefited getting the services from agro-vet, collection centre and cooperative.

## Scope

The study must cover but not limit to the following areas:

- Review plan, programmes, strategies, guidelines of DCA overall in Livelihood sector including value chain and market, climate resilient, strategic plans
- Review Agriculture Develop Strategy of Nepal
- Discuss with Rural Municipality, Municipality and Provincial Governments on their plan and priorities on agriculture sector
- Analyse complimentary roles of local governments in strengthening the value chain, and market
- Identify actors, enablers and stakeholders of the value chain, and market and carry out SWOCC analysis for strengthening the value chains.
- Within the project area, identify major production pockets, growth potential, market trends & competitiveness of selected value chains (supply and demand), how best can be fitted the corridor approach (Doti – Dailekh, Achham), including its future prospects within the area and beyond
- Analyse and recommend areas of partnership with different CSOs and local bodies

## Methodology

Both primary and secondary data collection methods and tools will be used in the study. Based on review of relevant documents, interaction with the stakeholders and findings from the field, presentation will be made within the DCA team to define position of DCA Nepal on livelihood improvement through value chain strengthening. Field level interaction with farmers groups, local government bodies and respective ministries at the province level will be done in at least two (2) working districts from hilly districts and one from terai districts. A draft strategy will be developed and shared with DCA Nepal for their review and inputs. Incorporating the feedbacks, the strategy will be finalised.

## Deliverables

The service provider is expected to deliver the following listed deliverables:

- Inception report (digital copy). The inception report should cover the methodologies and work plan.
- Interim report: Raw Data double entered, Digital and hard copy of the data collected and analysed, models, diagrams including photographs & contact list of interviewees and workshop participants and key traders.
- Draft report: Value Chain Strategy Report covering nine Agricultural Commodities
- Final report.

The study not exceeding 30 page (including Annexes) and should contain following sections:

- Executive Summary
- Background
- SWOT analysis
- Value Chains MAPs
- Stakeholders mapping
- Priorities of local and provincial governments
- Area of interventions of DCA Nepal
- Short term and long-term action plans
- Conclusions and Recommendations
- References

## Qualification of Consultant

This document will be produced by a consultant who has minimum Masters' degree in Natural Resource Management, Forestry, Agriculture, Business Studies or related field. S/he should have at least seven years of relevant experience in forest and agriculture product-based value chain analysis and strengthening will be selected for the assignment as the team leader. Experiences on technical back-stopping support on value chain strengthening, private sector promotion and previous involvement on similar nature of project is essential.

The consultant will be primarily responsible for sub-sector/commodity prioritisation following participatory and consultative processes. Conduct value chain analysis and prepare value chain strengthening plan, with clearly defined role and responsibilities of different value chain actors, enablers and stakeholders, including support necessary from project. S/he should be able to interact with a variety of stakeholders and should have excellent writing and speaking skills in

## Roles and Responsibilities

The Consultant will be responsible for:

- Review of the relevant policies, program and other documents
- Consultation and development of work plan and sound methodology for data collection, submit it as brief inception report
- Consultation and discussion with DCA team and partners in the field
- Collection of the information, compilation and analysis
- Debriefing preliminary finding to DCA
- Timely submission of the draft and final report in prescribed standard format and quality including all the raw data generated during this assignment as well as incorporating feedbacks and inputs
- Managing all the needful logistic support for the completion of this assignment including field visit
- Update and communicate with contact person regularly on the progress

DCA will be responsible for:

- Providing policy and program documents to the Consultant and briefing on the expectation of the assignment
- Providing the concept behind this assignment to the consultant
- Necessary (technical and financial) support for the field and coordination in the field
- Timely support, suggestion and feedbacks and coordination with stakeholders as and when needed
- Coordinate responsible and concern persons within DCA
- Arranging the de-briefing (presentation) session at DCA
- Track overall progress of the study
- Lodging and transportation will be bared by DCA based on the original invoices.
- DCA will provide the daily allowance, as per DCA policy, for the field trip outside Kathmandu valley.

