A Report on

Market Data for Private Sector Investments in Nepal

Agriculture Sector

Prepared By

With the support of DFID Nepal

In partnership with

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ABBREVIATIONS

ADB	Asian Development Bank
ADS	Agricultural Development Strategy
B2B	Business to Business
B2C	Business to Customer
CAGR	Compounded Annual Growth Rate
CG Seeds	Chaudhary Group Seeds
CIIE	Centre for Innovation Incubation and Entrepreneurship
CTC Tea	Crush Tear Curl Tea
D/E ratio	Debt Equity Ratio
DDC	Dairy Development Corporation
DFI	Development Finance Institutions
DFID	Department for International Development (also UKaid)
EPZ	Export Promotion Zones
EU	European Union
FAO	Food and Agricultural Organisation
FDI	Foreign Direct Investment
FICCI	Federation of Indian Chambers of Commerce and Industry
FNCCI	Federation of Nepalese Chambers of Commerce and Industry
FY	Fiscal Year
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
HACCP	Hazard Analysis Critical Control Point
HIMCOOP	Himalayan Tea Producers Cooperative Limited
HNI	High Net Worth Individual
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
INGO	International Non-Governmental Organisation
INR	Indian Rupee
IPO	Initial Public Offering

ISTA	International Seed Testing Authority
JV	Joint Ventures
Kg	Kilogram
Km	Kilometre
Ltd.	Public Limited
MAP	Medicinal and Aromatic Plant
MCC	Milk Chilling Centres
MCR	Market Capitalisation Ratio
MEDEP	Micro-Enterprise Development Programme
MoAD	Ministry of Agricultural Development
MoI	Ministry of Industry
MPCS	Milk Producers Cooperative Societies
MSFP	Multi Stakeholder Forestry Programme
Mt	Metric Ton
NAP	National Agricultural Plan
NASDP	National Agricultural Development Priority
NASSCOM	National Association of Software and Services Companies
NEPSE	Nepal Stock Exchange Limited
NGO	Non-Governmental Organisation
NPR	Nepalese Rupee
NRB	Nepal Rastra Bank
NSB	National Seed Board
NSCL	National Seeds Company Limited
NTCDB	National Tea and Coffee Development Board
NTDC	Nepal Tea Development Corporation
NTFP	Non-Timber Forest Product
OMFED	Odisha State Cooperative Milk Producers' Federation Ltd
OPV	Open Pollinated Varieties
PAN	Permanent Account Number
PE	Price-Earnings Ratio
PPP	Public Private Partnership
Pvt. Ltd.	Private Limited
R&D	Research and Development
RoE	Return on Equity
SAARC	South Asian Association for Regional Cooperation
SEZ	Special Economic Zones
SME	Small and Medium Enterprise
TiE	The Indus Entrepreneurs
TR	Turnover Ratio
TVTR	Total Value Traded Ratio
UNDP	United Nations Development Programme
US$	United States Dollar
USAID	United States Agency for International Development
USP	Unique Selling Proposition
VAT	Value Added Tax
WACC	Weighted Average Cost of Capital

BACKGROUND OF THE STUDY

With the recent political stability and favourable macro-economic environment in Nepal, there has been a spurt in growth of the agricultural sector. It contributes 39% of Gross Domestic Product (GDP) and 66% of employment in the country. Significant as this contribution is, there is both a huge need as well as an opportunity to catalyse the growth of businesses in agriculture to accelerate transition from subsistence to commercial-scale activity in the sector. As elsewhere in the developing world, access to finance is the biggest constraint faced by entrepreneurs in Nepal. Private sector providers of risk capital such as venture capital funds, private equity funds, impact investors and SME-lending facilities can play a pioneering role in addressing this need and building the case for the "business opportunity" of investing in Nepal. Early successes in investments can unlock further mainstream and domestic capital; and form the corner stone of a strong and resilient private sector in Nepal, which will in turn drive inclusive growth.

However, one of the biggest challenges investors in Nepal face is a lack of clarity around market landscapes, business profiles, valuation benchmarks and exit opportunities. ***Market Data for Private Sector Investments in Nepal*** is a first of its kind attempt towards bridging this information divide. It seeks to act as a guide to foreign and domestic investors by providing insights into the landscape of agribusiness activity in Nepal. These insights include structure of the sector, state of the agricultural value chain, identifying more promising investment opportunities, and evaluating capital flow and valuations in the sector. The report has been compiled using data from several credible sources, including existing research literature and industry publications. The secondary data was validated and additional information was gathered by engaging with key stakeholders in the sectors such as industry players, experts, financial institutions, policy makers, development finance institutions and sector associations. The report is constrained by limited consistent availability of data. In absence of hard and consistent data in some cases, the report relies on data from the field and relevant, triangulated proxy data from secondary sources.

METHODOLOGY AND APPROACH

The report is based on (a) primary data from interviews and focus group discussions with enterprises, experts and policy-makers and (b) secondary data from Dolma Impact Fund and relevant government and policy publications in Nepal. The report draws on data derived from sources such as Nepal government publications, data from World Bank and Intellecap's proprietary knowledge base.

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The report is constrained by limited consistent availability of data across all sectors. In absence of hard and consistent data in some sectors, the report relies on data from the field and relevant, triangulated proxy data from secondary sources. It must also be noted that report does not extensively cover all the value chain elements in a sector - only promising, potentially high growth sectors are analysed. Users of this report should be cognisant of these data limitations.

CURRENCY EXCHANGE RATE

1 US$ = 94.19 Nepalese Rupee

Agriculture in Nepal

Huge demand-supply gap; leading to import of semi-processed and processed food worth over **US$ 250 million** a year

Overall market opportunity of **US$ 1.3-1.4 billion** in spices, MAPs, fruits processing and tea sub-sectors

Government is supportive of foreign investors; sector has see over **US$ 13 million** in FDI inflows since 2008

Most attractive investment opportunities can be seen in **spices, tea and medicinal and aromatic plants** sub-sectors

14% to 21% is the estimated hurdle rate for agribusinesses across different sub-sectors

1. Executive Summary

Sector has positive outlook in the medium to long term as it evolves from subsistence to commercial agriculture

Agriculture is the backbone of Nepal's economy, and drives GDP growth, employment and inclusive development. The sector is gradually transitioning from subsistence to commercial-scale agriculture. This growth is driven by the changing consumer landscape in Nepal leading to growing domestic demand; rising demand for Nepalese products in international markets; and increasing thrust from Government on commercialisation of agriculture.

While the overall outlook for the sector is positive, it does face significant systemic challenges. These include low usage of technology and agri-inputs; fragmented land-holdings; lack of skilled manpower; inefficient value chains and low degree of value-addition or processing; infrastructure and terrain-related challenges; and political risk.

Significant demand-supply gap exists in the agricultural sector; providing an opportunity for greater private sector activity

Domestic production and processing capacities are insufficient to cater to rising demand for food in Nepal. As a result, Nepal is import reliant for meeting demand and annually imports over US$ 250 million worth of semi-processed and processed food[1]. This gap has driven Nepalese agriculture to become more organised and incentivised entry of private sector industries. However, the lack of access to capital, especially risk capital in early stage of businesses is a considerable hurdle to the growth and development of agriculture. Hence, there is an opportunity to catalyse the growth of agribusinesses by making stage-specific access to financial and non-financial support available.

More agribusiness activity can be seen in seeds, dairy, fruits processing, medicinal and aromatic plants, spices, and tea sub-sectors

Comparing the relative state of value chains and activity in agricultural sub-sectors shows more commercial and organised activity in seeds, dairy, fruits processing, MAPs, spices, and tea sub-sectors. Agribusinesses in seeds and dairy sub-sectors cater to domestic markets; while those in fruits processing and tea cater to both domestic and international markets; and in MAPs and spices sub-sectors cater primarily to international markets.

There are over 214 medium and large agribusinesses in Nepal, most of which work in these afore-mentioned sub-sectors and have fixed capital investments of more than ~US$ 300,000. While agribusinesses are growing in response to increasing demand and better support from public sector; they are also grappling with several value-chain inefficiencies especially in farming and distribution that impact their growth.

Regulatory regime presents a mixed bag across sub-sectors, having most positive impact on tea and spices; and least on seeds and dairy

Nepal broadly follows a free markets approach to policy and regulation in Agriculture. Policy-making and regulation are centralised and follow a top-down approach. National Agricultural Plan (NAP) 2005 is the guiding roadmap for the sector currently, and will be replaced by the Agricultural Development Strategy (ADS) soon. The ADS is expected to be more private-sector friendly and encourage the role of government as "facilitator" for growth of the sector. Agribusinesses in tea and spices sub-sectors

[1] Trade and Export Promotion Centre Nepal, database accessed in March 2014

see more positive impact of regulatory regime while seeds and dairy sub-sectors see least, primarily due to competition from government-owned industries that compete with the private sector.

Government is supportive of Foreign Direct Investments in agriculture, with 100% foreign shareholding allowed in most agribusinesses

100% Foreign Direct Investment (FDI) is allowed in most agricultural sub-sectors except those categorised as cottage industries. As a result of a liberal FDI policy, most reported commercial funding of agribusinesses is through Foreign Direct Investments route. Over US$ 13 million of FDI has been channelled into agriculture by foreign entities from over 20 countries since 2008[2]. The highest capital inflows are reported from India, China, Denmark, and USA into agribusinesses in tea, dairy, MAPs, and fruit processing.

Private equity investors can play a catalytic role in commercialisation of the agricultural sector

One of the biggest hurdles faced by agribusinesses in Nepal is the lack of access to capital to support their growth. The supply of debt is inadequate with 56% of all businesses in Nepal reporting that they are not served adequately by banking infrastructure, and only 1% having a commercial bank as source of financing[3]. While some amount of debt support might still be accessible to established businesses; the current system has little or no provision for early and growth stage businesses. Hence, private equity investors can provide access to much needed risk-capital for such early and growth stage agribusinesses. In doing this, investors can catalyse and accelerate the evolution of Nepal's agriculture from subsistence to commercial-scale.

Aside from financial support, agribusiness promoters are also looking to private equity investors for technical assistance, linkage to foreign technology and processes, and access to international markets.

Private equity investors are more likely to find attractive investment opportunities amongst agribusinesses working in spices, tea and processed MAPs segments

These sub-sectors represent a combined market opportunity of approximately US$ 1 billion[4] in Nepal and in international markets. The key reasons for this higher market opportunity include the inherent high value of raw or unprocessed agri-commodity as well as better organised procurement and distribution value chains. Further, these sub-sectors cater to international markets which results in better prices as well as higher degree of predictability of revenues. As a result, high potential agribusinesses that can take in private equity capital structured as minority stakes are more likely to be found operating in these sub-sectors.

Valuation of agribusinesses in Nepal is challenging due to lack of historical data; however this also gives early entrants in the private equity space an opportunity to buy stakes at lucrative prices

There is little public information available on past equity investments into agribusinesses in Nepal. The lack of data is primarily due to infancy of the investment value chain and support infrastructure such as research and ratings. Further, sparse research coverage of capital markets in Nepal has resulted in limited availability of historical data and limited access to updated industry benchmarks. However, the investment landscape is witnessing brisk activity, with 2-3 institutional investment funds setup over the last three years. The status of investment landscape presents an opportunity for early private equity entrants to make investments at lucrative valuations.

[2] Department of Industries, Nepal, Industrial Statistics Report, 2013
[3] IFC Enterprise Finance Gap Database, accessed in March 2014
[4] Intellecap analysis, 2014. See Section 11.2 in Annexure for details

In the absence of industry benchmarks for valuation; data from comparable SAARC countries and hurdle rates may be used as broad guides by investors

Valuation data from comparable countries like India, Sri Lanka, Bangladesh and Pakistan may be used as broad guides by investors. However, investors should be cognisant that countries like India have much higher market capitalisation and better investment value chains. Hence, even though some comparable valuation ratios can be used from other developing SAARC countries, they can at best be broad guides since the regulatory regimes, banking infrastructure, market capitalisation and other macro-economic indicators vary widely from country to country.

In absence of consistent data on valuation ratios in the sector, hurdle rate can serve a good indicator of minimum expected return from investments in the sector. Based on the primary data from practitioners in Nepal and comparable proxies, the Cost of Equity for investments in agribusiness is estimated to vary from 20% to 33% across sub-sectors and Weighted Average Cost of Capital is estimated to be 14% to 21%.

Exits are likely to primarily be promoter buy-back driven; though challenges are expected due to lack of historic track record of exits as well as industry infrastructure to facilitate exits

Re-purchase of private investor's shared by promoter(s) is likely to be the more prevalent approach for exits in Nepal; especially in sectors like spices and MAPs which have higher margin businesses and comparatively higher market opportunities. While promoter ability to buy-back will be one driver; the other is likely to be the lack of higher ticket size investors since the investment value-chain is yet to emerge in Nepal.

2. Introduction

Agriculture is the backbone of the economy in Nepal, and is a significant contributor to GDP as well as livelihoods. The country is blessed with favourable agro-climatic conditions, availability of land and access to cheap labour. Agriculture in Nepal is building on these foundational strengths to making a slow but steady transition from subsistence to commercial-scale agriculture operations. The sector is driven by strong support from government; growing demand from domestic and international markets; improvement in farm to market linkages; and emergence of agro-processing industries. The pace of growth can be accelerated by supporting private sector businesses that play critical roles in providing services to farmers, procuring agri-commodities from them, processing and packaging, and transporting to wholesale and retail markets. Agriculture can also benefit from more attention towards addressing systemic challenges like traditional approaches to agriculture that result in low productivity; insufficient infrastructure like roads, irrigation, storage and warehousing; and low availability of skilled labour-force.

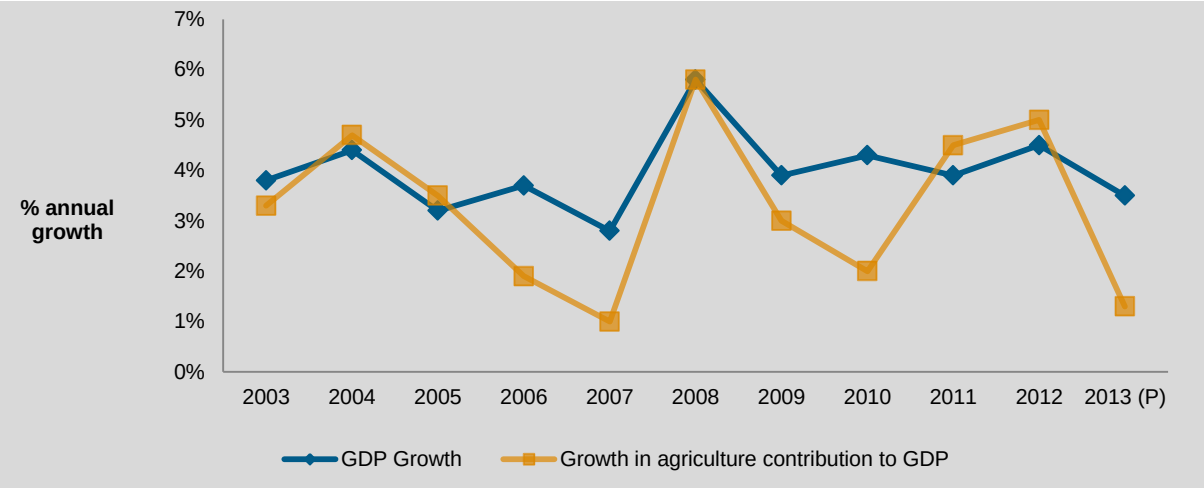
2.1 Sector's Role in Economic Development

Agriculture is the backbone of Nepal's economy – drives GDP growth, employment and inclusive development

Agriculture contributes to about 39% of GDP of the Nepal, and employs nearly 66% of the population[5]. From a socio-economic perspective, agriculture is an important sector in Nepal due to high degree of correlation between growth in GDP and growth in agriculture contribution as shown in Figure 1. Historically, years that witnessed a net growth in the agriculture sector were also characterised by growth in GDP.

This correlation does show variance across years – especially from 2009 to 2011. This may be attributed to growth in remittances in the same period which was high at 41% during this time and comprised about 21% of the GDP[6]. These remittances may have partially compensated for low performance of sector. However, it is widely accepted that over-reliance on remittances is detrimental to sustainable growth of an economy[7]. Hence, even though degree of correlation between agriculture sector growth and GDP growth may witness a fall, it is important to ensure the reliance falls due to internal economy growth in services and manufacturing sectors rather than remittances. Since these sectors are nascent, it is evident that agriculture will continue to play a key role in inclusive development and can benefit from active participation from the private sector – especially from medium and large businesses, and their financiers including banks and private equity investors.

Figure 1: Impact of change in Agri-Sector Growth on Overall GDP of Nepal



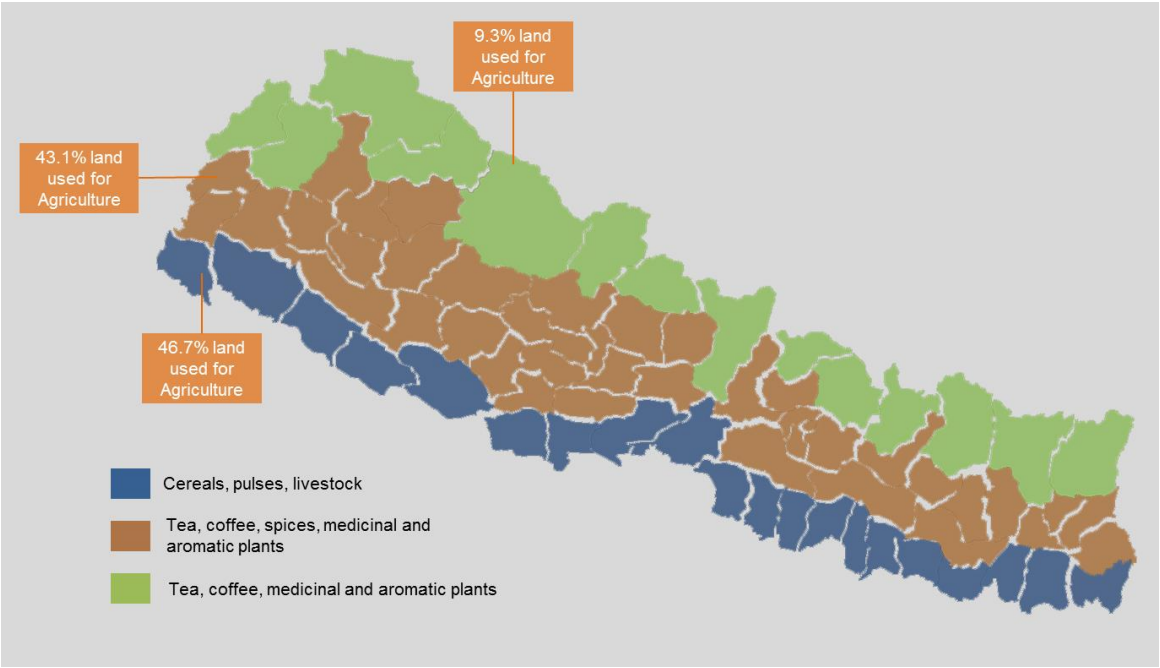
Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012

Strengths of agriculture in Nepal include favourable agro-climatic conditions, availability of land, and access to cheap labour

Nepal is blessed with diverse agro-climatic conditions that make it possible for a wide variety of crops to be grown ranging from cereals in the plains of Terai to cash crops like coffee and tea in hills and commercially important herbs in the mountains. Figure 2 shows the distribution of land area between these three regions and the major types of agricultural activity they support.

[5] Ministry of Agricultural Development (MoAD); Government of Nepal; 2014
[6] World Bank Development Indicators database, accessed in March 2014
[7] World Bank, Large-Scale Migration and Remittance in Nepal: Issues, Challenges, and Opportunities; 2011 and Asian Development Bank and Overseas Development Institute quoted by a 2014 Reuters report

Figure 2: Distribution of Land Area across Terai, Hilly and Himalayan Regions



Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012

Nepal has 4.12 million hectares of land suitable for Agriculture out of a total land area of 14.16 million hectares. Two-thirds of the land suitable for Agriculture has been cultivated, and about half of this is under irrigation. Further, labour in Nepal is cheaper than many comparable SAARC countries and can result in a cost advantage for agribusinesses that operate in the country.

2.2 Overall State of Demand and Supply in Agriculture

There is a significant demand-supply mismatch in the agricultural sector in Nepal, where domestic production and processing capacities are insufficient to cater to rising demand for food in Nepal. As a result, Nepal is import reliant for meeting demand and annually imports over US$ 250 million worth of semi-processed and processed food[8]. This gap has driven Nepalese agriculture to become more organised and has incentivised entry of private sector industries. A significant opportunity exists for domestic businesses to leverage this growing demand and decrease import-dependence. However, the lack of access to capital, especially risk capital in early stage of businesses poses a considerable hurdle to the growth and development of agriculture. **Hence, there is an opportunity to catalyse the growth of agribusinesses by making stage-specific access to financial and non-financial support available.**

2.2.1 Analysis of Demand-side Dynamics

[8] Trade and Export Promotion Centre Nepal, database accessed in March 2014

Demand for agri-commodities in Nepal is changing as a result of - (a) shift in domestic consumption trends driven by increase in disposable incomes and (b) growing international demand for Nepalese agro-commodities

Domestic demand for agri-commodities is increasing as a result of higher disposable incomes

The consumption patterns in Nepal are changing with growing incomes as a result of economic progress as well as growth in remittances. This growth has led to the emergence of a Nepalese middle class which is demanding higher value and processed food products. The growth in domestic demand for food and other agri-commodities has in-turn incentivised farmers to increase crop productivity through use of improved agri-inputs. Driven by this demand, import of agri-inputs like seeds, fertilisers and insecticides; and food products nearly doubled from US$ 728 million in FY 2010 to US$ 1.33 billion in FY 2012[9].

International demand for lifestyle products from Nepal like herbal food supplements and cosmetics and premium tea is growing

Some Nepalese agri-commodities like Medicinal and Aromatic Plants (MAPs), tea and spices occupy a significant place in international trade and there is growing demand for these commodities from international markets like India, China, Japan and European Union countries. The country exported US$ 118 million[10] worth of these commodities in 2013, and they are emerging as high growth industries in the agricultural sector.

2.2.2 Analysis of Supply-side Dynamics

Gradual change from subsistence to commercial farming driven by – (a) increased government support to improve productivity of the sector, and (b) improved farm-to-market linkages

The government of Nepal has placed an emphasis on investing in and developing agriculture to bring about inclusive socio-economic growth

Most of the activity in this sector has been traditionally focused on subsistence agriculture until recent years. However, with the thrust given to commercialisation of agriculture by successive Five Year Plans[11] and strategic initiatives taken by Ministry of Agricultural Development (MoAD) to boost production and yield[12], the sector has been showing slow but steady growth. The gross economic output of agriculture has nearly tripled over the last decade and today constitutes about 13% of the total foreign trade in Nepal as shown in Figure 3. This growth in gross economic output was also accompanied by an increase of 23% in gross capital stock in agriculture since 1992 as shown in Table 1. This is defined as "the total physical capital capacity available for repeated use in the production of other goods, in existence at specific point in time in the economy of agriculture sector" and is used by large multilaterals like FAO as one of the measures of investment in agriculture. When viewed together, these trends point to increase in agri-output as a result of increased investments.

[9] Unless mentioned otherwise, all Fiscal Year (FY) references in this report are Nepal specific; where the FY is calculated from 16 July to 15 July

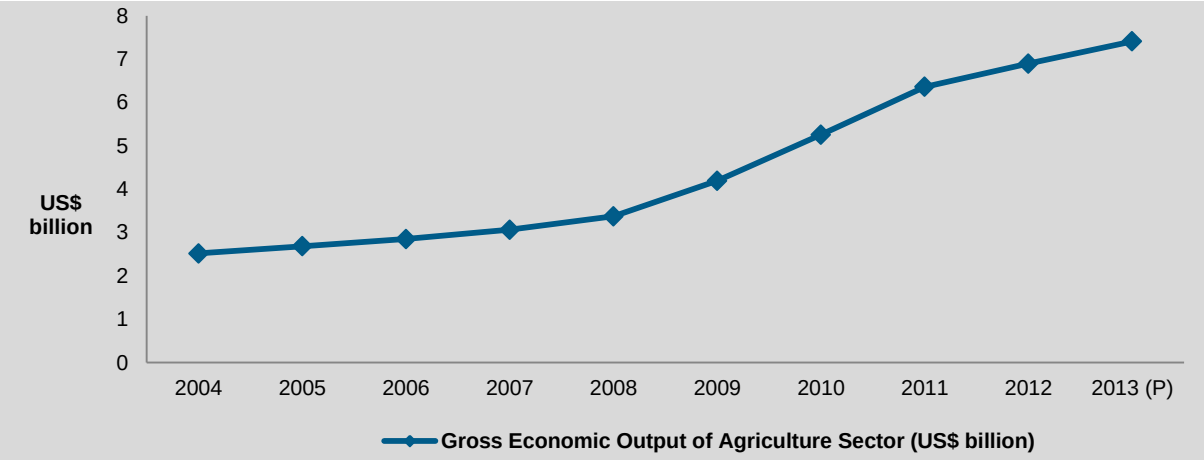
[10] Trade and Export Promotion Centre Nepal, database accessed in March 2014

[11] National Planning Commission; Government of Nepal

[12] In 2010, it released a 5 year strategic plan called the "National Agricultural Development Priority for the Medium Term (NASDP)" to help streamline and guide efforts of various government ministries and initiatives, donors, and private sector initiatives.