## Timeframe (revised for final contract)

The final version should be received within 55 days starting from the day of agreement.

ToRfinalisation and approval	15 <sup>th</sup> June
Consultant selection process Finalisation	10 <sup>th</sup> July
Contract Date	16 <sup>th</sup> July
Submission of Inception report	30 <sup>th</sup> July
Documents review and field information collection	15 <sup>th</sup> August
Preparation of first draft	30 <sup>th</sup> August
Presentation of findings to DCA team/feedbacks	2 <sup>nd</sup> September
Final submission after incorporation of comments	30 <sup>th</sup> September



## ANNEX 3: Checklist for field consultation

### A. Producer groups

#### 1. Existing Practices

a. Production Inputs ,b. Technological support ,c. Marketing (process and mechanisms)

#### 2. Problems and Challenges

a. Producers,b. Technologies, c. Market

#### 3. Support needed/required

Marketing actors (Collectors, wholesaler)

### B. Commodities involved (related to our products)

#### 1. Purchase process/mechanisms

a. Farmers, b. Collectors

#### 2. Pricing determination process

#### 3. Problems and Challenges needed

#### 4. Future support

### C. Partners, line agencies

### D. Existing Practice on livelihoods improvement

### E. Problems and challenges

a. Production, b. Marketing, c. Value addition, d. Support services

### F. Organizational priority for improving livelihoods

### G. Local & provisional government efforts

### H. Other partners interventions and working area

### I. Potential area of production of selected commodities

### J. Interventions required

## Common for all actors / stakeholders

- Background and warm up question: general socio-economic context
- General context of production/ value addition/ marketing
- Mode of farming: traditional / commercial
- GESI dimension: status of engagement of women/ dalits/poor/ minority groups
- Status of development of market infrastructures: collection centre, road network, cold stores
- Access to: information, technology, finance and other services
- Identifying competitors / competitive capacity and comparative advantages
- Policy and institutions: opportunities and constraints
- Role of stakeholder – priority area of engagement
- Identification and prioritization of stakeholder
- Priority area of intervention: what, why, how, by whom and when
- Sustainability of intervention
- Documentation of cases: success and failure both types

## Input supply

- Availability of input suppliers and input types
- Category of inputs – service, technology, materials – seed/pesticides/fertilizers ...
- Quality of inputs – e.g. certified seeds
- Priority area for improvement / intervention

## Production

- Relative mapping of producers: large, medium and small
- Share of agriculture as family livelihood and income as per the mapping
- Mode / scale of production (traditional / commercial)
- Awareness of producers towards - cost / quality/ value addition/market
- Knowledge on - government services / support (insurance, grants, subsidies, ...)
- Sale of products – organized / unorganized/ direct or through intermediary
- Technical knowhow related to production and value addition at local level
- Knowledge about market information
- Explore role of farmers groups / co-operatives
- Opportunities and constraints faced by producers and way forwards
- Priority areas for further intervention – immediate / long term

## Value addition

- Existing state of value addition at different level - grading, packaging, labeling, branding
- Possibility of processing – opportunities and constraints: quantity, skill, technology, investment
- Market of the value-added product
- Quality and hygiene issue

## Intermediary / transportation

- Role of middlemen – self-perception and perception of other actors
- Management of role of middlemen
- Mode of transportation –
- Opportunity/constraints for loss during handling
- Quantity of losses in the process of handling – farmers to consumers

## Trading

- Perception of production, (quantity, quality), value addition, price and market
- Share of local production and import figures – quantity, season and others
- The comparative advantage of local products
- Opportunities / constraints/ threats for the traders
- Competitors / collaborators: local and external

## Consumers

- Perception towards actors of value chain
- Preference check - price, quality, service
- Suggestions for commercialization / modernization

## Enablers / Stakeholders

- Expertise / Capacity of HRs on value chain approach
- Prioritized crops – production sites, possibility of expansion
- Delivery mechanism – strengths and weakness
- Collaboration with local government/ government and non-government organizations
- Opportunity for technology / innovation / value addition / market development