Indicators for agri-outputs are growing as well. The gross per capita production index for Nepal has increased by 21% since 2000[13]; and exports in the sector grew by nearly 12% from US$ 373 million in FY 2010 to US$ 415 million in FY 2012[14].

Figure 3: Gross Economic Output of Agriculture



Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development (MoAD); 2012

Table 1: Growth in gross capital stock in agriculture in Nepal

Year	Gross Capital Stock (US$ billion, adjusted to 2005 US$)
1992	7
1995	7.5
2000	7.9
2007	8.7

Source: FAOSTAT database, accessed in February 2014

Farm-to-market linkages are improving with increase in organised activity and emergence of agro-processing

There has been gradual improvement in farm-to-market linkages over the past 5-6 years. These include improvement in post-harvest procurement of produce from farmers as a result of aggregation by cooperatives, aid programmes and private sector traders and processing firms. As a result of this bulk procurement, agro-industries are able to take advantage of efficiencies of scale to a greater extent than they were able to 10-12 years back, and this is serving to make agribusiness more viable.

Further, the emergence of industrial scale agro-processing like cleaning, processing and packaging have also served to increase the monetary returns on agro -commodities that accrue back to firms. As an example to illustrate the financial advantage of agro-processing, dairy sector firms that manufacture and distribute processed milk products have margins of up to 30%, while those that market raw milk see 10 to 15% margins[15].

[13] FAOSTAT database, accessed in March 2014
[14] Trade and Export Promotion Centre, Export-Import Data Bank, 2012
[15] Data from primary interviews conducted by Intellecap during the course of this study in February 2014

Improvements in farm-to-market linkages have led to a "trickle-down" effect by decreasing food spoilage and increasing supply of agri-commodities in the market. Early results of United States Agency for International Development (USAID)'s Nepal Economic Agriculture and Trade (NEAT) programme serve to illustrate this further – the programme worked with 67,000 smallholders between 2011 and 2013 to support increased investments in agriculture and strengthen market linkages; and resulted in increased agricultural sales of US$ 26.5 million[16]. While NEAT serves as a great example of the outcomes of better farm-to-market linkages; there are millions of smallholders without access to such facilities and agriculture in Nepal has a long way to go in bridging this gap. However, the increased attention to improving farm-to-market linkages is a positive sign.

3 Sector Overview

Nepal compares unfavourably with neighbouring frontier and emerging economies in the South and South East Asia regions on indicators of agricultural productivity shown in Table 2. It has the lowest yield in the region, largely driven by low use of agri-inputs and less organised large scale private sector activity. As a result it has one of the highest rates of food import in the region. There is an opportunity for greater private and public sector involvement in the country to ensure that the sector is able to cater to demand from the Nepalese population which is growing at 1.2% per annum[17].

Table 2: Comparison of state of agriculture across different countries

Country	Cereal yield/hectare (2012)	Kg of fertiliser used /hectare of arable land (2010)	% Employ-ment in agriculture (2012)	% Agricultural contribution to GDP (2012)	Market capitalisation as % of GDP (2012)	% food of total imports
Nepal	2719	23.2	66%	37%	21.90%	15%
India	2954	178.5	47%	18%	68%	4%
Sri Lanka	3862	230.8	39%	11%	28.70%	12%
Malaysia	4017	1096.5	13%	10%	156.20%	9%
Vietnam	5642	310.5	47%	20%	21.10%	8%
Pakistan	2834	217.1	44%	24%	19.40%	11%
Bangladesh	2988	184.4	62%	18%	15%	22.5%
Indonesia	5081	181.5	35%	14%	45.20%	8%

Source: World Bank Development Indicators database, accessed in March 2014 and FAOSTAT database, accessed in March 2014

[16] Commercial Farming Successes Break Poverty Cycle in Nepal, USAID, 2014
[17] World Bank Development Indicators database, accessed in March 2014

3.1 Structure of Agriculture in Nepal

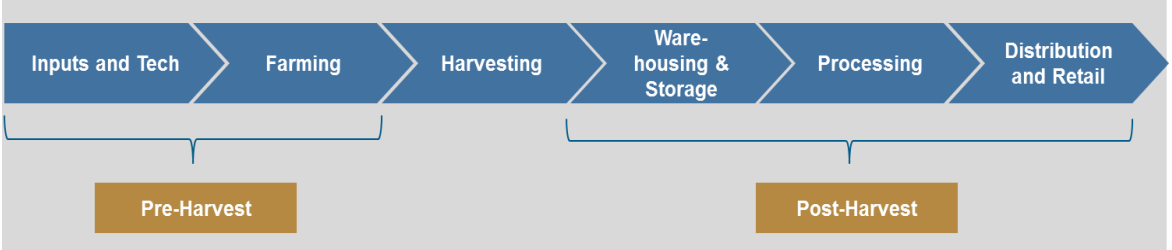
Agricultural structure in Nepal can be analysed through two lenses – (a) the agri value chain and (b) categorising into sub-sectors by type of agri-produce

3.1.1 Overview of the Agricultural Value Chain in Nepal

The continuum of activities leading from farming of an agri-commodity to purchase by an end-consumer is called an agri-value chain; and it provides a comprehensive view of the enterprises, infrastructure and key stakeholders in the sector.

A typical agri-value chain is represented in Figure 4 below, and most domestic activity in Nepal is concentrated at the farming, harvesting and processing stages. The sector is witnessing increasing indigenous activity in the agri-inputs space which is encouraging; the value chain is still affected by the lack of adequate infrastructure downstream in warehousing, storage and processing.

Figure 4: Typical agri-value chain

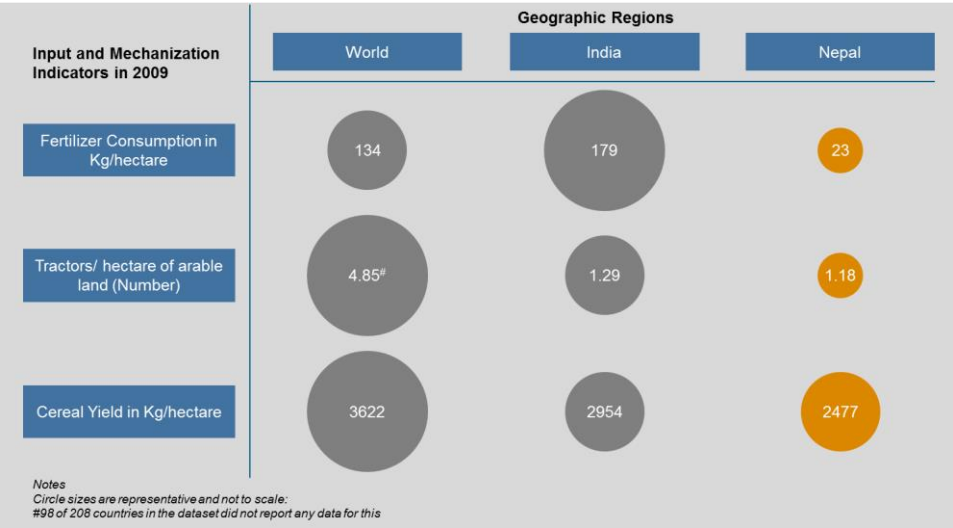


3.1.1.1 Pre-Harvest Value Chain in Nepal

Pre-harvest segment is characterised by – (a) low usage of agri-inputs and technology, and (b) fragmented land-holdings with predominantly traditional farming approaches

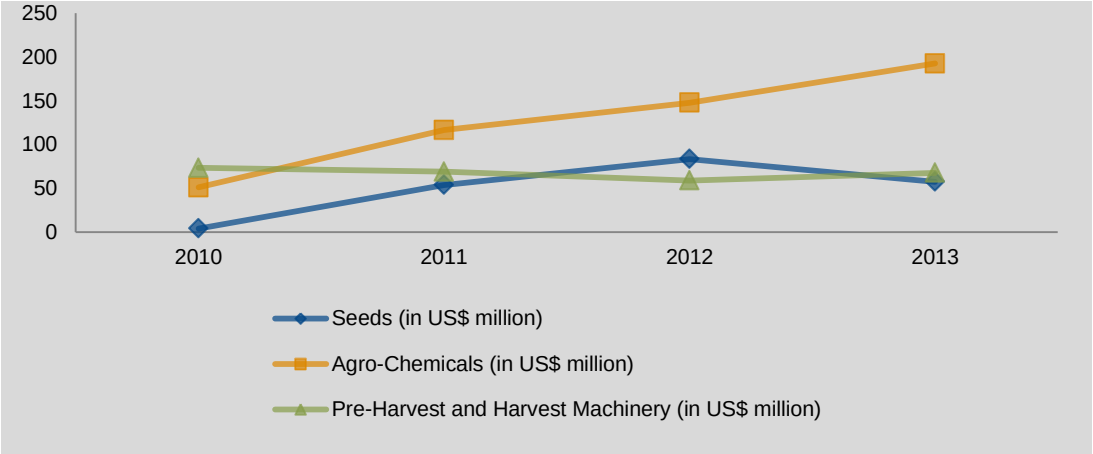
Nepal compares unfavourably with global averages on use of agri-inputs and mechanisation as shown in Figure 5. This leads to lower yields and hence creates a negative impact on agri-sector productivity.

Figure 5: Inputs and mechanisation in agriculture in Nepal



There is growing realisation of the importance of these inputs, and as a result the imports of agri-inputs have been growing steadily but largely due to demand for agro-chemicals as shown in Figure 6. The Nepalese private sector is also increasingly interested in catering to domestic demand for these inputs; especially in seeds and livestock feed as it is commercially viable to produce these in Nepal. On the other hand - due to lack of access to technology, infrastructure and natural resources, the indigenous manufacturing and production of farming-related machinery and agro-chemicals is negligible and these are completely import-dependent.

Figure 6: Trends in import of agricultural inputs



Source: Trade and Export Promotion Centre database, accessed in March 2014

India has seen similar issues in the agri-sector – the country is import-dependent for agrochemicals like fertilisers, pesticides, herbicides and weedicides used in farming due to insufficient phosphate deposits. Further, most agri-sector machinery is not affordable by smallholders due to high costs which are not paid back by mechanisation due to fragmented landholdings. Several innovative agri-sector businesses in India have taken local, asset-light approaches to tackle these issues and have been profiled in Case Box 1. A potential approach to solving these issues in Nepal might be to create Joint Ventures (JVs) or technology transfer partnerships with Indian and other emerging markets enterprises.

Case 1: Innovative agro-chemicals and mechanisation enterprises seen in India

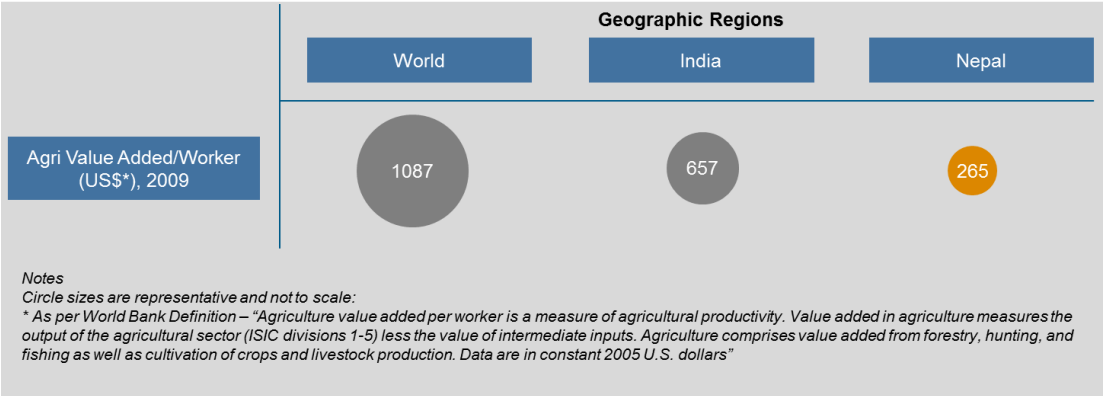
Evomo (evomo.in) has developed a low cost off-road vehicle for rural mobility that can perform agricultural functions like pumping water and transporting goods at 30% cost reduction as compared to traditional vehicles. Evomo will be rolling out delivery of these in late 2014 through Evomo and franchisee-owned micro factories located in rural areas. Each micro-factory is also linked to repair and maintenance workforce. The firm raised seed funding from the Centre for Innovation Incubation and Entrepreneurship (CIIE) at the Indian Institute of Management in Ahmedabad (IIM-A) last year.

Barrix Agro (barrix.in) has developed pheromones-based pest and insect traps that serve the purpose of pesticides and insecticides through natural and asset-light approach. They currently have 3 products in their portfolio – a fruit fly trap, a vegetable fly trap and a pest fly sticker. The firm has raised two rounds of investments from the Centre for Innovation Incubation and Entrepreneurship (CIIE) at the Indian Institute of Management in Ahmedabad (IIM-A) and Omnivore Partners.

Farming is highly fragmented and has significant informal sector activity

The average land parcel farmed by a smallholder is 0.96 hectares, while nearly half of all landholdings are less than 0.5 hectares in size. This further compounded by the fact that a significant portion of agriculture is subsistence-level[18]. These are challenges to commercialising agriculture as modern pre-harvest approaches require capital investments which cannot be justified by returns from smaller parcels of land and require know-how which many subsistence farmers lack. As a result, the agricultural value added per worker in Nepal (a measure of productivity) is nearly 1/5th of the global average as shown in Figure 7, and has a direct impact on farmer and farm labourer livelihoods as well as overall GDP.

Figure 7: Agricultural value added per worker across different regions



Source: World Bank Development Indicators database, accessed in March 2014

Organised activity in seed sub-sector is growing consistently in Nepal

From a technical stand-point, a true seed is essentially a miniature undeveloped plant (the embryo of a full-grown plant)[19]. Seeds are the most critical determinants of the yield and productivity of agricultural commodities. Hence, they are naturally or genetically improved for desired characteristics such as increased yield, drought resistance, disease resistance and early maturity among others.

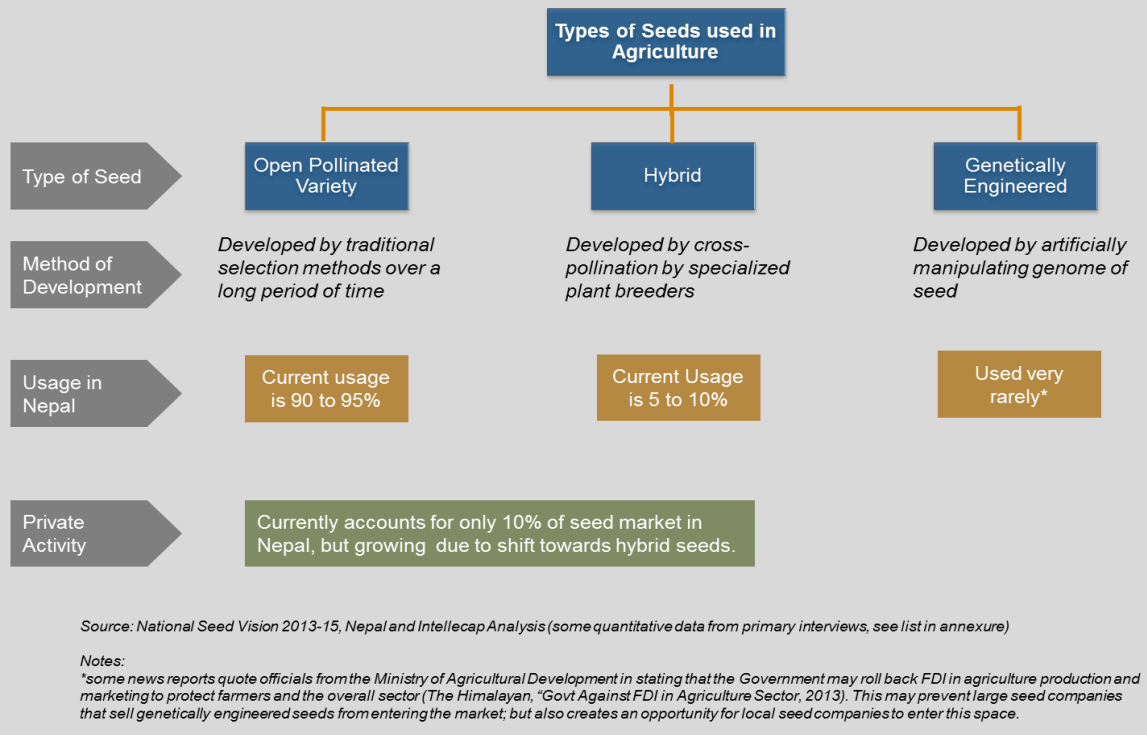
[18] International Fund for Agricultural Development (IFAD), Enabling Rural Poor to Overcome Poverty in Nepal, 2013

[19] Encyclopaedia Britannica, 2014

Such seeds are termed “improved seeds”; and Nepal has seed significant growth in private sector activity around the manufacture and trading of such seeds - especially for vegetables and cereals.

Private sector activity in improved seeds accounts for over 90% of formal trade in vegetable seeds as well as a small portion of trade in maize, rice, vegetables and other crops[20]. This role is expected to become stronger as industry moves away from Open Pollinated Varieties (OPV) of seeds to hybrid seeds[21]. The National Seed Board (NSB) is the central agency engaged in policy formulation, release and registration of new seed varieties (including OPV, hybrid and genetically engineered), and overall planning and coordination for the sub-sector. Figure 8 shows a broad view of the overall structure of the seed industry in Nepal.

Figure 8: Structure of Seeds Sub-Sector



Source: National Seed Vision 2013-15, Nepal and Intellecap Analysis (some quantitative data from primary interviews, see list in annexure)

Notes:
**some news reports quote officials from the Ministry of Agricultural Development in stating that the Government may roll back FDI in agriculture production and marketing to protect farmers and the overall sector (The Himalayan, “Govt Against FDI in Agriculture Sector, 2013). This may prevent large seed companies that sell genetically engineered seeds from entering the market; but also creates an opportunity for local seed companies to enter this space.*

There are over 250 varieties of seeds registered by NSB in Nepal, of which about 8% are OPV and 92% hybrid. The different types of seeds used in Nepal are shown in Table 3.

[20] MoAD, National Seed Vision, 2013-2025

[21] Seed producer companies interviewed during the course of preparing this report stated that commercial producers were moving away from Open Pollinated Varieties of seeds and towards Hybrid seeds, especially in wheat, paddy and vegetables farming

Table 3: Types of improved seeds used in Nepal

Cereal seeds	Pulses and Cash crop seeds	Vegetables	Forage and pasture seeds	Others
• Rice • Maize • Wheat • Barley • Buckwheat • Finger Millet	• Oilseeds • Cotton • Jute • Tea and coffee • Spices • Pulses	• Radish • Pea • Onion • Cauliflower • French Bean • Asparagus Bean	• White clover • Ryegrass Cocksfoot Paspalum • Oat • Vetch • Teosente	• Anadi rice • Sesame • Flowers • Trees

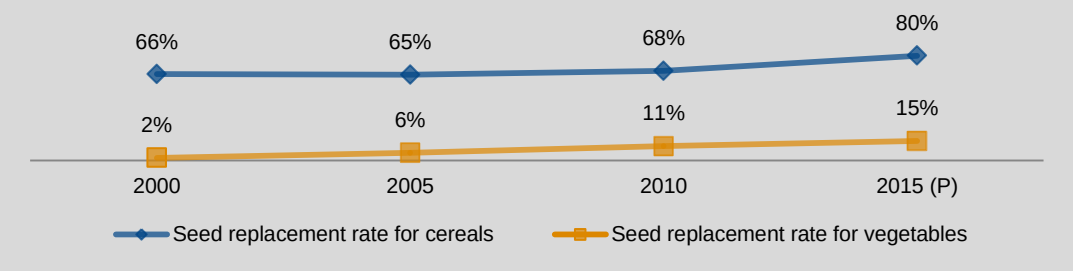
Source: Nepal Seed Vision, 2013-2025; National Forage & Grassland Research Centre, Nepal, 2010; MoAD Yearbook, 2012

The distribution across different crop types is skewed, with over 95% being vegetable seeds, 4% rice seeds and 1% maize seeds. Nearly 40% of hybrid seeds were indigenously developed, and the typical development cycle can take as many as 5 to 8 years for R&D, field trials and market entry. This is another indication that local firms are making investments in future growth, and are poised to continue on an upward trajectory.

Growth in improved seeds skewed towards vegetable seeds, potential to increase private sector play in cereal and forage seeds

The seed replacement rate has also been growing at a fast pace as shown in Figure 9, and driving up domestic demand for improved seeds. However, thus far the pace of growth is higher for vegetable seeds than others like rice, maize and paddy. It is evident that financial and human capital investments have been skewed towards vegetable seeds. Therefore there is also an opportunity for private sector to make an equally strong play in other seed types.

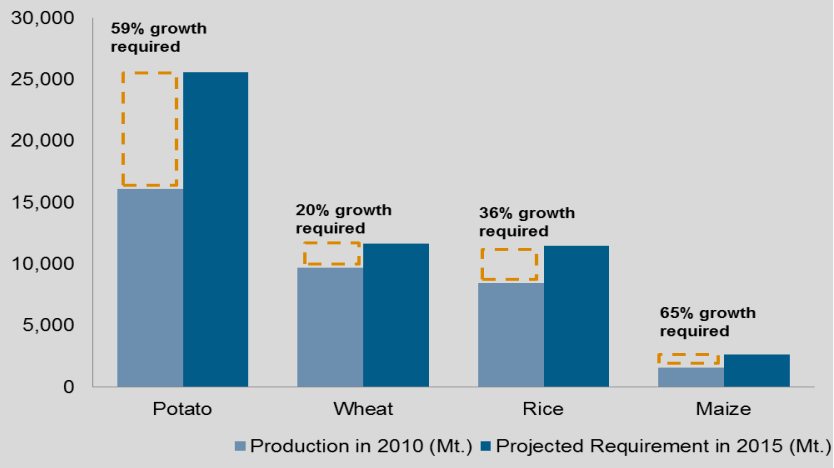
Figure 9: Seed replacement rate in Nepal



Source: MoAD, 2013

Overall, there is a significant gap in current production and estimated requirements in 2015 as reported by the National Seed Board. Crops of staple food are lagging in production quantities and yields; and hence production of improved seeds for crops like potato, rice, maize and wheat require growth rates ranging from 20% to 65% to meet the estimated requirements in 2015. In the absence of this growth in production, reliance on imports will continue to be the key source of meeting market demand. Figure 10 shows demand-supply gaps and required growth rates for production of improved seeds.

Figure 10: Production and Requirement of Improved Seeds in Nepal



Source: National Seed Board, Nepal, 2011

The Government recognises this risk, and recently brought out the National Seed Vision 2013-2025. The strategy document lays out a roadmap which aims to create a facilitative seed market driven by legal, institutional, infrastructural and human capital development-focused activities.

The seed sub-sector is likely to remain a domestic demand-focused industry in the short to medium term. The current production is far below demand; and much higher quantum of investments must flow into the sector before excess production with potential for export is seen. Given this, agribusinesses operating in the seeds sub-sector may present some opportunities for private equity investors. This has been discussed in more detail in Section 6.

3.1.1.2 Post-Harvest Value Chain in Nepal

Post-harvest segment is characterised by – (a) poor infrastructure for cold storage and warehousing, (b) significant private sector activity in logistics, and (c) significant public and private sector activity in processing

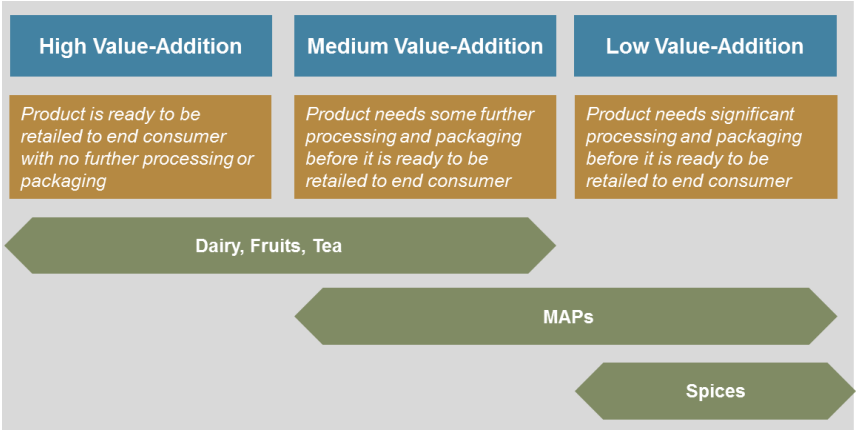
Storage and warehousing of agri-produce is critical for preventing spoilage of produce as it moves from farm to consumer. Current warehousing infrastructure in Nepal is inadequate and largely owned either by the government or by individual private sector companies involved in food processing. For instance, currently there are only 3 medium to large sized cold storage businesses in Nepal[22] which are inadequate to cater to the needs of producers and processors. There is a lack of organised private sector activity which is critical for achieving value chain efficiency. Dairy is the only agri-sector with significant warehousing arrangements[23].

Agri-processing infrastructure is more developed in dairy, fruits, MAPs, spices, tea and coffee. However the level of value-addition varies across these sub-sectors as shown in Figure 11. Processes like cleaning, packaging and processing that increase the retail value of agri-commodities fall under the purview of value-addition. Most processing activity is in fact restricted to cleaning and packing or drying and extraction; but very rarely includes further processing into a retail-ready product. This is a key constraint to the growth of the sector as typically, the highest margin accrues to

[22] Department of Industries, Industrial Statistics, 2013
[23] Section 2.2.2 and 3.1.2 for more details

companies that are involved in higher value-add processing and directly retail/wholesale products with no further need for processing. This issue can be addressed by more easily accessible technology, expertise and adequate market linkages; and will make the sector more attractive for businesses.

Figure 11: Value addition to agri-produce in Nepal



Source: Intellecap analysis; 2014

Agri-logistics in Nepal are organised as land, air and sea logistics. Large international companies like DHL and FedEx operate in Nepal along with over 105 domestic companies[24]. The logistics sector has significant informal and fragmented activity as well as organised sector activity.

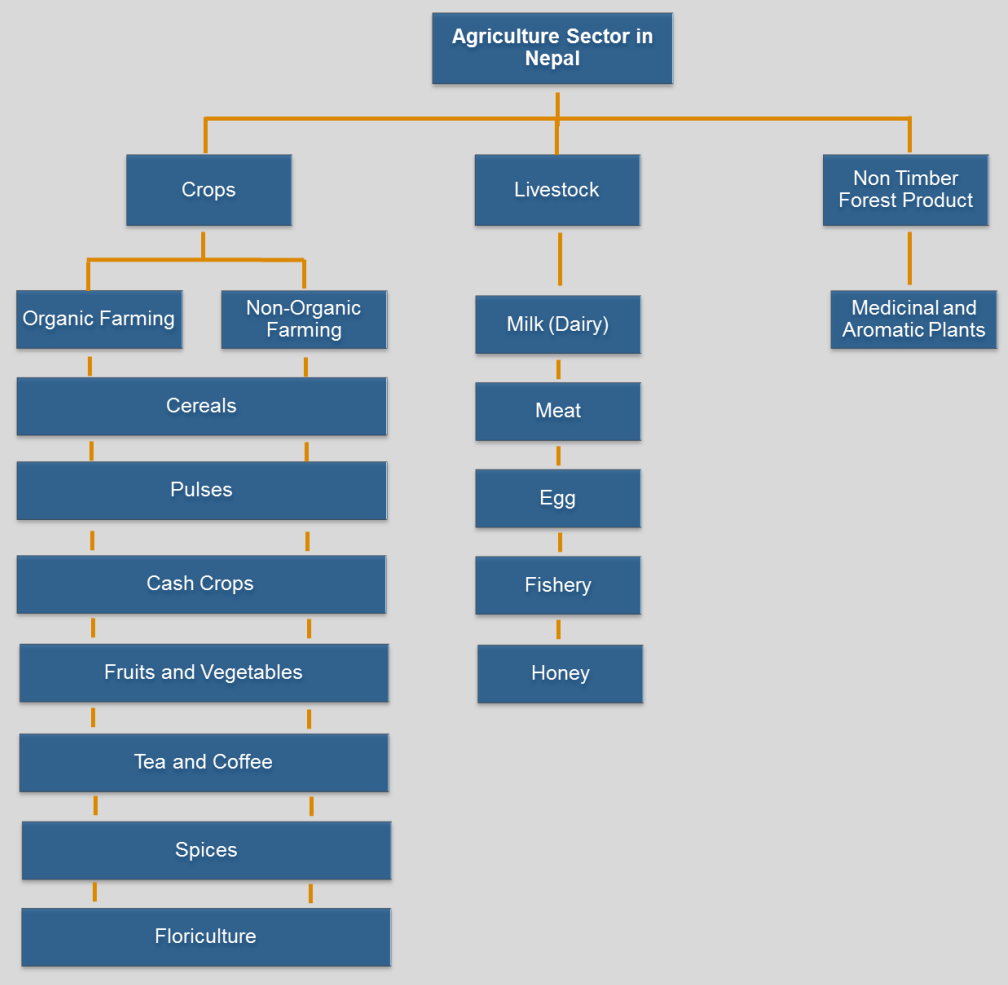
Since the country is land-locked between India and China, land and air transport are the only ways to move produce across Nepal. Products earmarked for international markets also need to be transported by road or air to the Indian port of Kolkata. This situation creates a challenge due to differing quality of roads, octroi charges and fuel costs that increase costs for agri-sector companies. While Nepal has been adding 7000 km of roads each year, only half of these are all-weather roads and nearly 60% are concentrated in the Terai region[25]. The cost of vehicle purchase and diesel are also much higher than in India because these are import-dependent. Further, over 22 documents and licences are needed for exports from Nepal and 18 for imports into Nepal. India also places restrictions on movement of Nepalese registered vehicles through Nepal so freight forwarders need linkages with Indian firms to pick up goods from the border and move them to the port. This results in freight movement time of up to 12 days from Kathmandu to Kolkata. As a result of these challenges, corruption and double-bookkeeping are rampant in the sector because firms struggle to navigate through bureaucratic hurdles[26].

3.1.2 Overview of Sub-Sectors Based on Type of Produce

Agricultural activity in Nepal can also be analysed by types of produce and divided into major sub-sectors of crops, livestock, and Non-Timber Forest Products (NTFPs) as shown in Figure 12. Broadly, about two-thirds of the agricultural contribution to GDP comes from crops and the remainder from livestock. NTFP, which primarily includes Medicinal and Aromatic Plants (MAPs), is a small but increasingly important sub-sector especially from an export stand-point.

[24] Nepal Freight Forwarders Association, 2011
[25] World Bank, 2011
[26] Intellecap analysis from primary interviews conducted in March 2014

Figure 12: Sub-Sectors of agriculture in Nepal



Source: Intellecap analysis, 2014

3.1.2.1 Structure of Crops Sub-Sector

The crops sub-sector in Nepal can be analysed using two lenses - (a) organic and non-organic farming, and (b) types of crops grown.

Certified organic farming comprises only 1% of total cultivation

Commercially-oriented organic farming is mostly seen in agri-commodities with international demand such as tea and MAPs. There is very little domestic awareness or demand for organic food. There has been some private sector push towards organic farming – mostly from academicians and environmental scientists. However, these are not driven by a business-led approach but more out of rising concerns from use of chemical fertilisers and pesticides. Though these inputs have resulted in higher crop productivity, there are concerns about a potentially negative impact on soil fertility due to increased acidity and loss of soil microbes[27]. There is also a risk of chemicals from these inputs

[27] Society for Environment Conservation and Agricultural Research and Development, Nepal, 2008

entering the food chain. A 2001 study found increased levels of nitrate and phosphate in wells dug in the Kathmandu Valley area[28].

Interestingly, most of the traditional farming practises in Nepal already fall under the ambit of organic farming. However since most of traditional farming is subsistence farming where produce is not marketed, these traditional approaches are seen in the informal sector which are too fragmented to be commercially viable.

The shift of commercial-scale agriculture towards organic farming has been slow due to lack of awareness of the long term impact of chemical inputs; perception that yields from organically farmed land is lower; and the difficulty in obtaining certification. In fact, the Government of Nepal ratified the National Technical Standards and Guidelines for Organic Production and Processing System very recently in March 2009. There have been some "policy-level" mentions of organic farming in Five Year Plans and the National Agricultural Policy 2005 but they stress on it primarily for the export market. As a result, most certified organic farming is in crops geared towards the export market such as coffee, tea, fruits and spices like cardamom and ginger[29]. However, the area of farmland under cultivation and overall production of these are not yet commercially significant and organic farming will take a few more years to emerge as an important contributor to agri-sector.

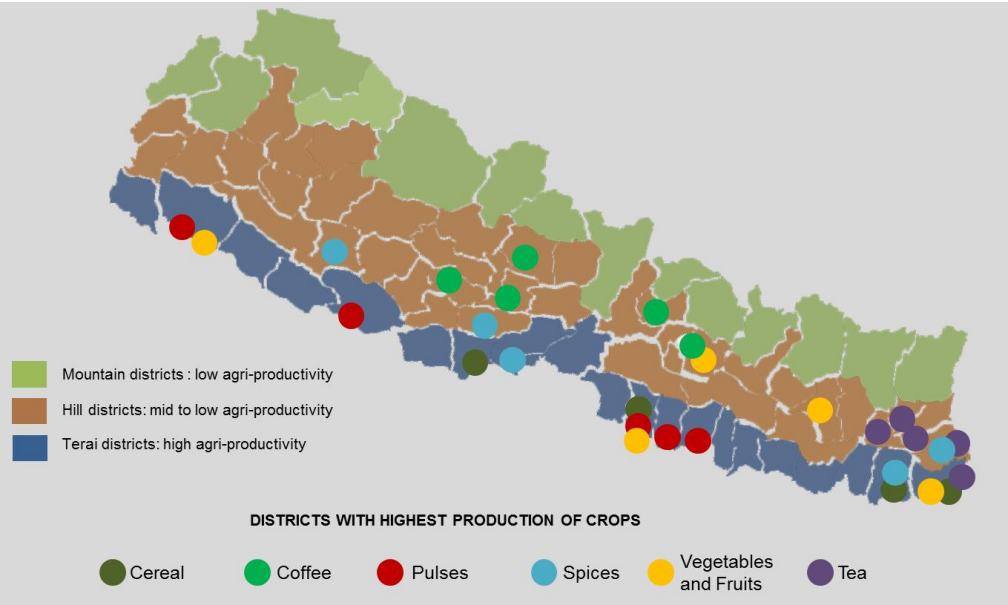
So far, just over 28,000 hectares which is less than 1% of land under cultivation has been certified as organic[30] including crop land and wild collection area. Overall, this is still a comparatively nascent sub-sector and will take some years to gather momentum and reach commercially viable scale. Some drivers of this scale could be recent government interest and international demand for organic high-value produce like essential oils, large cardamom, ginger and orthodox tea.

Non-organic farming dominates agricultural sector and is primarily concentrated in Terai and some hill districts

The crops sub-sector can also be analysed by evaluating the different types of crops grown in 3.2 million hectares of cultivated land. Since the country is primarily hilly this only represents 16% of the total land available. The Terai and Inner Terai covering an area of about 34,000 sq. km are the most important sectors for cereal and crop productivity, and can typically support growth of 3 crops per year[31]. The districts with highest agricultural production of cereals, pulses, fruits and vegetables are mostly found in Terai and Inner Terai, while districts with highest production of tea, coffee, and spices in hill districts as shown in Figure 13.

[28] International Centre for Integrated Mountain Development, 2001
[29] Food And Sustainable Agriculture Initiative Forestaction; 2011
[30] Organic World and Fair Future (OWF) Pvt. Ltd, 2010
[31] International Food Policy Research Institute; 2012

Figure 13: Crop Productivity in Nepal across different regions



Source: Statistical Information on Nepalese Agriculture; MoAD; 2012

Specific **cereal and cash crops** that are part of the staple diet include paddy, maize, lentil, potato, and cotton. Other crops of commercial value grown in the region include tropical and sub-tropical fruits and vegetables, tea, coffee and spices as shown in Table 1.

Nepal has 18,149 hectares of **tea plantations** that produce 18,309 metric tons of tea; and 1760 hectares of **coffee plantations** that produce 523 metric tons of coffee (dry parchment[32]). The current production of Nepalese coffee is too low for significant commercial activity[33]. Hence, tea is a more commercially significant commodity than coffee[34].

Aside from these crops, **the floriculture sector** has also been growing and becoming less import dependent. The number of floriculture nurseries saw an eight-fold growth from 80 in early 1990s to 635 in 2010/11; and as a result the domestic demand for cut flowers met by imports decreased from 95% to 20%[35]. Important floriculture crops are Gladiolus, Rose, Tuberose, Carnation, Gerabera and Orchid.

Across the crops covered in this section, growth in production and yield is low. One of the reasons for this is low use of agri-inputs and mechanisation[36].

[32] Dried coffee beans that need further processing including milling and roasting before they can be retailed
[33] InfoDev, Promoting Agribusiness in Nepal, 2013
[34] See Section 6.2.2 for a more detailed overview of the coffee sub-sector
[35] Statistical Information on Nepalese Agriculture, MoAD, 2012; and Trade and Export Promotion Centre Database accessed in March 2014
[36] See section 3.1.1.1 for details

Table 4: Growth in area under cultivation, production and yield of crops

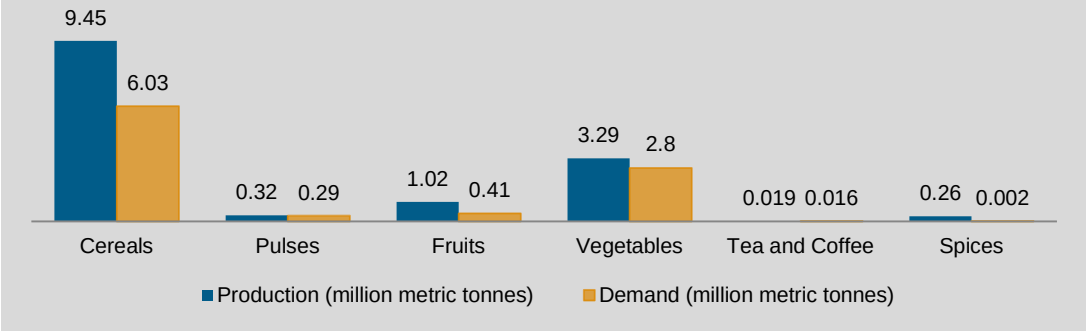
Types of Crops/ FY	Area Under Cultivation (in million hectare)			Production (in million mt)			Median Yield (in kg/hectare)		
	09/10	**10/11**	**11/12**	**09/10**	**10/11**	**11/12**	**09/10**	**10/11**	**11/12**
Cereals	3.38	3.47	3.48	7.76	8.61	9.45	2119	2275	2412
Pulses	0.31	0.33	0.33	0.26	0.32	0.32	813.5	901	905
Other Cash Crops	0.45	0.46	0.48	5.18	5.41	5.70	901	1000	985
Vegetables	0.23	0.23	0.24	0.7	0.79	1.02	12777	13124	13463
Fruits	0.04	0.05	0.07	3	3.20	3.29	10000	10030	10170
Tea & Coffee	0.018	0.019	0.019	0.017	0.017	0.019	970	999	1032
Spices	0.044	0.046	0.047	0.30	0.31	0.35	6840	6675	7400

Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012; National Tea and Coffee Development Board, Nepal and Food and Agricultural Organisation dataset accessed in March 2014.

Consumption of crops in Nepal growing, but low productivity and inefficiencies in farm-to-market linkages constrain local agri-sector from meeting this demand

At the farm cultivation level, the MoAD reported a food sufficiency rate of 108% in 2013 as shown in Figure 14. However due to inefficiencies in farm-to-market linkages and lack of processing infrastructure – this produce does not reach end consumers and 33 out of 75 districts are food deficit. While reliable data for post-harvest losses in farm-to-market transport was not available for the country, these range from 15 to 50% in comparable low to mid income developing countries[37].

Figure 14: Production and demand for food crops in Nepal

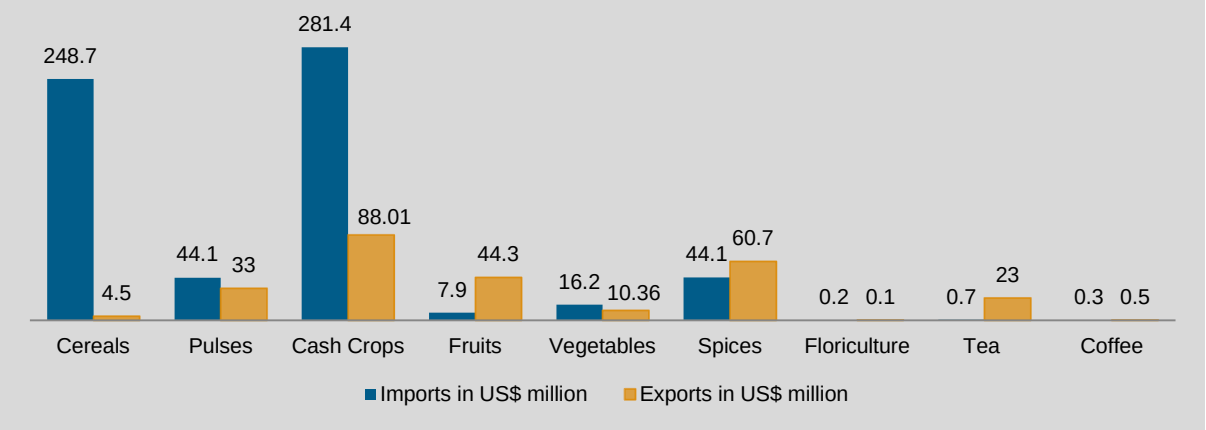


Source: MoAD Food Balance Sheet 2013; MoAD Statistical Year Book, 2012; FAO Food Balances Database accessed in March 2014

As a result, Nepal is a net importer of food crops to cover this deficit. In FY 2013 over US$ 600 million worth of commodities falling under crops sub-sector were imported; as compared to net exports of US$ 260 million. However, a more granular comparison of imports and exports within the sub-sector as shown in Figure 15 shows this imbalance is mostly due to cereals and cash crops. Exports of fruits and fruit juices, spices and tea are much higher than imports.

[37] FAO, Post-Harvest Losses Aggravate Hunger, 2009

Figure 15: Comparing Imports and Exports of Crop Sub-Sector in FY 2013



Source: Trade and Export Promotion Centre Database accessed in March 2014; Ministry of Commerce and Supplies

As seen in Figure 15, there is an excessive reliance on imports for meeting food demand and most of this demand is for processed food. In such a scenario, value-addition to food produce can play an important role in decreasing import and also opening up international markets for Nepalese agri-produce. For instance, in Figure 15, the export value of fruits from Nepal is high as most of the exports are of semi-processed and processed nature such as pulps, juices and jams[38].

Value addition to crop produce is critical for commercialisation of crops sub-sector

Value-addition like cleaning, processing and packaging is a key opportunity for private-sector in the crops sub-sector. These processes increase realisable value of an agri-commodity and result in higher margins for businesses[39].

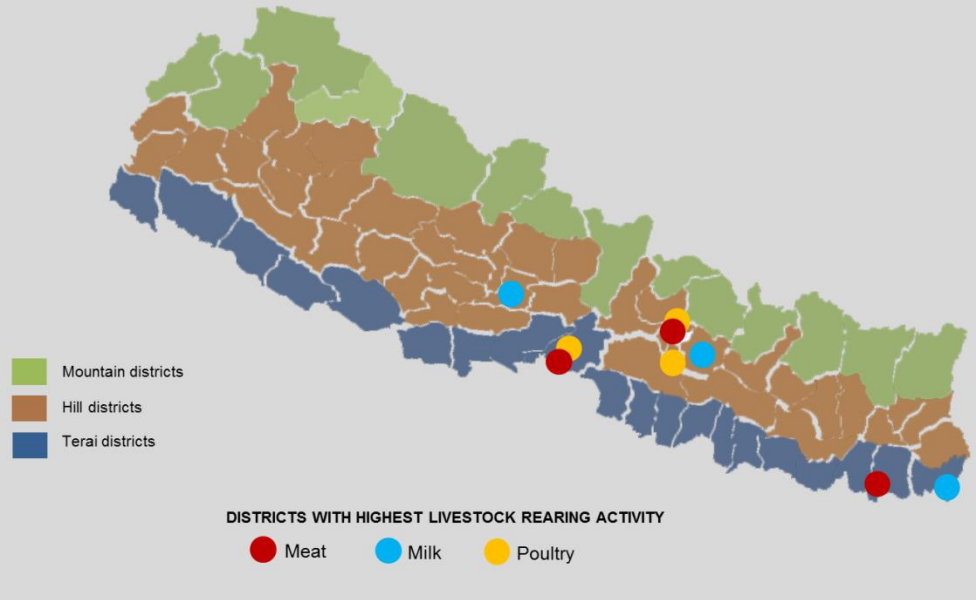
From a business-activity perspective, fruit, vegetables, tea, coffee and spices are of specific importance as there is more organised procurement and processing in these crops. Given this, agribusinesses in these sub-sectors are also likely to present more viable investment opportunities for private equity investors. These are described in more detail in Section 6.

3.1.2.2 Structure of Livestock Sub-Sector

Livestock form the primary source of protein in the typical Nepalese diet. Livestock products can be primarily divided into edibles like milk, meat, egg, fish and honey; and by-products like wool. Milk, meat, egg, honey and fish are primarily driven by domestic demand; while wool is driven by both domestic and international demand. Livestock rearing is more concentrated in Terai districts of Morang, Jhapa, and Chitwan; and in hill districts of Kathmandu, Lalitpur and Bhaktapur as shown in Figure 16.

[38] Statistical Information on Nepalese Agriculture; MoAD; 2011
[39] See Section 2.2.1 for details

Figure 16: Geographical Concentration of Livestock Rearing



Source: Statistical Information on Nepalese Agriculture; MoAD; 2012

Though the sector has witnessed varying rates of growth across specific commodities as shown in Table 5; this is not sufficient to meet domestic demand and as a result the sector is still import reliant as shown in Figure 17. While a significant portion of livestock rearing is still driven by traditional approaches; there has been growing momentum around using improved livestock breeding techniques and feed due to the growth of poultry and dairy sectors.

Table 5: Livestock Production

Livestock Produce/ FY	Production			CAGR
	2010	2011	2012	
Meat (million mt)	0.24	0.27	0.28	8%
Milk (million mt)	1.49	1.55	1.62	4%
Eggs (million numbers)	643	704	801	12%
Fish (million mt)	0.024	0.026	0.029	10%
Honey (mt)	1100	1365	1500	17%
Wool (million mt)	0.57	0.58	0.58	1%

Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012

Eggs and meat production is highly fragmented and primarily in the informal sector. **Honey** was an important export commodity until 2004 owing to distinct flavour and international demand for Nepalese honey. However, due to lack of quality assurance infrastructure, honey from Nepal does not

meet strict international quality certification standards and exports have witnessed a sharp fall from ~US$ 50,000 in 2004 to less than US$ 500[40] in 2013.

Dairy and poultry sectors in Nepal are more organised compared to other sub-sectors

Dairy is organised partly due to a long history of milk cooperatives which first came up in 1960s and were given legal structures as "Milk Producers Cooperative Societies (MPCS)" in late 1980s. Today, Nepal has over 1600 MPCS covering over 100,000 farmers[41] and 250 dairies of varying sizes across the country. Estimated production of milk in Nepal was over 1.62 million metric tonnes in 2012; however, only 10% of this is processed by formal sector dairies. At average selling point of US$ 0.42 per litre of milk in 2012, the financial value of production is approximately US$ 57 million while imports are over US$ 11 million indicating strong opportunity for the domestic market to become more organised and fill need gap currently addressed by imports.