## ANNEX 4: Consolidated list of DCA intervention

### Bardiya district

#### Input supply:

- Mapping of agriculture service providers

#### Production level:

- Training –
  - Off seasonal vegetable farming
  - Climate-smart agriculture farming practices
  - Post-harvest handling
- Direct support (inputs (seeds), plastic house construction)

#### Marketing

- Support for agriculture product collection centre and local hat bazaar management
- Product diversification and marketing training (Ketchup, sauces, Pickle)
- Market study of Chilli and tomato for sustainable marketing

#### Capacity building

- Saving and credit management and financial literacy training
- Orientation on cooperative farming practices and training on cooperative management
- Financial literacy training to farmer groups for increasing access to financial services
- Training on value chain management and business plan development at the group level
- Exposure visits in the value chain

#### Linkages

- Interaction meetings among value chain actors at various levels-
  - between producer and buyers for contract vegetable farming
  - between farmers and service providers



## Doti district

### Production level:

- Introduce of low-cost irrigation technologies benefiting to farmer's group such as Plastic Pond, Multiple use Water System and recharge pond.
- Orientation on integrated home gardening
- Identification and implementation of champion climate resilient technologies and practices

### Capacity building

- Training on improved post-harvest technologies
- Farmers business school training
- Training on the improved farming system to Lead Farmers
- Value chain development training for staffs and stakeholders
- Organize learning and sharing visits for related stakeholder and market actors
- Village council level training and community level orientation

### Trading/Marketing

- Facilitation, coordination, networking for building marketing linkages
- Collection Centre construction
- Form market planning committee and train them in managing collection center
- Cooperative business plan development

### Linkages

- Coordinate and linkages meeting with service provider & target group
- Conduct interaction meeting with financial institution and target group
- Link farmers group & cooperatives with crop insurance agent

### Climate-specific

- Training on weather/climatic variability and CCA/DRR
- Support to vulnerability assessment and develop Village council level Local Disaster and Climate Resilient Plan (LDCRP)

### Policy advocacy

- Lobby and advocacy action at rural municipality/ ward level
- Support to presser group
- Media mobilization for awareness and right holders issue rise

## Kanchanpur

### Production:

- Groups formation, network strengthening
- Seasonal and off seasonal vegetable seed, treatment and poly house technology support
- Training to the vulnerable group for river belt vegetable farm including sugarcane seed support for developing a farm in the area of river embankment for protection and livelihood promotion
- Training to make compost manure and adopt Improved Pesticide Management (IPM)
- Support to onion production pocket area
- Training on mushroom production, seed support along with the seed production lab fitting, technique and equipment support for the mushroom dryer as well branding and marketing through cooperatives; coordination and linkage with local line agencies
- Integrated farm development

### Trading

- Training on market management and value chain
- Support to establish a collection centre and train locals for its operation
- Training on promoting market and value chain of identified products
- Developed business /strategy plan of existing produces
- Interaction events with Insurance Companies, Cooperative and Govt. Stakeholders
- Support essential equipment to the collection centre (Vegetable carrying vehicle)
- Linkages establishment:
  - Among value chain actors for market linkages
  - between farmer and markets (buyers)
  - With marketing of integrate farm
  - With area livestock office and DLSO animal treatment and another support mechanism
- Marketing of pocket area of onion farming through media

### Accham

- Farmer groups get support to increase the agriculture productivity
- Seed and Fertilizer Support to Farmer Groups
- Micro Irrigation and gender friendly tools support
- Improved Coordination, linkage and extension service to farmer Group
- Coordination among value chain actors
- Collaboration and advocacy for services at the rural municipality
- Radio programs

## ANNEX 5: Glimpse of Consultation with Stakeholders



Stakeholder meeting at Kanchanpur district



Stakeholder meeting at Doti district



Value chain Mapping with participatory method



Value chain Mapping process



Stakeholder meeting at Acham district



Staff consultation meeting at Doti