Poultry sector is organised by layers farms and broilers farms, with most being concentrated in Chitwan and Kathmandu Valley. An estimated 87% of the country's citizens rear some form of livestock with an average of 5.8 heads of poultry and livestock per household[42].

Nepal is self-sufficient in egg production but insufficient in meat and milk production to meet the per capita demand as shown in Table 6. While the demand for meat and milk in Nepal is high, traditional animal rearing approaches lead to low yield from farmers and cooperatives and in turn impact dairy processing and packaging industries. Like in the case of crops, supply chain inefficiencies impact the dairy and poultry sector as well.

Table 6: Production and demand of livestock products

Livestock Produce/ FY	Production in FY 2011	Demand estimated in FY 2011
Meat (million mt)	0.28	2.38
Milk (million mt)	1.62	13.51
Eggs (million numbers)	801	609

Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012 and Agricultural Development Strategy Assessment Report, 2012

Livestock inputs growing at significant pace in poultry sector, risk of market saturation observed

The growth of domestic poultry sector has in-turn driven growth of livestock feed sub-sector in the past 4-5 years. Organised sector livestock feed is primarily processed from crop residues and by-products such as rice straw, wheat straw, corn stover, millet straw, pulses residues, brans from different cereal and leguminous grain products[43] with some added supplements like maize and soya. Supply of maize and soya is primarily import-dependent and accounts for over 60 to 70% of the cost of production. Due to this over-reliance on imports, livestock feed companies operate at very slim margins of 10 to 15%. There are over 150 poultry feed manufacturers in Nepal that collectively manufacture over 0.78 million metric tons of feed[44]. On an average, most plants are operating at 50 to

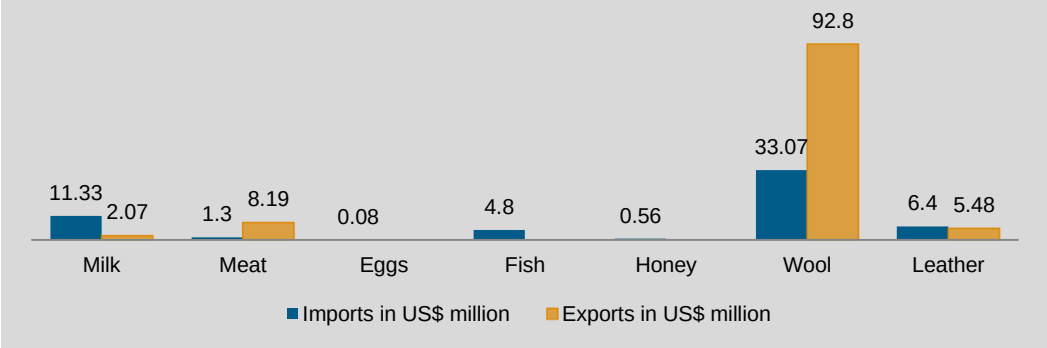
[40] FNCCI, 2008; and Trade and Export Promotion Centre database, accessed in March 2014
[41] Dairy sector study of Nepal; Food and Agricultural Organisation; 2010
[42] UN Office for the Coordination of Humanitarian Affairs; 2013
[43] Nepal Agricultural Research Council; 2006
[44] Nepal Feed Industries Association

60% capacity and yet adequately meet the demand for poultry feed[45]. Hence, the market is likely to be overcrowded in the near future.

Exports in the sub-sector are higher than imports due to high demand for Nepalese wool in international markets

Exports and imports of key livestock products are presented in Figure 17 below; total imports of these products exceed US$ 56 million and total exports are US$ 108 million. A more granular look shows that wool is the highest contributor of exports – Nepalese wool has high global demand, particularly the *Pashmina* wool. Over US$ 92.8 million worth of wool was exported in 2013 of which pashmina wool formed a significant portion.

Figure 17: Import and Export of Livestock Commodities in FY 2013



Source: Trade and Export Promotion Centre Database accessed in March 2014; Ministry of Commerce and Supplies

Wool, poultry and fisheries designated as "cottage industries"

The government of Nepal has designated wool, poultry and fisheries as cottage industries since they are a key contributor to rural livelihoods. While there are incentives created for cottage industries like lower taxes and easier access to credit, there are also restrictions placed on the degree of mechanisation permissible. Further, Foreign Direct Investment (FDI) is not allowed in cottage industries and this restricts their ability to attract risk capital for scale.

From a business-activity perspective, the dairy sub-sector is of specific importance given the high demand and the emergence of organized activity. However dairy-sector businesses face challenges in modernization and driving supply chain efficiencies; and access to appropriate risk capital may help businesses tackle these challenges. Given this, dairy businesses could also present more viable investment opportunities for private equity investors. These are described in more detail in Section 6.

3.1.2.3 Structure of Medicinal and Aromatic Plants (MAPs) Sub-Sector

The **Medicinal and Aromatic Plants** (MAPs) sub-sector in Nepal has grown in importance over the past decade and the country ranks 25th worldwide in MAPs export as shown in

Table 7. The trade when compared with giants like China and India seem unsubstantial, but Nepal has indigenous presence of over 700 species of plants with medicinal properties[46], and the MAPs

[45] Intellecap analysis from primary interviews done in March 2014

output can grow substantially by bringing in more organised activity and sustainable approaches in collection as well as greater degree of value-add to end product[47].

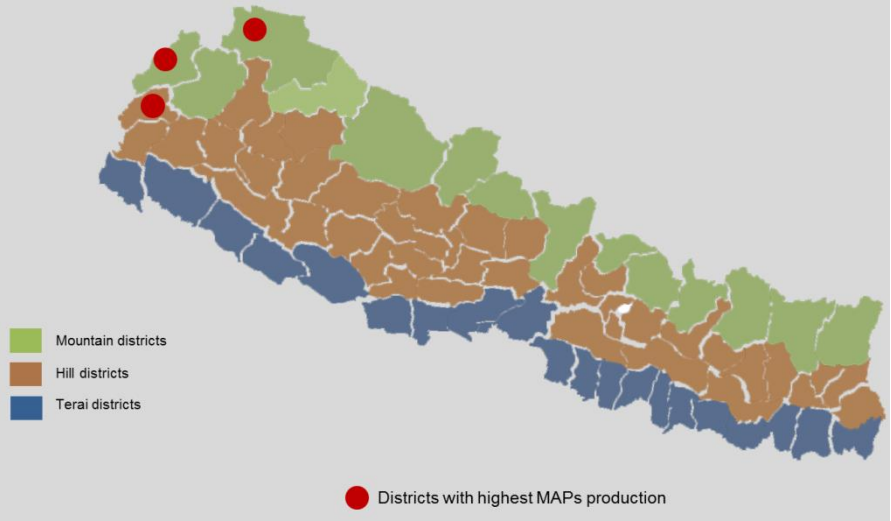
Table 7: Global export of MAPs

Export Rank	Country	Value of Exports (US$ million)
1	China	432.47
2	Germany	113.23
3	India	106.27
4	United States	0.078
5	Poland	0.065
25	Nepal	0.009

Source: Promoting Exports of Medicinal and Aromatic Plants (Maps) and Essential Oils from Nepal; South Asia Watch on Trade, Economics and Environment; 2011

MAPs are predominantly collected from the western hill and mountain districts of Humla, Darchurla, and Baitadi as shown in Figure 18.

Figure 18: Geographic Concentration of MAPs farming



Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012

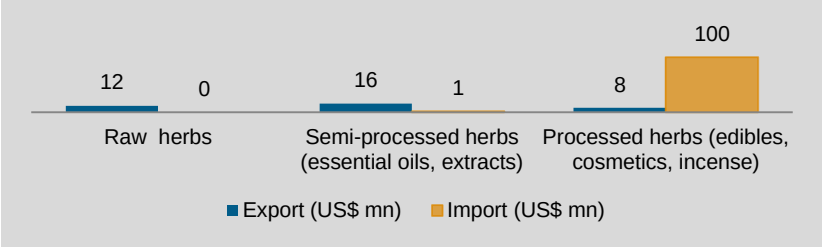
MAPs sub-sector is export oriented, with most products being exported with little processing or value-addition

Nepal produces MAPs primarily in raw and semi-processed form (like essential oils) whereas end consumer demand is for finished products such as soaps, creams and health supplements. Due to lack of processing infrastructure in the country, most of this raw material is exported to neighbouring MAPs processing hubs like India and then imported back into Nepal as finished goods. As a result, Nepal is a net exporter of raw MAPs and a net importer of processed MAPs as shown in Figure 19, and this data is also a good indicator for local production and demand. There is an opportunity to build a MAPs industry that markets processed and branded products. Such an industry would not only serve a global clientele, but also the domestic market which imports US$ 90 to 110 million worth of

[46] HMG & IUCN and National Conservation Strategy for Nepal; 1986
[47] See Section 3.1.4 for details

processed MAPs products like ayurvedic and homeopathic non-prescription drugs and cosmetics which is 20 times the worth of the raw MAPs products it exports to other countries.

Figure 19: Import and Export of MAPs in FY 2013



Source: Trade and Export Promotion Centre Database accessed in March 2014; Ministry of Commerce and Supplies

Given the high demand for MAPs in international markets, and the export-oriented nature of MAPs sub-sector in the Nepal, agribusinesses operating in this sub-sector could also present lucrative investment opportunities for private equity investors. This has been discussed in more detail in Section 6.

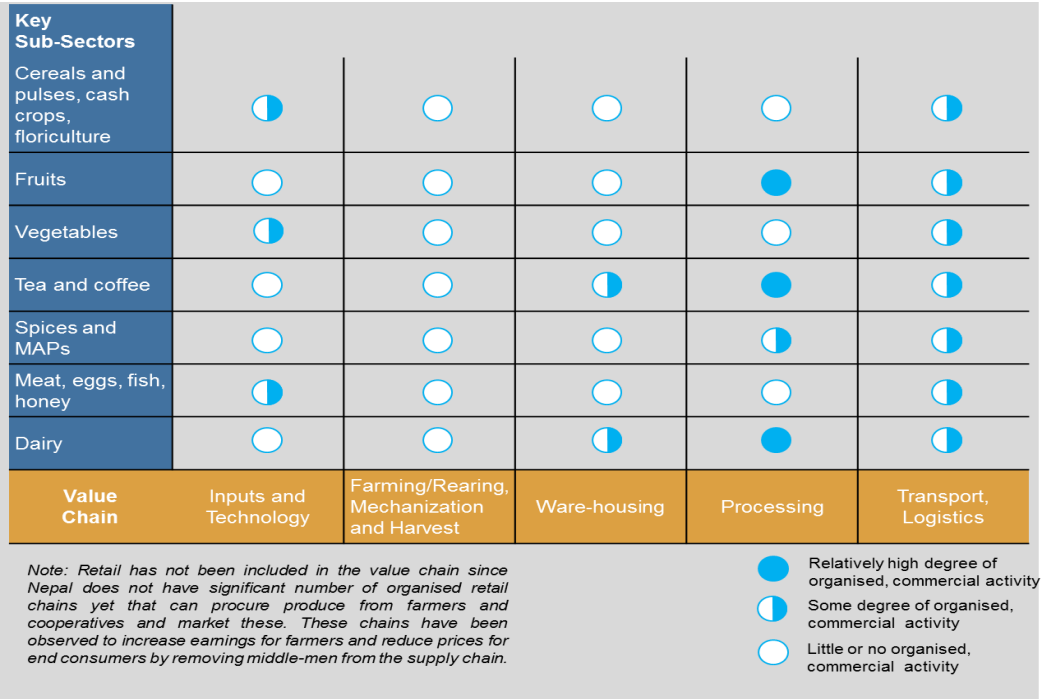
3.2 Current State of Agriculture in Nepal

The state of the agri-value chain differs across sub-sectors, with some having more developed value chains than others[48]. The value chains of cereals, pulses, cash crops, vegetable, floriculture, meat, eggs, fish and honey are less developed; especially at the processing stage where most value-add can be typically seen. As a result, the commercial-scale activity in these sub-sectors is still nascent.

On the other hand, value chains of fruits, tea and coffee, spices and MAPs, and dairy are more developed, especially at the processing stage which is crucial for commercially viable activity as shown in Figure 20. In addition to these sub-sectors, the improved seeds industry has also shown commercial scale activity, especially in vegetable seeds[49].

[48] See Section 2.2 for details
[49] See Section 2.2.1 for details

Figure 20: Mapping organised, commercial activity in agri-sector



Source: Intellecap analysis, 2014

Overall the sectors that have organised, commercial scale activity which is expected to scale in the medium to long term are – seeds, fruit, tea, spices, dairy and MAPs. These sectors will be reviewed in further detail in subsequent sections to analyse their growth drivers, market size, challenges and opportunities.

3.3 Market Opportunity of Agriculture in Nepal

Agricultural commodities from Nepal have demand in both domestic and international markets. Besides this some of the subsectors have done exceptionally well in terms of growth rate. Based on this, the market opportunity in domestic and global (export) markets have been estimated for 6 sub-sectors – (a) Improved seeds, (b) Fruits processing, (c) Tea processing, (d) Spices processing, (e) Dairy processing, and (e) MAPs processing[50].

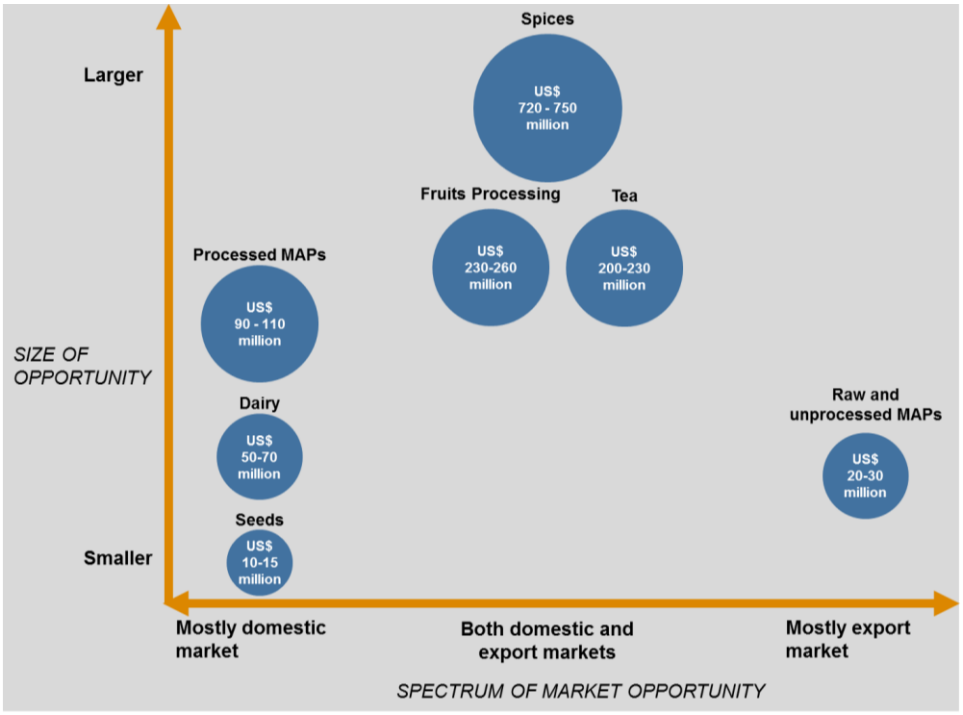
The market opportunity for commodities with export potential is significantly higher than those with domestic potential[51] only

Spices, tea and fruits processing industries which serve both domestic and international markets have been found to have greater market opportunity as shown in Figure 21; compared to industries in seeds and dairy sub-sectors, and firms that export raw MAPs to international markets

[50] Please see Table 29 in annexure for more information on assumptions and data sources for calculation of market opportunity

[51] While the market size presented in this section assumes consumers across Nepal, the addressable market for the next 2-3 years is mostly in Kathmandu Valley and some larger cities like Pokhara and Bharatpur

Figure 21: Market opportunity of various agriculture sub-sectors in domestic and international markets

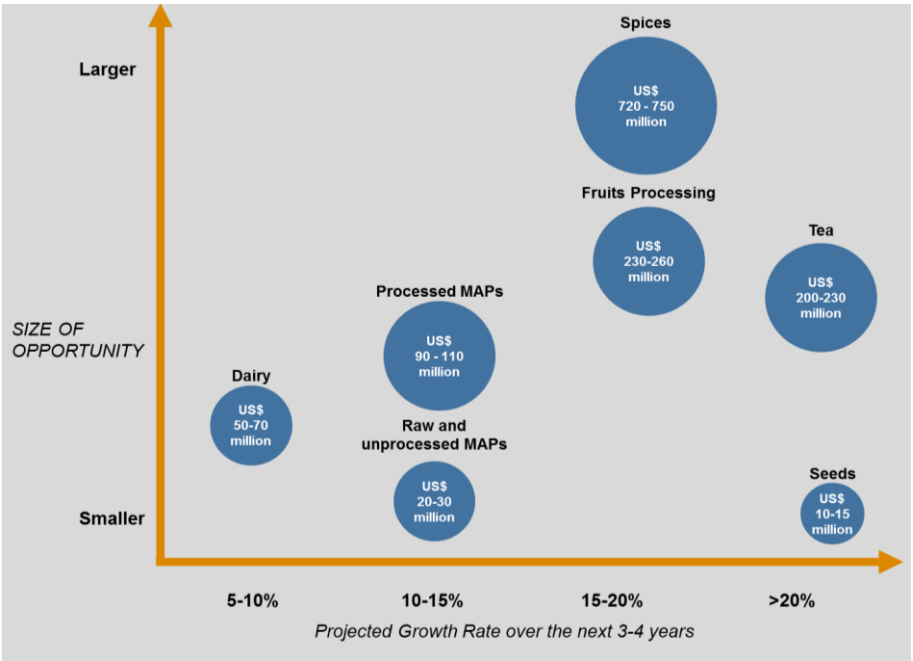


Source: Intellecap analysis, 2014; see Section 7.3 in annexure for methodology

Industries in spices, tea and fruits processing also have higher growth rates than others

The larger market opportunity is spices, tea and fruits processing combined with higher growth rates have led to the emergence of these as more attractive sub-sectors as shown in Figure 22.

Figure 22: Comparison of market opportunity to projected growth rates



Source: Intellecap analysis, 2014; growth rates based on insights from primary interviews conducted in February 2014

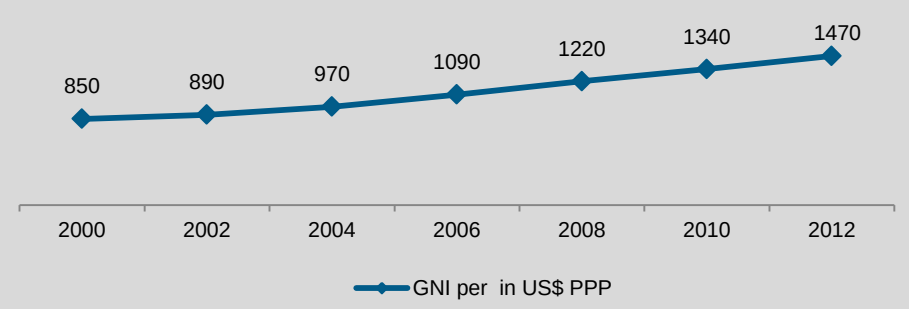
3.4 Analysing Growth Drivers of Agriculture in Nepal

The slow but steady growth of the agricultural sector is largely due to three drivers – (a) changing consumer landscape in Nepal leading to growing domestic demand, (b) demand for Nepalese products in international markets, and (c) increasing thrust from Government on commercialisation of agriculture

Consumption patterns in Nepal are shifting towards higher value agri-produce and processed foods as a result of higher disposable income

The per capita GNI in Nepal is rising at a Compounded Annual Growth Rate (CAGR) of 5% since 2000 as shown in Figure 23. Buoyed by recent political and social stability and a new middle class is emerging[52]. Further, remittances from outside Nepal have reached a significant size and constituted 20% of the GDP in 2012. Over 30% of Nepal's male working population has migrated to other countries, and their remittances have grown 50-fold to over US$ 4 billion over the past decade. 56% of all households receive remittances and use 79% of this for daily consumption. Shift in consumption pattern has resulted in doubling of import of processed food over a 4-year timeframe – from US$ 78 million in 2009/10 to US$ 140 million in 2012/13.

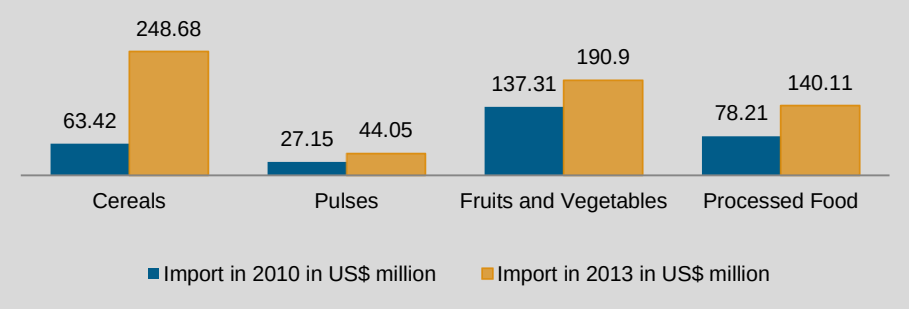
Figure 23: Growth in GNI per capita



Source: Ministry of Finance, Government of Nepal, 2012/13

Commodities like cereals, pulses, fruits and vegetables, and livestock edibles have seen a rise in consumption as evidenced by increase in imports shown in Figure 24.

Figure 24: Growth in Import of Food

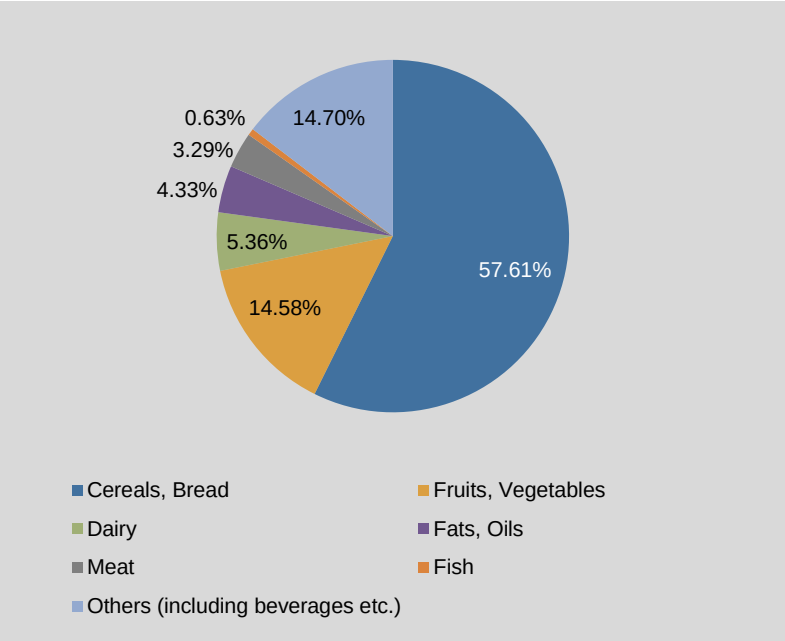


Source: Trade and Export Promotion Centre Database accessed in March 2014; Ministry of Commerce and Supplies

[52] Asian Development Bank, Rise of Asia's Middle Class, 2010

The typical pattern of expenditure on food and beverages in Figure 25 shows higher spends on cereal and bread, fruits and vegetables, and dairy products[53]. On an average; 40% of every additional US$ of income entering a household is spent on food, beverages and tobacco[54].

Figure 25: Typical patterns of food expenditure in Nepal

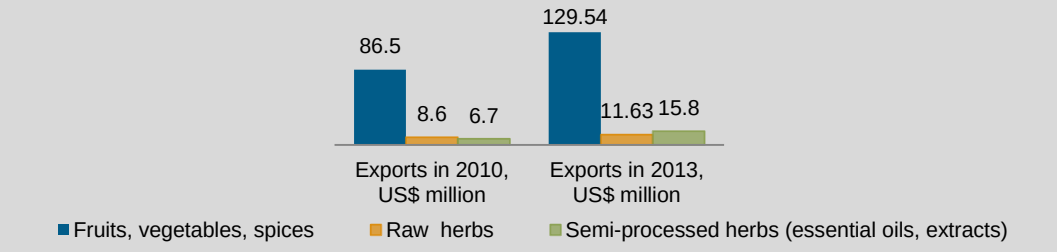


Source: United States Department of Agriculture; International Food Demand; 2010

The rising demand for Nepalese agricultural products in the international market is also a key growth driver

Export of spices like ginger and large cardamom, raw herbs like asparagus; and semi-processed herbal products like essential oils is steadily rising as shown in Figure 26 and in-turn driving up production. The global trade in these commodities has been growing, especially in fruits and vegetables that have recorded a CAGR of 10.5% over the past 5 years[55]. Hence, this driver is only expected to become stronger over the next 4-5 years.

Figure 26: Growth in Exports of Some Agricultural Commodities



Source: Trade and Export Promotion Centre Database accessed in March 2014

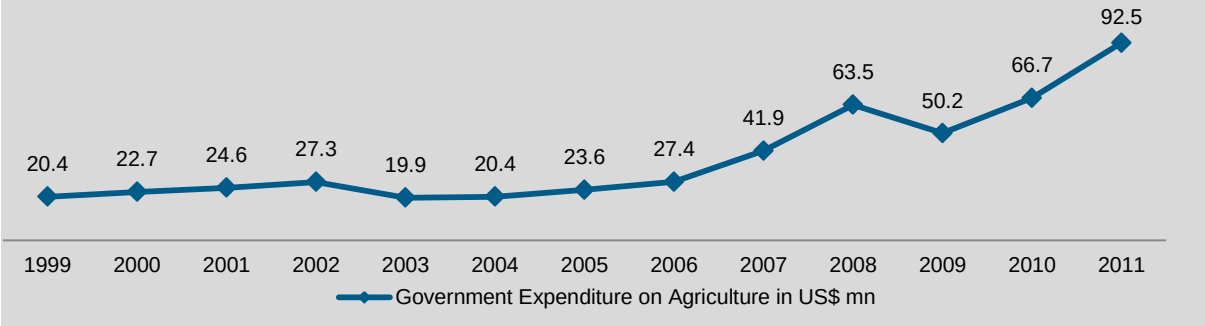
[53] United States Department of Agriculture; International Food Demand; 2010
[54] United States Department of Agriculture; International Food Consumption Patterns; 2010
[55] FAOSTAT database, accessed in March 2014

There is growing government support for commercialisation of agricultural sector

There is growing interest from public sector including the Government and its aid partners in supporting commercialisation of the agri-sector. Over 7000 km of road network have been added in the last decade, and on an average over 51%[56] of total irrigable land has been brought under irrigation when compared to 23.7% in the 1980s. In the Western Districts of Terai where bulk of commercial farming is done; over 71% of land is under irrigation[57]. These systemic changes to create an enabling environment for agricultural activity present an opportunity for the sector to become more value-added and make an even greater economic contribution.

Government support to agribusiness has also been improving, and public spending on the sector has increased almost 5-fold in the past decade as shown in Figure 27. Efforts are being made for improved SME-level outcomes through agri-extension services, priority sector lending norms for agribusinesses, and focus on driving private sector investments[58]. "Farm to market" connectivity is gradually improving, with over 7000 km of road network built in the last decade[59]. Mechanisation and better quality inputs are improving as well with 373 agri-extension service centres[60] set up – the Terai area has benefited especially from these and it alone accounts for over 92% of the total available mechanical power in the country[61].

Figure 27: Growth in Government Expenditure on Agriculture



Source: Statistical Information on Nepalese Agriculture; Ministry of Agricultural Development; 2012

The National Agriculture Sector Development Priority (NASDP) document brought out by Government of Nepal in 2010 has further identified 8 priority outcomes that the Nepal Government and its aid partners will focus on to build the agricultural sector. The government is making slow but steady process towards these outcomes and early results are expected in 2015. Outcomes that are especially relevant for SME growth are presented in Table 8.

Table 8: Impact of the National Agriculture Sector Development Priority on Agricultural Businesses

Regulatory Outcomes	Market-Level Outcomes	SME-Level Outcomes
• Supportive regulatory environment and strategies to drive more private investment in agriculture	• Strengthening food supply chains and distribution infrastructure • Promoting adoption of technology and mechanisation in agriculture • Production diversified with market	• Improving farmer access to agri-extension services, including finance • Strengthening food supply chains and distribution

[56] Central Bureau of Statistics; Government of Nepal 2012
[57] Central Bureau of Statistics; Government of Nepal, 2010
[58] Agriculture is a focus sector for the Ministry of Industry's "Invest in Nepal" initiative
[59] World Bank; Road Sector Development Project; 2013
[60] These hubs have been established but actual efficacy has to be gauged during primary interviews
[61] Full Bright Consultancy; Feasibility Study on Agricultural Mechanisation in Terai Region of Nepal; 2006

Regulatory Outcomes	Market-Level Outcomes	SME-Level Outcomes
• Cross boarder import and export promoted through control of trans-boundary diseases and barriers to trade	orientation from agri-business perspective • Irrigation infrastructures expanded • Rural roads constructed and maintained • Rural energy promoted for the production and processing value chain operations	• Promoting adoption of technology and mechanisation • Supportive prices for inputs and outputs • Institutional support for marketing enhanced

Source: ADS website, accessed in February 2014

3.5 Challenges Facing the Agricultural Sector

The key challenges facing agricultural sector include – (a) Low usage of technology and agri-inputs has a negative impact on productivity (c) lack of skilled manpower, (d) infrastructure and terrain-related challenges, and (e) political risk to private sector operations

Low usage of technology and agri-inputs has a negative impact on productivity

Overall, only 23% of farms in Nepal are mechanised with most mechanised farms concentrated in the Terai region[62]. The usage of agri-inputs is also very low as shown in Figure 5. Most technology and inputs used in the agriculture sector are imported as well (US$ 225 million worth in 2012) and need the same time to move from Kolkata to the field in Nepal. This transit time adds costs to business operations resulting from fleet hire, fuel, spoilage and pilferage. It also reduces predictability of international trade since delivery schedules vary over a wide range, and is particularly harmful for agri-practitioners that depend on import markets for access to agri-inputs.

Lack of skilled manpower is a challenge for commercial-scale agriculture

With low mechanisation, irrigation and yields; agri-sector jobs are labour-intensive and low-paying since the ultimate value-add is low. As a result, these jobs are not lucrative for young aspiring population – especially those who have received high school education. In fact, over 30% of working age males are reported to be working outside the country[63].

Infrastructure and terrain-related challenges create systemic barriers to growth of agriculture

Infrastructure needed for agriculture sector to thrive is inadequate in Nepal. This includes the road network, irrigation, power, storage and warehousing, and logistics for transport. Some indications of this inadequacy have been presented in Table 9.

Table 9: Comparison of state of infrastructure for agriculture across different regions

Region	Road density[64] (in km, 2008)	Power consumption per capita (in kWh, 2011)	Irrigation coverage[65]
Nepal	13.5	106	50% coverage of cultivated land, 18%

[62] Nepal Agricultural Research Council; 2013
[63] World Bank, 2011
[64] Ratio of the length of the country's total road network to the country's land area
[65] Refers to agricultural areas purposely provided with water, including land irrigated by controlled flooding

Region	Road density[64] (in km, 2008)	Power consumption per capita (in kWh, 2011)	Irrigation coverage[65]
			receive year-round irrigation
Global Average	28.5	3,044.2	26% coverage of cultivated land, 3% receive year-round irrigation
Lower Middle Income countries average[66]	51.2	734.3	*Data not available*

Source: World Bank Development Indicators, 2008 data points, database accessed in March 2014; MoAD Yearbook 2012; International Water Management Institute Irrigation database, accessed in March 2014;

Nepal's geographic location and difficult terrain add further challenges in farm-to-market linkages. The country is land-locked between India and China; and goods have to be moved by road to domestic and international markets. Export-oriented goods have to be transported to an international port in the East Indian city of Kolkata; often needing as many as 12 clearances and up to 40 days to move from warehouse to ship[67].

Sector also faces a degree of political risk

Nepal has been comparatively stable with establishment of a multi-party republic in 2008, and is building the infrastructure for effective governance with technical and financial assistance from several partner countries. However, dead-lock in decision making and short cabinet terms have created a direct impact on sector by creating roadblocks to sector budgets, programme planning, implementation and release of aid. They have also contributed in-part to the poor state of infrastructure like roads, irrigation, and power which increase the cost of doing business in Nepal. With the conclusion of elections in 2013, the newly elected government is expected to focus its efforts on driving long-term growth in the agricultural sector.

[66] The 2012 GNI per capita for Nepal was US$ 1500 (PPP); which would categorise it as a lower middle income country as per World Bank definitions

[67] World Bank Nepal Country Profile; Video Case Study; 2012

Figure 28 presents specific challenges and opportunities for private sector in agriculture

Figure 28: Opportunities and challenges for private sector in agriculture

OPPORTUNITIES	CHALLENGES
• Locally produced agri-inputs such as improved seeds for cereals, pulses and cash crops; and natural replacements for agro-chemicals	• Over-reliance on imports for agri-inputs, especially fertilizers, pesticides, herbicides, insecticides and improved seeds of cereals, pulses and cash crops
• Domestic production of innovative and low cost farm implements and machinery as described in Case Box 1	• Low productivity of the sector as a result of fragmented landholdings, traditional approaches, and insufficiency of infrastructures
• Focus on better farm to market linkages to address information asymmetry like mobile-enabled farmer support services	• Mismanagement of produce during peak and lean seasons leading to wide variance in prices for farmers and spoilage of produce
• Increase access and availability of private lease-based agri-storage and warehousing infrastructure; including temperature and humidity controlled storage	• Insufficiency of agri-storage leads to food spoilage and increased costs of production for businesses that each need to invest in building their own storage infrastructure
• Shift focus of private sector towards greater role in processing and value addition to agri-produce to realize higher profits and build competitive edge	• Most domestic commercial-scale activity is focused on cleaning, packing and retailing agri-produce with very little value addition. Hence it is not scalable and loses competitive edge to foreign firms
• Build a brand for Nepalese agri-produce by creating easy and affordable access to organic certification, area of origin certification, and international quality assurance certification	• Very little systemic infrastructure for certification and quality assurance of products. This creates barriers, especially for export oriented markets as seen in the case of honey (Section 7.5.2)
• Attracting greater risk capital from foreign equity and debt funds, as well as domestic High Networth Individuals (HNIs) by showing the opportunity for agri-sector investments (Section 7.4)	• Businesses face significant barriers to accessing appropriate financing at different growth stages

Source: Intellecap analysis, 2014

4. Regulatory and Policy Landscape in Agriculture in Nepal

The overall regulatory outlook is positive in Nepal

Nepal follows a free market approach to policy and regulation in Agriculture, and encourages as well as incentivises activity by private sector firms Policy-making and regulation are centralised in agriculture-sector and follow a top-down approach.

Seven government ministries and bodies serve the Agricultural sector in Nepal; of which the Ministry of Agricultural Development (MoAD) is most relevant for businesses as it oversees crop production, food security, horticulture, livestock, fishery, technology management, inputs supply and marketing. In the role of regulator, the MoAD performs some key functions including – building a common roadmap for development of the sector, drafting of policies for each sub-sector, issuing periodic guidelines for public and private sector organisations, and monitoring and evaluation of implementation of policies. The regulatory environment in Nepal impacts the incorporation of Agriculture businesses, their ease

of doing business internationally, and even impacts their long term viability through incentives for Agricultural businesses.

Aside from playing the role of regulator and facilitator, the state is also a value chain player through state-owned businesses that operate in dairy, seed, tea and MAPs sub-sectors. These businesses contribute to policy-making and issue guidelines that private sector companies follow. This has created some inefficiencies in the sector where government produced commodities that are often subsidised can sometimes compete with private sector products. However the state-sector companies are riddled with inefficiencies of their own and do not produce at capacity. Hence this risk is small and private companies are able to manage it.

Agriculture sector regulation is expected to become more private sector friendly in the next few years with the launch of a new Agriculture Development Strategy

The MoAD has historically based policy and regulatory actions on an overall guiding roadmap. The current roadmap "National Agricultural Plan (NAP) 2005" focused on modernisation and commercialisation of agriculture, but largely failed to achieve its goals due to insufficient strategic focus on systemic issues plaguing the sector and poor implementation of the plan. The next roadmap named "Agricultural Development Strategy (ADS)" is currently being developed and is envisioned as a twenty year roadmap. The government of Nepal is being supported with technical assistance from 11 donors including World Bank, AD, IFAD, FAO and others. The process of creating the roadmap started in 2011; has included over 3000 interviews and over 60 consultations. It is thus far the most structured approach to agri-sector roadmaps in the history of Nepal[68]. ADS is in the "policy formulation" stage now and is expected to be launched soon.

Some policy outcomes expected from ADS that could impact agribusinesses include:

At pre-harvest and harvest stages:

- Incentivise aggregation of small landholdings into "shared-cropping" land banks to commercialise agriculture and address production-level challenges
- Creation of provisions to allow formation of PPPs with businesses for providing agri-extension services to farmers. This will improve capacities of farmers while providing businesses with a strategy for building better backward linkages
- Optimising quantum of subsidies in agri-inputs and making them more targeted to poor and marginalised farmers. This will remove inefficiencies from seed sub-sector resulting from sale of subsidised seeds to mid-to-high income farmers.
- Development of a leasing market for agricultural equipment; and decreasing barriers to import and resale of agri-machinery like tractors
- Tax incentives for crop insurance providers and banks for increasing lending to sector

At post-harvest stage:

- Establishment of quality assurance systems across different sub-sectors
- Tax concessions to promote investment in post-harvest machinery
- Investments in ICT interventions to decrease information asymmetry in the sector
- Promotion of PPPs for storage, warehousing, processing and logistics – both on-farm and at large agro-industrial parks
- Support for agribusinesses through a combination of tax concessions, innovation matching grant funds, incubation, accelerated depreciation and investment allowances

[68] ADS website, accessed in March 2014

- Address challenges around trade through bilateral dialogue with important trade partners for concessions for Nepalese produce and recognition of domestic quality assurance certification

4.1 Licensing Requirements in Agriculture

The specific licences and approvals needed by agribusinesses vary across sub-sectors with seeds and MAPs industries needing more licences than others

There are over 30 approvals and licences for the agri-sector in Nepal, of which 20 are relevant to the sub-sectors analysed in Section 3.1 as shown in Table 10. Seed and MAPs sub-sectors require the highest number of additional licences. The cost of procuring a licence ranges from 10 cents (US$) for VAT registration to over US$ 2000 for incorporation of a business; and the validity ranges from a year until the licence holding entity ceases to exist. Different licences need to be procured from different ministries and departments, taking from 1 day to over a year in processing time. There is no single-window system available yet, though the government has announced its intention to launch one in the near future.

Table 10: Licences required by agribusinesses in Nepal

Sub-sector/ Licences	Seeds	Dairy	Fruits	MAPs	Spices	Tea
1. Certificate for Registration of Pesticides	✓					✓
2. Export Permission Letter for Plants				✓		
3. Fertiliser Import	✓					✓
4. Import Permit for Plants	✓			✓		
5. Licence for Seed Production	✓					
6. Licence for Seed Traders	✓					
7. Licence to Non-government organisations or other organisations to manage protected area				✓	✓	
8. Permission for import/export of seeds	✓					
9. Pesticide Applicator Licence	✓		✓			✓
10. Phytosanitary Certificate			✓	✓	✓	✓
11. Agency Registration	✓	✓	✓	✓	✓	✓
12. Company Registration	✓	✓	✓	✓	✓	✓
13. Design Registration	✓	✓	✓	✓	✓	✓
14. Industry Registration	✓	✓	✓	✓	✓	✓
15. Partnership Firm Registration	✓	✓	✓	✓	✓	✓
16. Patent Registration	✓	✓	✓	✓	✓	✓
17. Permanent Account Number (PAN) Registration	✓	✓	✓	✓	✓	✓
18. Permission for Foreign Investment & Technology Transfer	✓	✓	✓	✓	✓	✓
19. Trademark Registration	✓	✓	✓	✓	✓	✓
20. Value Added Tax (VAT) Registration	✓	✓	✓	✓	✓	✓

Source: Nepal Business Licence e-portal

4.2 Taxation, Royalties and Subsidies Framework in Agriculture

The taxation structure is standard across agribusiness sub-sectors except in export-oriented industries which pay lower taxes

Agribusinesses have an applicable tax rate of 25% and export-oriented agribusinesses that source from Nepal have a reduced tax rate of 20%. Industries can access further rebates and tax holidays based on criteria like establishment in designated hill and mountain districts. Corporate income tax and capital gains tax form the largest constituents of the typical taxation structure for medium-sized agribusinesses in Nepal as shown in Table 11.

Table 11: Taxation structure for agribusinesses in Nepal

Element	Statutory Tax Rate	Comments
Corporate income tax	20%	Manufacturing industry, percentage of taxable profit
Employer – paid social security contributions	10%	Percentage of gross salaries
Taxes on vehicles	~ US$ 260	Fixed rate
Municipal business tax	~ US$ 100	Fixed rate
Tax on interest	15%	Percentage of interest income
Property tax	Various rate	Depend on land value
Capital gains tax	20%	Percentage of capital gains
Land revenue tax	~ US$ 1 per 5283 square feet	
Stamp duty on financial contracts	Various rates	

Source: World Bank, Doing Business Report, 2013

Firms interviewed during the course of this study reported that the taxation structure did not incentivise agri-businesses, and cited examples of agri-sector tax reductions for firms in India that allowed them to compete more effectively in domestic and international markets. Similar structures may be beneficial for Nepal as well, and are being explored in MoAD's soon-to-be-launched ADS.

Aside from taxes, agribusiness companies may also be charged royalties, custom duties and octroi charges

In addition to these taxes, the **government also collects royalties from MAPs and Spice traders** that source produce from government-owned forest areas. These royalties form a significant component of cost of production as shown in **Figure 44**. There are inefficiencies in the royalty collection system including arbitrary rates for royalties and different royalties for the same plant species listed under different names. Further, due to lack of sufficient infrastructure to source origin of produce, many agri-businesses pay royalty to government even for MAPs and Spices harvested from private forest land[69]. Royalty rates differ across different types of produce, but the typical rate charged for Asparagus is 2 to 5 cents (US$) per kilogram.

Custom duties charged on products or raw materials also impact agribusinesses

Prevailing tariff rates for imports range from 5 to 80%, and the customs value is calculated based on cost insurance and freight on import. An additional fee of 5% is charged on imports of Agri-inputs towards Agriculture Development (AD) which impact **seeds industries** since most businesses are structured as seed importers and distributors. Aside from seeds-subsector the **fruits processing industry** is also impacted significantly by custom duties due to heavy import-reliance for fruits as well

[69] FAO, ANSAB and Forest Connect; Challenges and opportunities for Nepal's small and medium forest enterprises; 2009

as packaging materials. Agribusinesses that are established in Export Promotion Zones (EPZ) or Special Economic Zones (SPZ) are not required to pay custom duty on raw materials and auxiliaries imported by them. Export is generally free of custom duties[70].

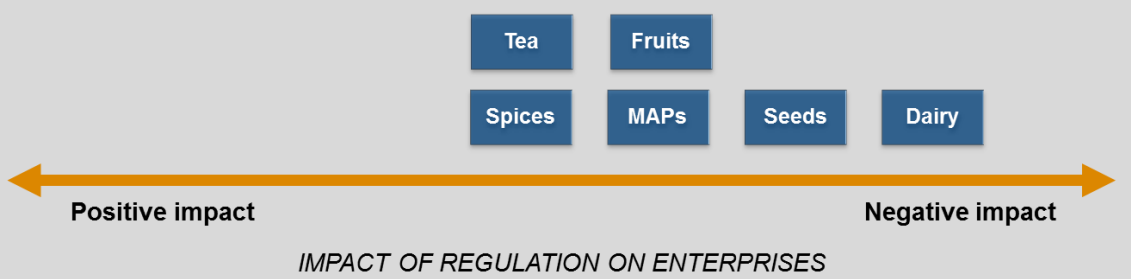
Special subsidies and incentives are mostly directed towards export-oriented agribusinesses that source raw materials from Nepal or for businesses based out of EPZs and SEZs

Sub-sectors like MAPs, fruits, spices and tea which export products created from Nepalese raw materials pay slightly lower taxes. Businesses that based out of EPZs and SEZs are not required to pay custom duties as explained above. Aside from these, there are no specific benefits for agribusinesses. The new ADS has recommended benefits for businesses described earlier in this section, and if brought in those incentives may benefit growth of the sector depending on specific nature and implementation.

4.3 Impact of Regulations on Enterprise Operations and Value

Based on the regulatory framework analysed in Sections 4.1 and 4.2; the impact of regulatory system across different sub-sectors varies as shown in Figure 29.

Figure 29: Impact of regulation on enterprise value and operations



Source: Primary interviews with heads of agribusinesses conducted by Intellecap in March 2014

Tea and spices sectors see most positive impact of regulation

Most agribusinesses in tea and spices sub-sectors are export-oriented and benefit from lower tax rates schemes for businesses that cater to foreign markets. At the same time, there are no significant inhibitory policies from the regulator and hence on a comparative-basis companies in these sub-sectors are more likely to see positive impact of regulation.

The tea sub-sector has some special regulatory benefits that are largely driven by active involvement from the National Tea and Coffee Development Board (NTCDB). These include:

- Exemptions on land ceiling
- Easier access to credit through deprived sector lending norms
- Subsidy on land registration fee and land revenue leasing of up to 75% for 50 years
- 2 to 4% cash incentive for exports (note: tea companies interviewed during the course of this study reported delays and difficulties in obtaining this incentive)
- Special grants for certified organic farms

[70] FNCCI; Trade, Industry and Tax Policy Highlights

NTCDB expects that this enabling environment will lead to a 2 to 3-fold rise in production of tea, creating financial value of nearly US$ 250 million per year and creating over 100,000 jobs.

Regulatory environment has comparatively less positive impact on fruits and MAPs subsectors

While fruits and MAPs sub-sectors do benefit from special concessions for export-oriented industries; this benefit can often be decreased by the impact of royalties and duties that industries in these sectors have to bear. In the fruits sub-sector import duties on raw materials and packaging and octroi charges increase cost of operation; while in the MAPs sub-sector the complex royalties attached to collection of MAPs from forests increase costs of operation.

Seeds industry has neutral to negative impact due to competition from state-subsidised seeds in the market

There is regulation-driven inefficiency in the seed sub-sector that arises from sale of state-subsidised improved seeds in the market. However, the impact on operations of private seed companies is negligible to low since the supply of subsidised seeds is inadequate. The impact of regulation on seed companies may become more negative in the future if a recent government proposal to disallow FDI in seeds is passed.

Dairy sees most negative impact from regulatory environment

Private companies in the dairy sector face competition from government-owned dairy industry that also provides guidelines on fixing prices. This creates inefficiencies in the market in-turn impacting viability of dairy companies.

5. Foreign Investment Policy and FDI in the Sector

The government recognises the need for growth capital in agriculture and is supportive of private sector investments from foreign countries

100% Foreign Direct Investment (FDI) is allowed in agricultural sub-sectors covered in Section 3.1.2 except poultry, fisheries, wool and bee-keeping. The regulatory regime recognises these “off-limit” subsectors as traditional cottage industries that must be protected. However, the Ministry of Agricultural Development has been considered prohibiting FDI is some more Agricultural sectors like seeds to prevent large multinational seed companies from flooding the market with their patented seeds. The Government’s stand on this matter is expected to become clearer once the ADS is released.

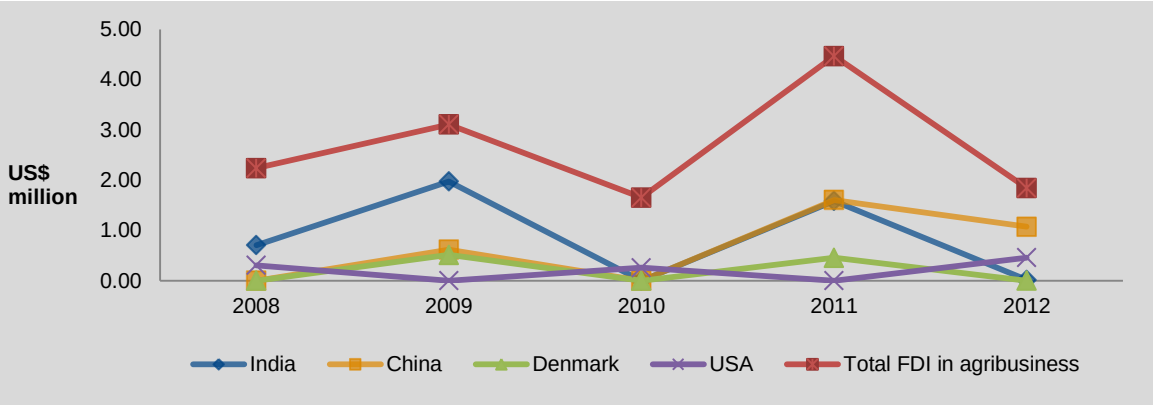
There is a significant albeit erratic track-record of FDI in agriculture

Over US$ 13 million of FDI has been channelled into agriculture by foreign entities from over 20 countries since 2008. Practitioners estimate that outside of promoters’ own equity, this is the largest source of private risk capital available in Nepal today[71]. The top 4 contributors of FDI in agribusinesses are India, China, USA, and Denmark as shown in Figure 30.

[71] From primary interviews conducted during the course of this study by Intellecap in February 2014.

The flow of FDI has been erratic with wide fluctuations, driven by the state of global markets as well as conditions of the local economy from where the FDI originated. India was a key contributor to FDI until 2009, but the inflows of capital are becoming more diverse now with China and USA also playing a key role.

Figure 30: Growth of FDI in agribusinesses in Nepal

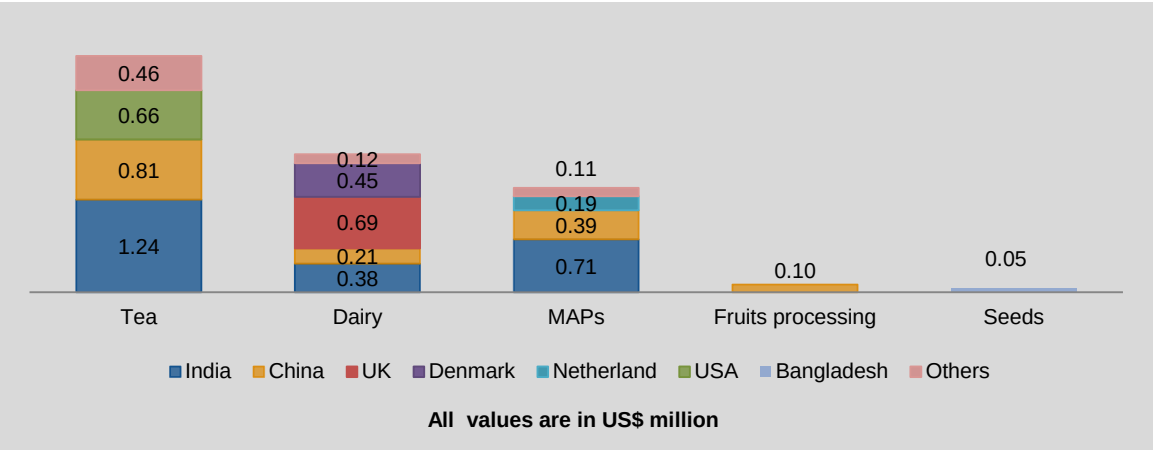


Source: Industrial Statistics 2013 and Intellecap analysis, 2014

Most FDI capital is directed towards tea, dairy, and MAPs industries as shown in Figure 31

Cumulative capital flows since 2008 show that foreign companies have made investments to strengthen their portfolios in specific commodities with some degree of import dependence in their local economies – for e.g. India, China and USA have high demand for quality tea and hence entities from these countries have invested in Nepalese tea traders and processors to secure supply at attractive prices.

Figure 31: Cumulative FDI inflows into different agri-sectors since 2008



Source: Industrial Statistics 2013 and Intellecap analysis, 2014

Most FDI investments are structured with majority ownership for the foreign investor

Ownership structures in FDI in agribusinesses typically ranging from 70% to 100%[72]. There is a trend of complete buy-out of Nepalese business by foreign entities in several cases. One of the major

[72] Industrial Statistics Nepal 2013, and Intellecap analysis, 2014

reasons for this includes low understanding and acceptance of working with external boards amongst domestic promoters – who prefer to dilute their stake completely rather than into a Joint Venture (JV) with a foreign company which requires them to report to a board of directors with external representatives. Another reason is the low availability of exit platforms in Nepal, which forces promoters to take any opportunity they get to realise value from their businesses. Since valuations in Nepal are still on the lower side, often this means that a promoter has to completely dilute stake to get a significant value out of the enterprise.

Joint Ventures (JVs) in agriculture can help businesses access not only financial but also technical assistance; and help them scale faster

Increased inflows of foreign investments can serve to catalyse the sector and help to bring down heavy reliance on imports. Aside from financial contribution to firms, foreign firms that form JVs with domestic companies are beneficial in bringing in expertise in the form of technology and processes, management best-practises, and access to markets.

6. Investment Opportunities in Agriculture

The investment opportunities in agribusinesses operating in different sub-sectors can be broadly categorised on basis of currently viable, emerging and non-opportunities as shown in Figure 32.

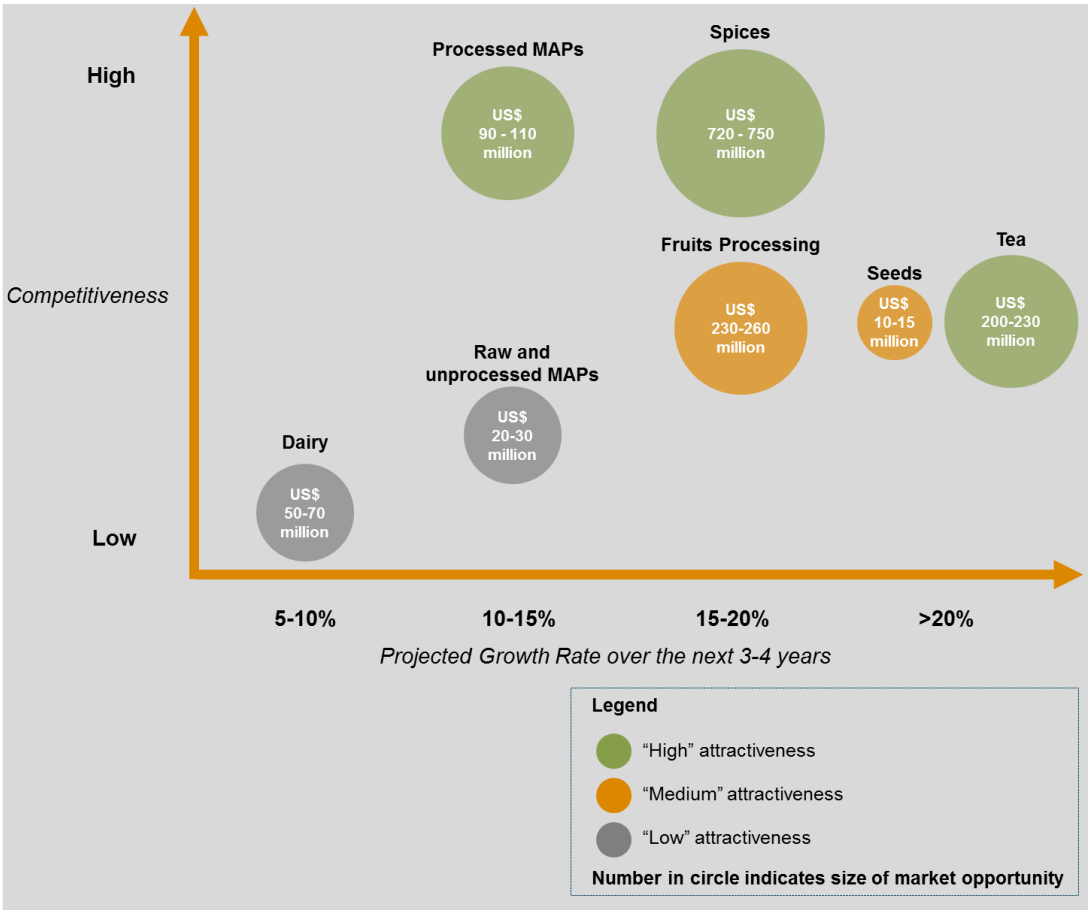
Figure 32: Categorisation of investment opportunities in Nepal

Currently Viable Opportunities	Emerging Opportunities with Future Potential	Non-Opportunities
•Seeds •Dairy •Fruit processing •Spices •MAPs •Tea	•Honey •Coffee	•Cottage industries - fisheries, poultry, bee-keeping, wool •Animal feed

Currently viable investment opportunities exist in agribusinesses operating in seeds, dairy, fruit processing, spices, MAPs and tea sub-sectors as shown in

These 6 sub-sectors show some degree of commercial-scale and organised activity (as shown in Figure 20) and with significant consumer demand. Further, FDI with 100% foreign ownership is allowed in these businesses and hence the regulatory environment is also supportive for investors. Currently viable investment opportunities can be further prioritised based on the degree of attractiveness into “high”, “medium” and “low” categories as shown in Figure 33.

Figure 33: Comparison of currently viable investment opportunities in agribusinesses in Nepal



Source: Intellecap analysis, 2014

The different dimensions of business model and external environment dependencies used to analyse "attractiveness" include:

- Projected growth rates for sectors as reported by leading agribusinesses interviewed during the course of this study
- Market opportunity across different sub-sectors
- Competitiveness of businesses in each sub-sector, which is measured as a function of strength of the business model – including margins, brand value, use of technology and modern approaches, access to markets and financial health. Competitiveness is also a function of level of external competition that businesses in the sub-sector face

Based on analysing agribusinesses in different sub-sector across these 3 dimensions:

- Investment opportunities in agribusinesses in **spices, MAPs and tea sub-sectors** can be categorised as "**high**" in terms of degree of attractiveness
- Investment opportunities in agribusinesses in **fruit processing and seeds sub-sectors** can be categorised as "**medium**" in terms of degree of attractiveness
- Investment opportunities in agribusinesses in **dairy and raw/unprocessed MAPs sub-sectors** can be categorised as "**low**" in terms of degree of attractiveness

Emerging opportunities with future potential can be explored in agribusinesses operating in honey and coffee sub-sectors

While Nepalese coffee[73] and honey[74] are perceived as high value products in international markets; several systemic challenges currently curtail the growth of businesses in these sub-sectors. While honey faces the challenge of not meeting international food quality standards; the annual production of coffee is ~500 metric tons[75] which is unviable for commercial-scale activity. However, the government as well as private sector industries are taking steps towards tackling these challenges and they are expected to be solved in the next few years. Should this take place, agribusinesses in these sub-sectors would be well positioned to leverage existing demand in the market; and hence have been categorised as emerging opportunities.

Non-opportunities include cottage industries which are off-limits to FDI, and animal feed industries which operate in an over-crowded market

FDI is currently not allowed in companies operating in sub-sectors of poultry, fisheries, bee-keeping and wool. These industries are classified as "cottage industries" by the government and are not currently available as investment opportunities to foreign investors. However due to rising income levels and consequent increase in demand for meat and fish in Nepal as well as the high demand in neighbouring countries, poultry and fisheries have potential to become "Emerging Investment Opportunities" if the FDI norms are relaxed to allow foreign investments.

In addition to these sub-sectors, the animal feed market is over-crowded and operates on very thin margins as explained in Section 3.1.2.2, and is not likely to be an attractive investment option.

6.1 Currently Viable Investment Opportunities

A detailed analysis of competitive landscape, value chains, business models and specific investment opportunities in agribusinesses in each sub-sector where private equity investments are currently viable follows.

6.1.1 Investment Opportunities in Spices Sub-Sector

Spice trading occupies a significant place in global agro-trade and has shown steady growth

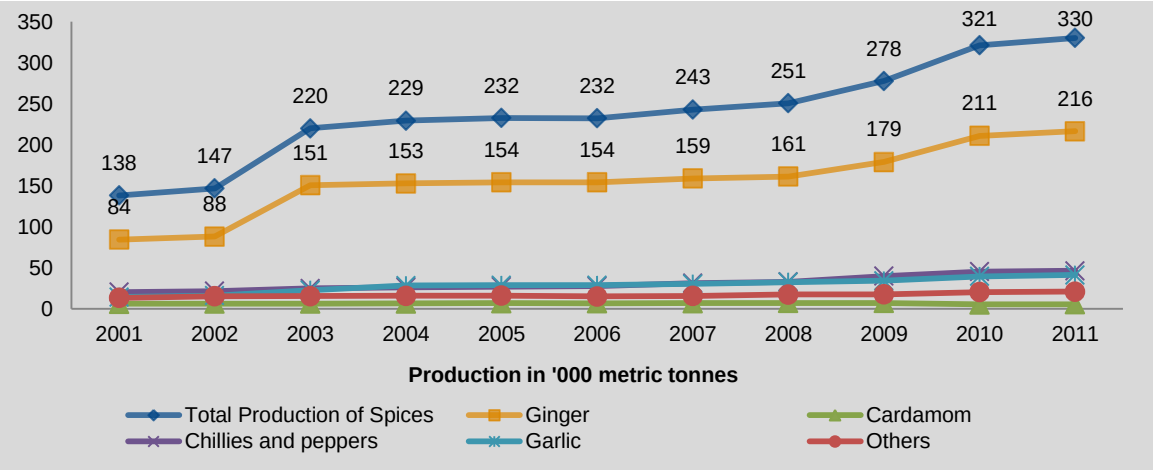
From a global perspective, spice trade is focused on peppers, cinnamon, nutmeg/mace, cloves cardamom, vanilla, turmeric, and cassia which are used as seasonings in food preparation. The global trade in these commodities was over US$ 11.3 billion in 2011; and has been growing at CAGR of 11% since 2001[76]. Spice trade involves collection or farming, cleaning and processing of these spices. Processed spices include whole or ground spices, mixtures of spices, and ready-to-cook sauces made from spices.

[73] See Section 6.2.1 for details
[74] See Section 6.2.2 for details
[75] MoAD Yearbook, 2012
[76] FAOSTAT database, accessed in March 2014

Nepal is a globally relevant player in high value spice commodities like ginger and cardamom; and also has favourable agro-climatic conditions to other spices like ginger, cardamom, turmeric and chilies

Nepal is a globally recognised producer of ginger and large cardamom[77]. Other spices produced that are commercially important include turmeric, chilies and garlic. The annual production of spices has been growing at a CAGR of 9% since 2001, driven largely by growth in ginger production as shown in Figure 34.

Figure 34: Growth in annual production of spices

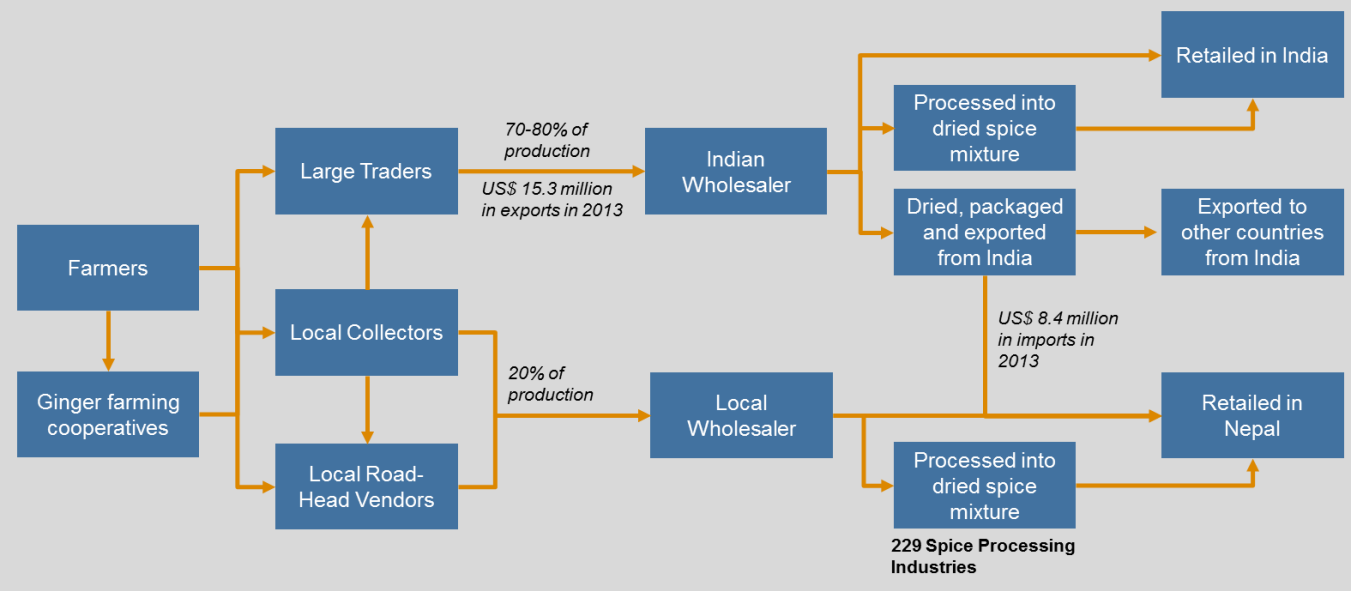


Source: FAOSTAT database, accessed in March 2014

There are over 229 licenced spice industries in Nepal[78], out of which only 2-5 can be categorised as medium to large-sized enterprises with over ~ US$ 300,000 in fixed capital investment[79]. These larger enterprises are either focused on ginger or cardamom; and their activities include packaging, processing and retail. They primarily target the export market, and in 2013 over US$ 15.3 million worth of ginger and US$ 43.4 million worth of large cardamom were exported. Figure 35 shows the value chain for ginger and Figure 36 for cardamom. There are two major types of cardamom as shown in Figure 36 – the small cardamom is cheaper and primarily caters to domestic demand; while large cardamom has an international market.

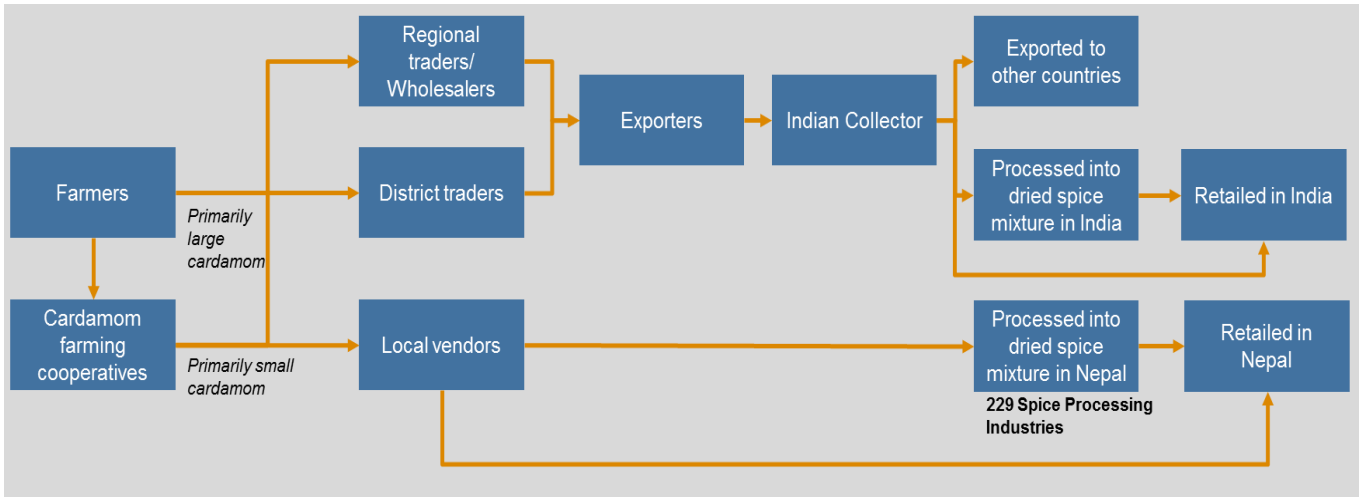
[77] Largest exporter of large cardamom and 15th largest exporter of Ginger as per FAOSTAT database, accessed in March 2014
[78] Department of Food Technology and Quality Control, 2013
[79] Department of Industries, Nepal, 2013

Figure 35: Ginger value chain in Nepal



Source: InfoDev, Promoting Agribusiness in Nepal, 2013; Mercy Corps, 2013; and Intellecap Analysis; 2014

Figure 36: Cardamom Value Chain in Nepal



Source: InfoDev, Promoting Agribusiness in Nepal, 2013; Mercy Corps, 2013; and Intellecap Analysis; 2014

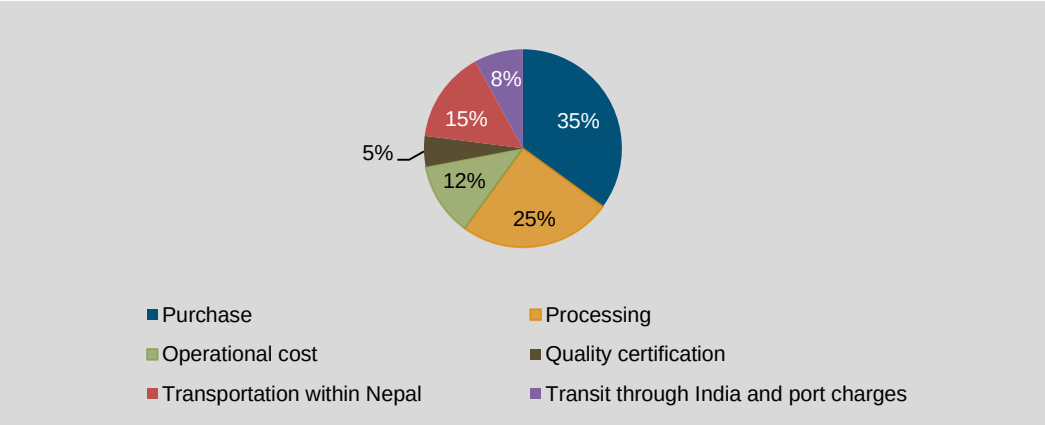
There are two major types of business models for spices companies in Nepal – (a) bulk traders that source, package and export to international markets in India and elsewhere, and (b) spice processing companies focused on the domestic market

Top bulk traders by turnover and volumes include Organic Mountain Flavour Pvt. Ltd. and Phoenix International Trading. Top spice processing firms by turnover and volume include Dugar Spices and Foods Pvt Ltd., and Tulsi Spices and Food Products Pvt. Ltd.

Companies interviewed during the course of this study reported that bulk traders can operate at profit margins of 60 to 70%; contingent upon good buyer agreements with importers in other countries. One of the strategies bulk traders are employing is to enter into JVs with foreign companies for assuring purchase of goods. A good example is the JV between Organic Mountain Pvt. Ltd. in Netherlands and

Organic Valley Pvt. Ltd. and Home Investors Pvt. Ltd. from Nepal, which lead to incorporation of a jointly owned entity Organic Mountain Flavour Pvt. Ltd. The new entity has a fixed capital investment of US$ 150,000 and total capital of US$ 210,000; and 49% stakes are held by Organic Mountain Netherlands and Home Investors[80]. Typical cost structure of bulk traders is shown in Figure 37. Since the upfront capital investment in this business is lower than processing, it is showing faster growth than spice processing industries and industry sentiment mapped during primary interviews shows growth potential of 10 to 15% over the next 3-4 years.

Figure 37: Cost structure for bulk spice exporters in Nepal



Source: Intellecap analysis, 2014. Note: "Processing" in this chart includes costs of cleaning and packaging only

EBIDTA margins of spice sub-sector companies from comparable geographies like India and Pakistan are typically in the range of 12% to 15% as shown in Table 12.

Table 12: EBIDTA and profit margins for spice sub-sector companies from comparable geographies

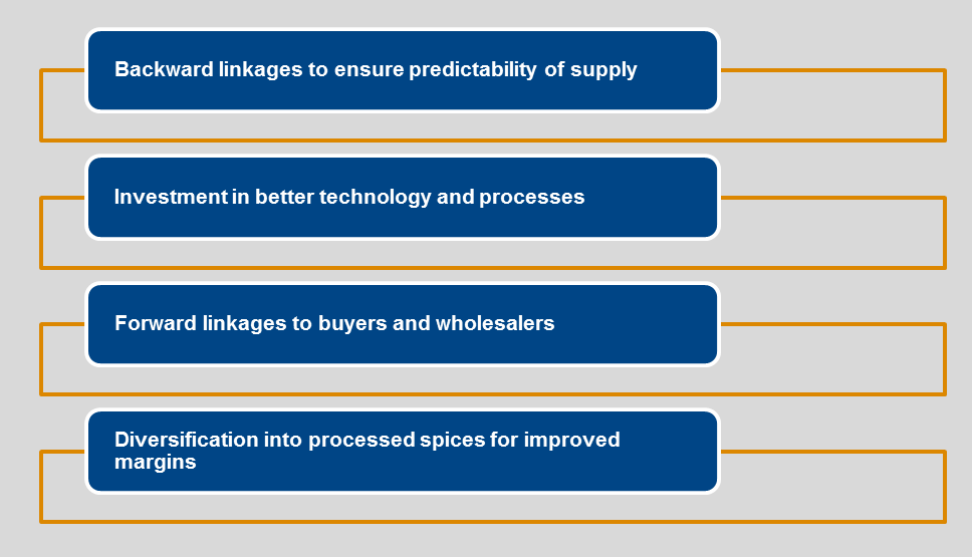
Company	Revenue (US$ million)	EBITDA (US$ million)	EBIDTA Margin	Net Profit Margin
India				
Madhur Industries Ltd	1.54	-0.01	-0.6%	0.26%
Chordia Food Products Limited	5.82	0.73	12.5%	8.05%
NHC Foods Limited	25.1	0.86	3.4%	0.97%
ADF Foods Limited	33	4.52	13.7%	8.88%
Pakistan				
Quice Food Industries Limited	1.93	0.51	26.4%	-3.99%
National Foods Limited	85.8	11.2	13.1%	7.95%

Source: Capital IQ, Bloomberg and MoneyControl databases, accessed in March 2014

[80] Data from Ministry of Industry, Industrial Statistics, 2013

Key investment opportunities in spice trading and processing industries for private equity investors are shown in Figure 38.

Figure 38: Private equity investment opportunities in spices sub-sector



Source: Intellecap analysis, 2014

Backward linkages to producers of spices like ginger and cardamom are fragmented and unorganised. As a result, spice traders/processors have to buy raw produce in small quantities from a variety of sources including direct purchase from smallholders and aggregators like cooperatives and local traders. This creates inefficiencies in procurement and low reliability of supply; in turn constraining ability to commit to buyers and restraining growth of the firm. Hence, spice sector industries need investments in building procurement partnerships directly with larger farmers and cooperatives, as well as in securing production through owned and contracted farms.

A related investment opportunity is in technology and processes to grade and establish source of spices using **technology and standardised processes**. Currently, due to lack of grading of produce, lower value and higher value produce are mixed up, and spice firms are unable to charge a premium on higher quality produce. A 2008 programme launched by Mercy Corps to help cardamom farmers grade and differentiate their produce result in additional income of up to US$ 0.25 per kilogram that translates to a 60% increase in profitability per kilogram[81] for finer quality cardamom.

Investments in **better technology for drying, processing and packaging produce** also present a lucrative opportunity. For instance, spices processed by pounding (instead of grinding) at very low temperatures retain essential oils and have better taste; and hence fetch higher prices in the market. Packaging innovations like zip locks, lidded packages etc. that don't require end customer to store the spice in a separate container also attract buyers.

FDI structured as JVs with international wholesalers and retailers can play twin roles of bringing in capital as well as **creating access to an assured market for produce**. This can help firms thrive and drastically increase profitability.

Finally, investments in **building range of ready-to-cook sauces** is a growth opportunity for processed spice firms – especially amongst younger population in urban centres who are more likely to buy processed spices and sauces than prepare these at home. This segment has seen rapid growth in neighbouring country of India where it is expected to continue growing at annual

[81] Mercy Corps, Strengthening Cardamom and Ginger Value Chains in Eastern Nepal

compounded rate of 12-15% through the next 4-5 years[82]. This growth is driven by changing lifestyle of the younger population who prefer spice/sauces that decrease duration of food preparation, and are also more brand and quality conscious.

Some key success factors that investors can use to evaluate attractiveness of spice trading and processing companies include:

- Procurement partnerships with cooperatives and local traders to ensure consistency in timelines and quality of supply
- Use of modern technologies and know-how in grading, cleaning, processing and packaging products
- JVs or partnerships with foreign wholesalers and retailers for assured market access
- Bulk traders that bulk traders is to leverage existing buyer relationships to diversify from raw produce into processed spices can make higher margins, and are more likely to be "investment-ready"

Private equity investors in the spice sub-sector should be cognisant of some key risks and challenges to growth of businesses:

- Lack of grading and traceability of produce at the farmer aggregator level, which in turn leads to mixed quality of procured goods
- Inadequacy of storage and transportation systems
- Use of traditional drying techniques like ovens that decrease quality of produce
- Spices like Ginger and Cardamom are excessively dependent on exports to India and run the risk of geography concentration. For instance, intermittent listing of ginger as a restricted import item by India leads to low predictability in revenues
- Processed spice industries may need to invest in building distribution channels through wholesalers and retailers owning to fragmented nature of domestic market

6.1.2 Investment Opportunities in Tea Sub-Sector

Global tea industry is growing at a CAGR of 10%, with increasing demand for "premium teas" that are emerging as a high value luxury commodity

Tea is produced by drying and processing buds and leaves of the plant *Camellia sinensis*. It is one of the most popular beverages across the world. The global trade in tea was worth over US$ 7.6 billion in 2011, and has been growing at a CAGR of 10% over the past decade[83]. Fuelled by increasing awareness in healthy lifestyles, the demand for "premium tea" like green tea, white tea, blended tea and organic tea has been growing[84].

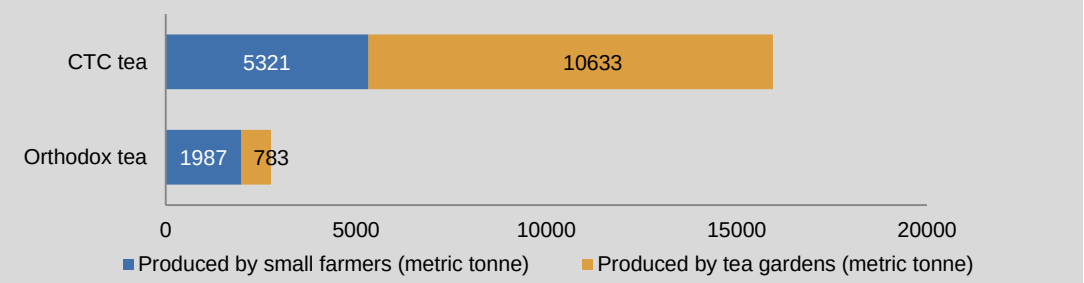
The tea industry in Nepal caters to this international demand as well as to domestic demand for tea

The tea industry in Nepal produces two major types of tea – Orthodox Tea and CTC Tea[85]. Of these, Orthodox Tea has greater demand in international markets and is thought to be finer than the

[82] Destimoney India, 2014
[83] FAOSTAT database, accessed in March 2014
[84] Tea Board of India, 2012
[85] Orthodox and CTC teas are named for their processing techniques – Orthodox tea is hand rolled while CTC tea is processed using "Crush, Tear and Curl" method

Darjeeling Tea by some connoisseurs[86], while CTC tea is primarily used in domestic markets. Figure 39 shows distribution of production of these two varieties.

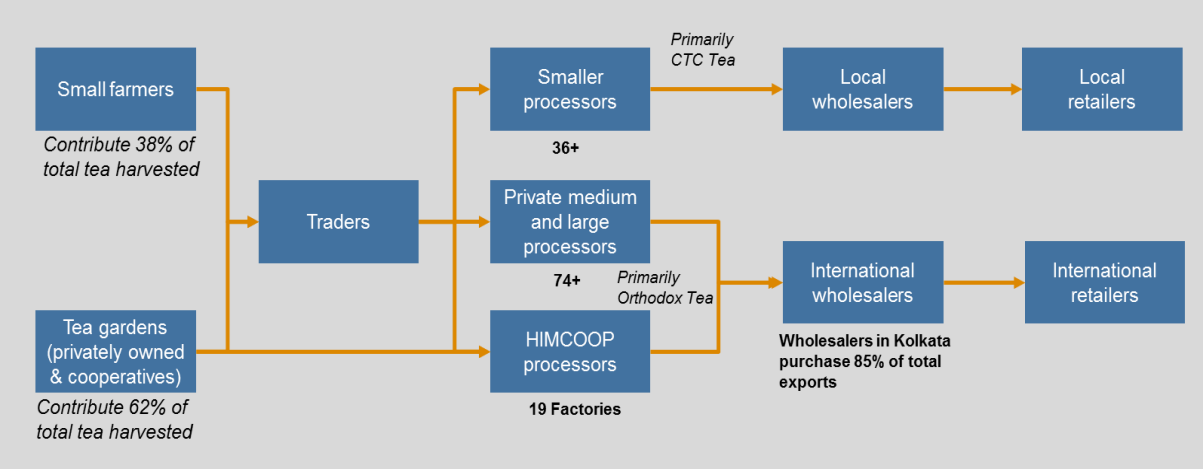
Figure 39: Production of orthodox and CTC tea in Nepal



Source: NTCDB website, accessed in March 2014

There are over 100 tea and coffee processing industries in Nepal[87], of which 74 are medium and large sized enterprises with over ~US$ 300,000 in fixed capital investments[88]. Both commodities are grown by cooperatives, farmers and privately owned plantations, and then processed in private plants. 20 orthodox tea companies, including the government-promoted Nepal Tea Development Corporation (NTDC) Limited, are part of Himalayan Tea Producers Cooperative Limited (HIMCOOP), which is a marketing consortium launched in 2003 to link Nepalese tea producers to international buyers[89]. Nepal is ranked 20th among top tea producing markets in the world[90]; and the sector is driven by growing global demand for tea[91] as well as increasing "brand presence" of Nepalese tea as a speciality tea categorised along with Darjeeling Tea among others[92]. Figure 40 shows the value chain for the tea industry in Nepal.

Figure 40: Value chain for tea industry in Nepal



Source: InfoDev, Promoting Agribusiness in Nepal, 2013; National Tea and Coffee Development Board Nepal, 2014; and Intellecap Analysis; 2014

[86] Claim darker tea liquor, more delicate and sweeter flavour
[87] Department of Food Technology and Quality Control, 2013
[88] Department of Industries, Nepal, 2013
[89] HIMCOOP website, accessed in March 2014
[90] USAID Nepal, Value chain/market analysis of the orthodox tea sub-sector, 2011
[91] Reuters news report, "World drinks more tea, FAO predicts strong price", 2012
[92] Tea Guardian Selection Guide, Nepali Orthodox Tea, accessed in March 2014

Tea companies in Nepal have two major business models – (a) Own estates to farm their own tea as well as processing plants, and (b) Only own processing plants and purchase tea from local producers and/or import tea.

The top tea companies by turnover and capacity include NTDC, Shree Hari and Himal Tea Industries. Most tea sector companies produce a mix of orthodox and CTC tea, and often produce organically farmed orthodox tea for international markets. Farm gate price for organic orthodox tea is 56% higher than non-organic, and end-consumer price is 67% higher[93]. The approximate annual turnover of tea companies is US$ 2 million per annum and they operate at profit margins of more than 20%. The typical production capacity is 1.5 million metric tons of which 75% is utilised[94].

EBIDTA margins for tea companies in comparable South Asian countries like India and Sri Lanka range from 10 to 15% as shown in Table 13.

Table 13: EBIDTA and Profit margins for tea companies from comparable countries

Company	**Revenue** (US$ million)	**EBITDA** (US$ million)	**EBIDTA Margin**	**Net Profit Margin**
India				
Dhunseri Petrochem & Tea Limited	449.8	34.8	7.7%	4.11%
Jay Shree Tea & Industries Ltd.	133.8	21	15.7%	6.11%
Joonktollee Tea & Industries Limited	15.8	2.04	12.9%	7.47%
Kanco Tea & Industries Limited	6.8	1.29	19.0%	8.29%
Tyroon Tea Co. Ltd.	4.14	0.47	11.4%	7.45%
Norben Tea & Exports Ltd.	0.85	0.25	8.79%	8.79%
Sri Lanka				
Ceylon Tea Services PLC	55.9	11	19.7%	14.55%
Bogawantalawa Tea Estates Plc	27.7	2.43	8.8%	6.06%
Tea Smallholder Factories PLC	19.1	1.19	6.2%	2.12%
Talawakelle Tea Estates PLC.	26	3.48	13.4%	7.38%

Source: Capital IQ, Bloomberg and MoneyControl databases, accessed in March 2014

[93] InfoDev, Promoting Agribusiness in Nepal, 2013
[94] Primary interviews conducted during the course of the study. See Annexure for list of respondents.

Key investment opportunities in tea industries have been shown in Figure 41.

Figure 41: Private equity investment opportunities in tea sub-sector in Nepal

Source: Intellecap analysis, 2014

Private equity investors can help tea companies grow faster and make higher margins by investing in **diversifying product range** to include premium varieties of tea. Some of these premium varieties include organic, flavoured or blended, and white and green tea. Premium teas like these have a high demand globally and also contribute higher margins per kg sold than regular tea. Diversification will entail building a strong foundation by getting necessary certifications, processing infrastructure, branding and market intelligence on demand of various premium teas in place. Since these are not mass-market commodities, specific relationships with international wholesalers or bulk procurers to access markets may be beneficial. JVs with global firms could play a strong role in building this access. This has been observed in the case of Indian tea companies as shown in Case Box 2.

Case 2: Role of JVs in building market access for premium tea
Tata Global Beverages has entered into a 50:50 JV with Starbucks Coffee International Inc., US to set up Starbucks Coffee Stores in India as one of the channels to reach mid to high income consumers who demand premium tea varieties. Some of these premium teas include English Breakfast Tata Tazo Tea, Early Grey Tata Tazo Tea, and China Green Tips Tata Tazo Tea. A regular sized serving of this tea can cost up to 50 to 60% higher at Starbucks-Tata retail outlets when compared to other café-format retail chains.

Source: Tata corporate websites, accessed in April 2014

A related investment opportunity is in support tea companies with building **a stronger brand identity** in international markets that is distinct from Darjeeling tea. Orthodox tea is perceived as a luxury commodity in many international markets and the market price of such commodities is often based on "perception of value" which is directly linked to brand recognition.

Investments in **technology and improved processes** for farming, tea picking, cleaning, processing, packaging and storage are also important for firms to grow. These include use of higher quality inputs; training for farming and harvesting staff on improved techniques; and better technology for drying, processing and packaging tea leaves.

Some key success factors that investors can use to evaluate attractiveness of tea sub-sector companies include:

- Strong procurement partnerships with smallholders to augment overall production of processed tea
- More concentration on orthodox tea in overall tea portfolio, and diversification to value-added tea like blended and organic tea
- Uses more advanced technology and processes in processing of tea leaves
- Operational efficiencies in management of field staff, bulk procurement, and transport of tea leaves to processing plants
- Partnerships with wholesalers and retailers that bring predictability in market access

Investors in tea companies should be cognisant of some key risks and challenges as follows:

- Production of tea has been stagnant over the past 3 years as shown in Table 4, while export of Nepalese tea has been growing at a CAGR of 7%[95]. This shows that the sector is not able to meet demand, and it creates the risk that buyers like wholesalers and traders will move away from sourcing Nepalese tea due to this challenge
- Due to low usage of technology and improved farming techniques, the end product of team companies is of inconsistent quality and this is a key bottleneck for international buyers to order in bulk. The absence of international certification creates further challenges for bulk procurers like premium wholesale/retail chains
- Similar to the fruits and MAPs sub-sectors, tea sub-sector also relies on imports for packaging material and the high import duties on these increase costs for tea companies

6.1.3 Investment Opportunities in MAPs Sub-Sector

Global MAPs industry is growing and there is a high demand for Nepalese MAPs

Global trade in MAPs and products derived from MAPs was worth over US$ 33 billion in 2010, and is projected to grow at a CAGR of 23% over the next 3-4 years; primarily as driven by demand from existing hubs like USA and parts of EU, as well as emerging demand-centres like China, Brazil and India[96]. This growth has been spurred by increasing awareness of the health-related benefits of using natural cosmetics, food supplements and medicines. Nepalese MAPs have a high demand in international markets, and Nepal is the 25th largest exporter of MAPs in the world[97].

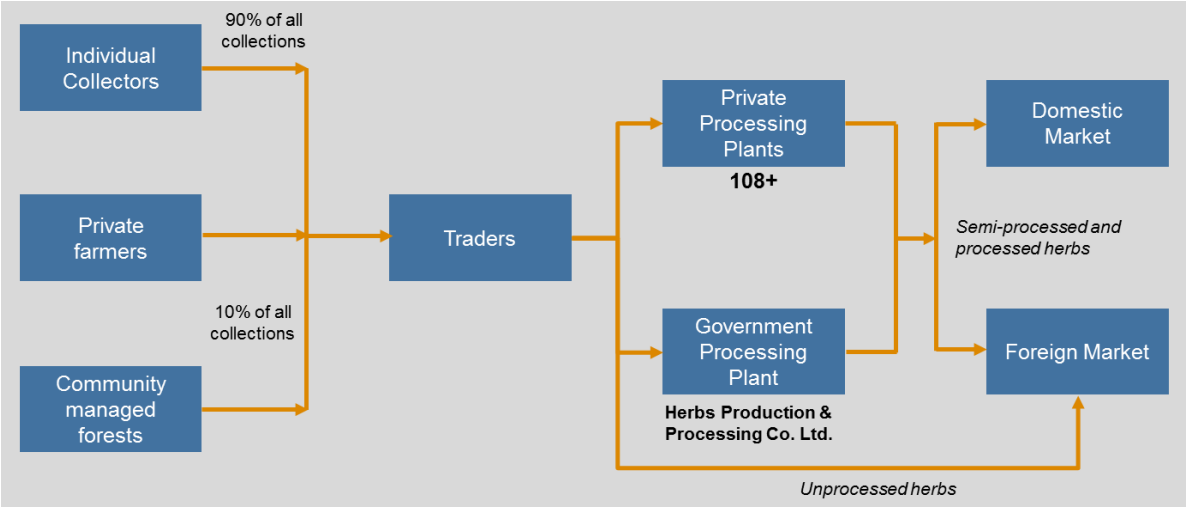
Agribusiness landscape in MAPs is skewed towards "bulk trading" business models and has few MAPs processors

Nepal has 108 registered processors in the MAPs sector[98], but of these only 15 processors are medium to large sized enterprises with more than ~ US$ 300,000 in fixed capital investments. The top 3 firms by capacity and turnover include Dabur Nepal, Fleur Himalayan and Singhadurbar Vaidyakhana. Dabur Nepal and Singhadurbar are private limited companies, while Fleur Himalayan is listed as shown in **Table 19**.

[95] Trade Promotion Centre, Import-Export Database, accessed in March 2014
[96] Medicinal Plant and Extracts, Market News Service, 2011; Global Industry Analysts, 2012 and Nutraceuticals World, 2012
[97] UN Comtrade database
[98] InfoDev, Promoting Agribusiness Innovation in Nepal, 2013

Dabur Nepal is almost 20 times the size of Fleur and Singhadurbar in turnover, and is a subsidiary of the Indian herbal processing giant Dabur. All 3 procure herbs locally, but process and retail for domestic as well as foreign markets. Figure 42 shows the typical value chain for MAPs in Nepal. Individual collectors in the informal sector contribute to 90% of total MAPs supply, and industries operating in this sub-sector fall under 3 main categories – (a) packagers and exporters of raw MAPs, (b) firms that semi-process MAPs into essential oils and extracts, and (c) firms that process MAPs into cosmetics, health supplements and lifestyle products.

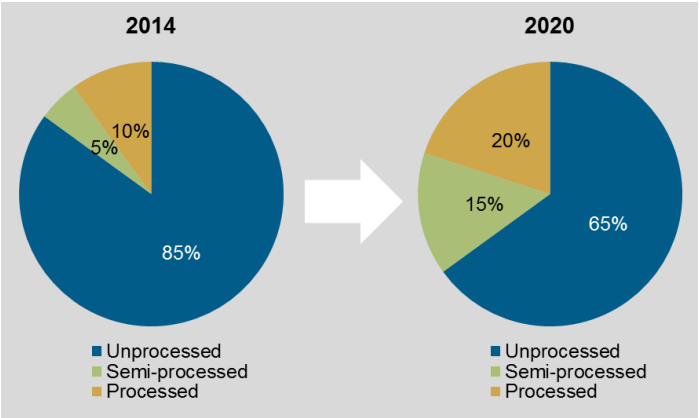
Figure 42: MAPs value chain in Nepal



Source: Nepal Herbs and Herbal Products Association; InfoDev, Promoting Agribusiness in Nepal, 2013; and Intellecap Analysis; 2014

Over 90% of MAPs collected in Nepal are shipped aboard without value addition, and then imported back as essential oils and finished products. Hence there is high potential for the domestic industry to grow by developing processing infrastructure. During the course of this study, key stakeholders in the industry were asked for their opinion on how they see the split between unprocessed, semi-processed and processed outputs of the industry changing by 2020; and the results showed optimism about this trend as shown in Figure 43. Driven by this value-addition to MAPs products, industry stakeholders expect growth of 15 to 20% in MAPs processing companies in the next 3-4 years.

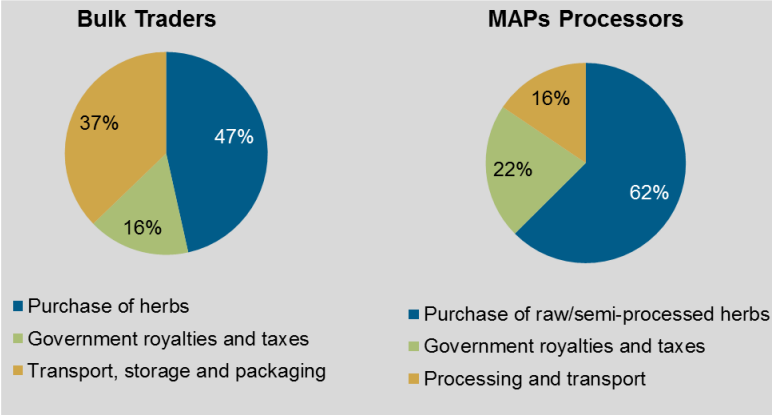
Figure 43: Industry sentiment on change in output formats of MAPs in Nepal



Source: Primary interviews conducted by Intellecap during the course of this study. See annexure for list of interviewees.

The approximate annual turnover of a typical MAPs medium-to-large sized business is US$ 150,000 to 250,000; and typical profit margin is 10 to 15%. Firms operate at 50 to 70% of total capacity due to seasonality of procurement as well as low predictability of buyer trends. Raw material procurement constitutes bulk of the cost of production for traders and processors as shown in Figure 44. Government royalties and taxes are also a significant cost component for both business models.

Figure 44: Cost structure of MAPs industry



Source: International Resource Group, 2006

EBIDTA margins for MAPs sector companies in India vary from 15% to 30% as shown in Table 14.

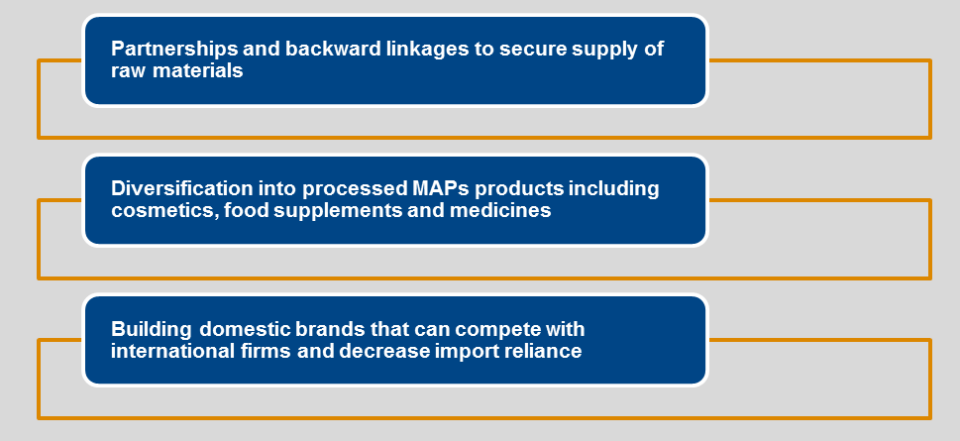
Table 14: EBIDTA and Profit margins for MAPs companies in India

Company	Revenue (US$ million)	EBITDA (US$ million)	EBIDTA Margin	Net Profit Margin
India				
Source Natural Foods and Herbal Supplements Limited	0.69	0.1	14.5%	9.29%
Dabur India Ltd.	729	121	16.5%	13.42%
Emami Ltd.	275.65	74.47	27%	22%

Source: Capital IQ, Bloomberg and MoneyControl databases, accessed in March 2014

Key investment opportunities for private equity investors in MAPs sub-sector are shown in Figure 45.

Figure 45: Private equity investment opportunities in MAPs sub-sector



Source: Intellecap analysis, 2014

Private investors can support MAPs sector companies by **channelling risk capital into building cold storage and logistics infrastructure** to secure quality supply of raw materials. These investments are important because most MAPs are collected in hill and mountain districts, and transported over significant distances to packaging and processing facilities. They lose essential oil content and spoil during transport; and investments in warehousing and logistics will help to decrease losses. Further, such installations can also act as common purchase points for MAPs collectors to sell goods, and can help MAPs companies in building relationships with these processes and securing supplies.

Investments in processing and packaging infrastructure, as well as R&D for launching new products will also help MAPs processors to diversify into semi-processed and processed products. While there is significant domestic demand for such processed MAPs commodities, most of the demand is currently met by imports; and investing in increasing domestic capacities to address this demand will bring down import-reliance. From an export perspective as well, diversification into processed MAPs will help companies grow and scale faster. Currently, most MAPs processors currently package and export raw produce; and while the margins for this trade can be as high as 70% the quantum of revenues is much lower in the absence of value-addition.

MAPs processors can also benefit from **investments in building brands that can compete with international giants**. Given Nepal's existing brand as a tourist destination in the Himalayas, significant potential exists for domestic processors to leverage this brand for marketing their products. Investments in technology and processes to identify and certify source of MAPs products will further aid in leveraging this opportunity.

Some key success factors that investors can use to evaluate attractiveness of MAPs sub-sector companies include:

- Strong backward linkages with MAPs collectors in order to have assured supply of raw materials
- Cold storage infrastructure to ensure quality of perishable MAPs raw materials is maintained
- Processes to ensure "traceability" of MAPs products to specific locations
- Quality assurance systems and processes that are recognised internationally

- Diversification into semi-processed and processed MAPs products
- JVs and partnerships with international wholesalers and retailers to have assured access to markets

MAPs companies face some key risks and challenges to growth in the next 4-5 years:

- MAPs firms can benefit from affordable debt and high risk-taking equity to diversify from unprocessed to processed products. However, firms interviewed during the course of this study reported critical dearth of financing that limits growth of companies and forces them to rely on owner's capital for expansion
- While market channels for export of raw MAPs material are fairly well established, there is still lack of market access for semi-processed and processed firms in both domestic and international markets. Systemic facilitation of this access by regulations that promote domestic products over imported foreign products may serve to solve this challenge
- Over US$ 14 million worth of drying and packaging machinery were imported in 2013[99] in Nepal, the bulk of which are used by the MAPs industry. This shows a dependence on imported technology for processing which is detrimental to industry growth. Firms will benefit from creating technology linkages with domestic and foreign R&D institutions
- It has been reported that populations and yields of MAPs grown in the wild are being depleted at a faster pace than replanting and natural growth. The industry faces a risk of shortage of raw material and/or extinction of plant species unless more sustainable forms of harvest are employed. This in-turn is challenging because 90% of all collection is done by individuals in the informal sector

6.1.4 Investment Opportunities in Fruits Processing Sub-Sector

Global trade in processed fruits is growing at 12% CAGR, driven by increased awareness of the health benefits of natural beverages over carbonated and artificial beverages

Global trade in processed fruits was worth over US$ 33.7 billion in 2011, and has been growing at a CAGR of 12% over the past decade. This increase has largely been driven by consumer awareness around the health benefits of natural beverages, combined with technological advances in fruit processing and packaging that increase shelf life of the products.

Fruits processing industry in Nepal is growing and caters to both domestic and international

There are over 150 registered fruit and vegetable processing industries in Nepal, of which 34 are medium and large companies with more than ~US$ 300,000 in fixed capital investments[100]. The top fruits processing companies by capacity and turnover include:

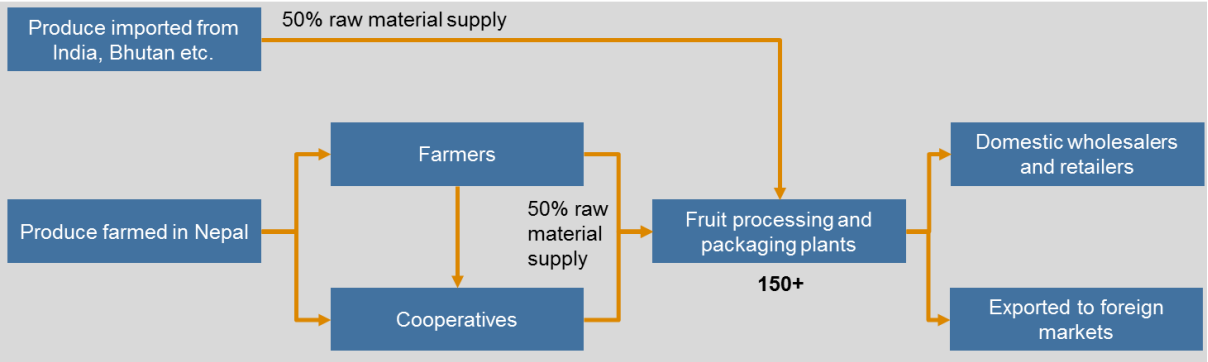
- Dabur Nepal Pvt. Ltd. (subsidiary of Dabur Group India)
- Rijal Tashi Industries Pvt. Ltd. (subsidiary of with Druk Bhutan)
- Gold Beverage Nepal (a unit of CG Foods Nepal Pvt. Ltd.)
- Dugar Food and Beverage Pvt Ltd

Both Dabur Nepal and Rijal Tashi are domestic subsidiaries of foreign companies. The typical value chain of fruits processing industry in Nepal can be seen in Figure 46. Key fruits that move through this

[99] Trade and Export Promotion centre database, accessed in March 2014
[100] Department of Industries, Industrial Statistics, 2013

value chain include orange, apple, litchi and pineapple; and key outputs are juice, pulp and jam. The industry caters to domestic market and also exports over US$ 0.74 million worth of goods annually[101].

Figure 46: Fruits processing value chain in Nepal



Source: InfoDev, Promoting Agribusiness in Nepal, 2013; and Intellecap Analysis; 2014

The typical production capacity of fruit processing firms ranges from 600 to 700 metric tons daily, of which only 50 to 60% capacity utilisation is seen. Profit margins for firms range from 15 to 20%.

Industry has inefficiencies in value chain, relies on imports of raw materials

Procurement of raw material in this sector is different from other agri-subsectors. Larger private companies import over 50% of raw material from other countries like India, Brazil and Bhutan. While specific reasons for this vary, a common driver across all is the higher cost of procuring fruits according to standard specifications that the juice industry must use for product uniformity. This higher cost is in turn driven by lack of sufficient awareness amongst farmers and cooperatives, lack of central fruit grading mechanism, insufficient cold storage to ensure fruits reach processing plants in good condition, and lack of domestic technology for extracting fruit pulp. Aside from raw materials, input costs are also higher for fruits processing industry in Nepal when compared to India or Bhutan due to lower labour productivity, insufficient power, higher sugar prices, and higher cost of packaging material[102].

Fruit companies typically have EBIDTA margins of 10 to 25% in comparable geographies as shown in Table 15.

Table 15: EBIDTA and profit margins in fruit companies in comparable countries

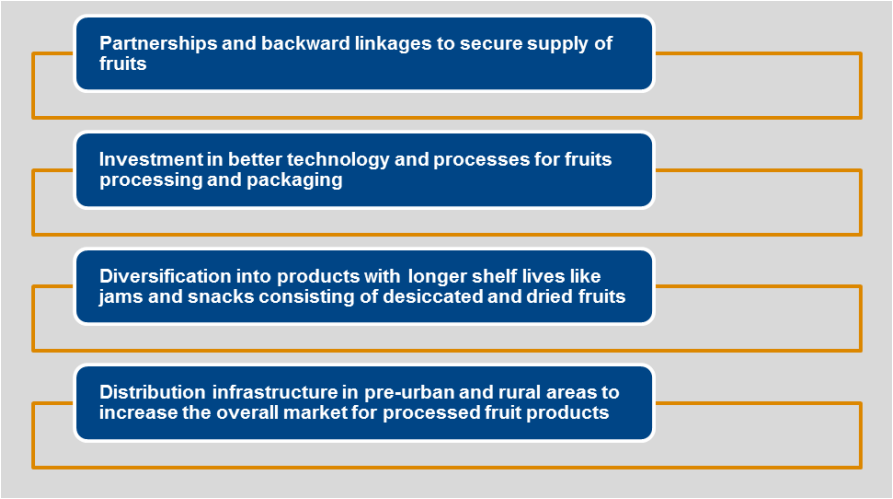
Company	**Revenue** (US$ million)	**EBITDA** (US$ million)	**EBIDTA Margin**	**Net Profit Margin**
India				
ANS Industries Limited	0.77	0.2	26.0%	6.82%
Freshtrop Fruits Limited	16.8	1.53	9.1%	4.97%
Pakistan				
Mitchell's Fruit Farms Ltd.	19.9	2.16	10.9%	6.35%

Source: Capital IQ, Bloomberg and MoneyControl databases, accessed in March 2014

[101] Trade and export promotion centre database, accessed in March 2014
[102] Prahlad K. Thapa et al, Enhancing Competitiveness and Exports of Primary and Processed Fruits, 2004

Key investment opportunities in the fruits processing industry are shown in Figure 47.

Figure 47: Private equity investment opportunities in fruits processing industries



Source: Intellecap analysis, 2014

Investments in backward linkages with cooperatives/farmer aggregators, storage and freight service providers to assure supply of fruits can help fruits processing industries overcome one of the biggest roadblocks to scale. This is critical because fruits processing companies incur substantial costs in procuring fruits that match specific quality standards from domestic market in Nepal. Companies interviewed during the course of this study also reported high spend on fruits storage and movement from farm to factory; often as high as the cost of purchase of fruits. The seasonality of fruit production and absence of cold storage infrastructure further compound this problem.

Investments in better technology and processes; and in diversifying the product range to cater to different customer preferences and product formats with varying shelf lives is a lucrative opportunity as well. This will help companies capture market share as well as create more efficiency in supply chain management.

Investments in building distribution infrastructure in smaller towns in Terai and Hills districts will be critical to increase customer base over a period of time. Most domestically-oriented fruit processing and retail firms in Nepal focus largely on urban and peri-urban centres in Kathmandu Valley, Pokhara and Birgunj; and expanding distribution outreach is critical to increase the market opportunity.

Some key success factors that investors can use to evaluate attractiveness of fruits processing companies include:

- Firms that find a balance between importing fruits from neighbouring countries and securing local supply
- Firms that have stringent and transparent quality assurance systems in place
- Firms with a diverse portfolio of processed fruit offerings including juices, jams, snacks derived from different types of fruits; as well as sugar-free products
- Firms with robust distribution networks and relationships with retailers in peri-urban and rural areas

Fruit companies face some key risks and challenges to growth in the next 4-5 years:

- High octroi charges on fruits transport impact profitability

- Labour productivity is lower in Nepal than neighbouring countries like India and China due to frequent confrontations between labour unions and industries
- Fruit processing units can benefit from making alternate arrangements for power supply since power cuts of up to 16 hours a day in the dry season[103] are common. This impacts profitability of the venture
- Finally, fruit industries face shortage of technology and quality assurance infrastructure in Nepal. This often raises questions about the quality of juice being supplied to end consumer, and fruit industries can benefit from investing in these as well as be more transparent in their practises to gain customer trust

6.1.5 Investment Opportunities in Seeds Sub-Sector

Seed industry has a crucial role to play in increasing productivity of agriculture in Nepal

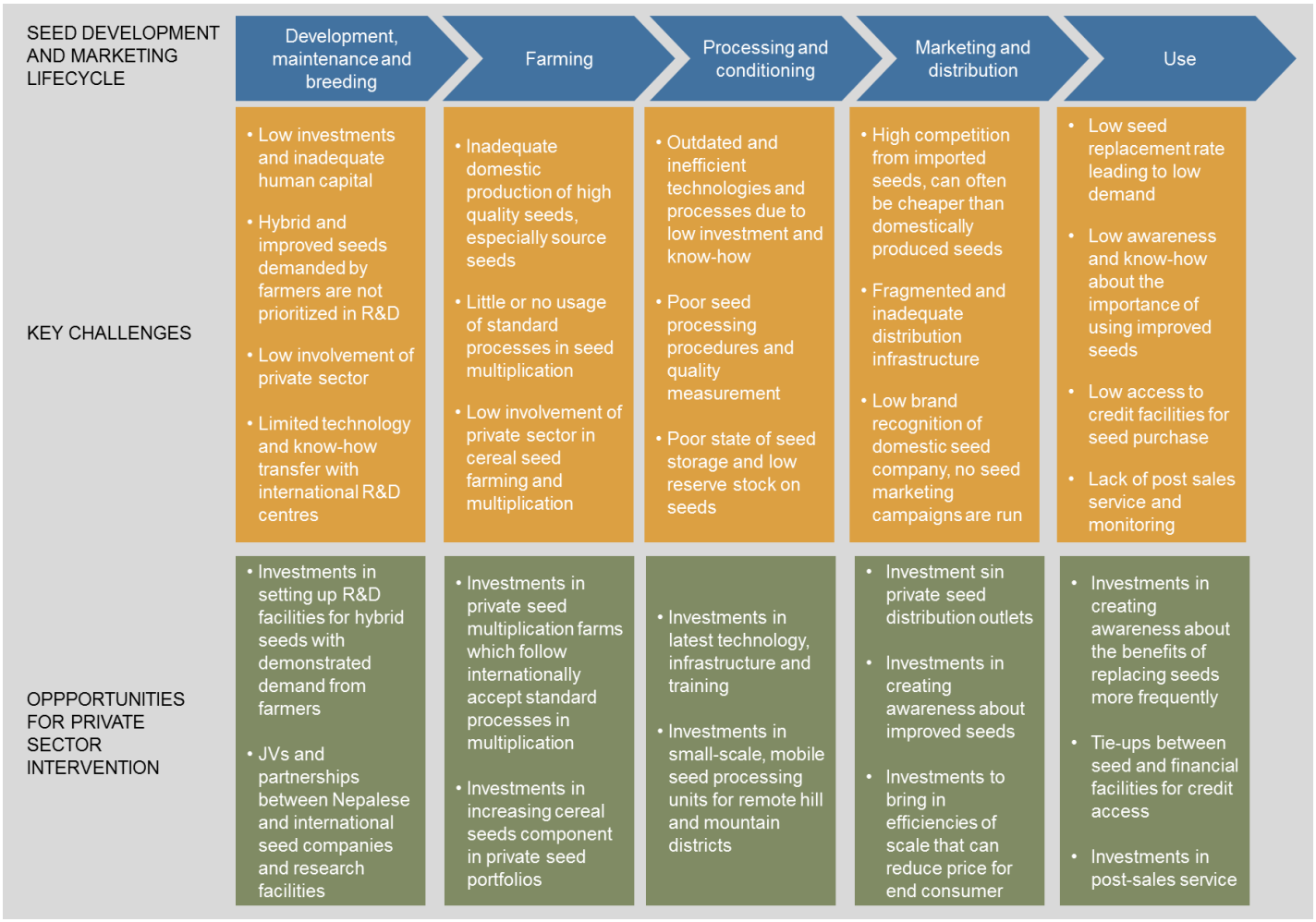
As discussed in Table 2, crop yields in Nepal compare unfavourably with countries in South and South East Asia, and global averages. In such a scenario, improved seeds are critical to increasing yields and productivity of agriculture as they are the most effective means to transfer technologies and advancements in agricultural science. MoAD estimates that the use of improved seeds can potentially increase crop productivity in Nepal by 20 to 30%[104]. The development of new and improved varieties of seeds along with measures to increase awareness about their usage, as well as improving seed distribution network for improved access to farmers could be an effective strategy for improving agricultural productivity in Nepal.

While the industry faces significant challenges, there is an opportunity to increase and diversify domestic production of improved seeds to address these challenges

Even though seed development initiatives in Nepal have been in operation for several decades, the critical issue of adequate farmer access to improved seeds remains unresolved. As a result the sector remains dependent on import of seeds to meet domestic demand. Over US$ 200 million[105] worth of seeds have been imported in the past 4 years[106]; the domestic industry is heavily import-reliant especially for hybrid seeds. The domestic production of seeds is plagued with issues across the development and marketing lifecycle; however these challenges also present opportunities for private sector intervention as shown in Figure 48.

[103] Nepal Electricity Authority Annual report 2012-13
[104] Nepal Seed Vision, 2013 - 2025
[105] Trade and Export Promotion Centre, Nepal, database accessed in March 2014
[106] The trends in annual imports of seeds have been erratic, partially due to information asymmetries between farmers and seed traders and fluctuations in market demand for different vegetables

Figure 48: Challenges and opportunities for private sector engagement in seed sub-sector



Source: Intellecap analysis, 2014

Import-driven private seed industry currently caters to nearly 90% of the total demand for seeds

There are 16 registered seed companies in Nepal[107]. Most of these firms are primarily engaged in import, marketing and distribution of seeds, while a few in early stages of initiating production of seed as well. The top private seed companies by turnover and capacity include Nimbus Seeds and CG Seeds.

NSCL is sole public entity in the seed space providing subsidised seeds, catering mainly to small scale farmers

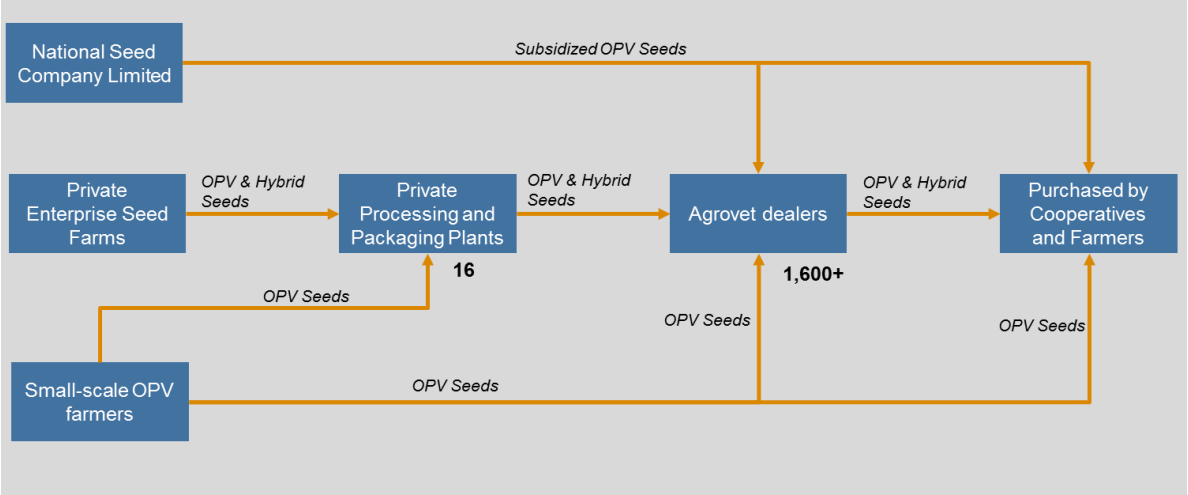
NSCL was established in 2002 and produces crop and vegetable seeds as well as tissue culture plants like banana. It also undertakes processing, handling, packaging and marketing of these seeds. NSCL-produced seeds are marketed through private dealers, government and state-agencies and NSCL-owned outlets. It is also responsible for overseeing seed quality control and undertakes seed testing. Other activities include training in seed science, overseeing certifications, providing briefs of

[107] National Seed Vision 2013-25, Nepal and Intellecap analysis, 2014

field demonstration of newly released crop varieties, and undertaking supply of seedlings/saplings of fruit crops through its sourcing partners.

The value chain for improved seeds in Nepal is shown in Figure 49. OPV seeds from private companies compete with small-scale seed entrepreneurs and subsidised seeds from NSCL. However, the demand for improved seeds cannot be met by informal or government sources and so the seed market is still lucrative for private sector. For instance, in 2010 NSCL was only able to supply about 10% of the total demand for improved wheat seeds[108] and the remainder was largely met by production from private sector firms.

Figure 49: Value chain for improved seeds in Nepal



Source: National Seeds Company Limited, 2013; and Intellecap Analysis, 2014

Despite subsidies there is preference for private sector seeds amongst mid and large scale farmers for want of better quality seeds

Government regulation currently subsidises OPV seeds produced and marketed by NSCL – the subsidies vary depending upon type of seed. In 2013, subsidy for wheat seeds was 35%[109]. Several private sector companies interviewed during the course of this study reported that government subsidised seeds do not threaten their business as these are insufficient to meet total market demand. There are several inefficiencies in the government supply chain ranging from leakage of seeds to black market to distribution of incorrect seeds leading to crop failure[110]. Private companies reported that cooperatives and mid to large scale farmers with more purchasing power tend to prefer their seeds due to these inefficiencies.

Regulation to ban the entry of foreign GMO seeds is under consideration; could be an opportunity for domestic seed industry to flourish

A future impact of the regulatory system might impact seeds industry by preventing entry of genetically modified seeds from large international companies like Monsanto into Nepal. One of the regulatory outcomes might be prevention of FDI in seeds but this remains to be seen. Private

[108] Intellecap analysis 2014, based on data reported by MoAD Yearbook 2012 and National Seed Vision, 2013-2025
[109] MoAD report, November 2013
[110] Asian Human Rights Commission Report, 2010

companies reported that they would welcome this regulation as it would remove threat of competition from large giants like Monsanto and encourage growth of the local seeds industry.

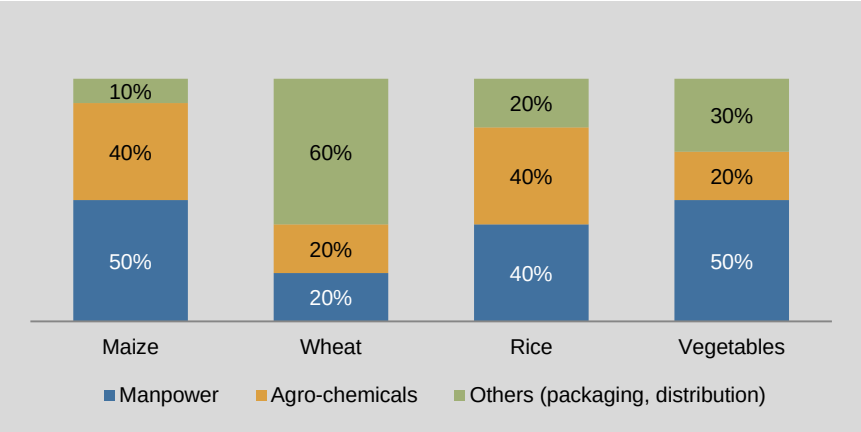
Portfolios of private seed companies are currently biased towards OPV seeds, but are expected to shift towards hybrid seeds in the next 5-6 years

As presented in Figure 8, the major types of seeds produced by private sector broadly fall under hybrid and OPV categories. The product portfolio of private companies is currently biased towards OPV seeds with only 10% to 20% portfolio comprising of hybrid seeds. Several private firms interviewed during the course of this study reported that they were making investments in research and development (R&D) as well as infrastructure for producing more quantity of hybrid seeds and expect that these will comprise nearly half their portfolio in the next 5-6 years. This will allow private companies to grow faster as gross margins on hybrid seeds are nearly 30% which is double of the margins reported for OPV seeds.

The overall seed market in Nepal is growing rapidly due to demonstrated increase in yields from using improved seeds. Private companies reported yield increase of up to 300% and claimed that their consumers have been able to move to growing 2 crops in a season from 1 crop. Over 92% of crop cultivation of maize, wheat and paddy used improved seeds in 2012[111], of which hybrid seed usage was reported as 5 to 10% by private companies.

In terms of cost of production, R&D and technology investments needed for launching new varieties of seeds form the largest component. The highest component for post-R&D cost structure is manpower as shown in Figure 50.

Figure 50: Post R&D cost structure for seeds industry in Nepal



Source: A Study Report on Trade Competitiveness of Vegetable Seeds, 2004; FAO Commodity Case Study: Vegetable Seeds, and NACR, 2012-13

[111] MoAD Yearbook, 2012

Seed companies in India, which is a comparable South Asian economy[112], operate at EBIDTA margins of 12% to 19% as shown in Table 16.

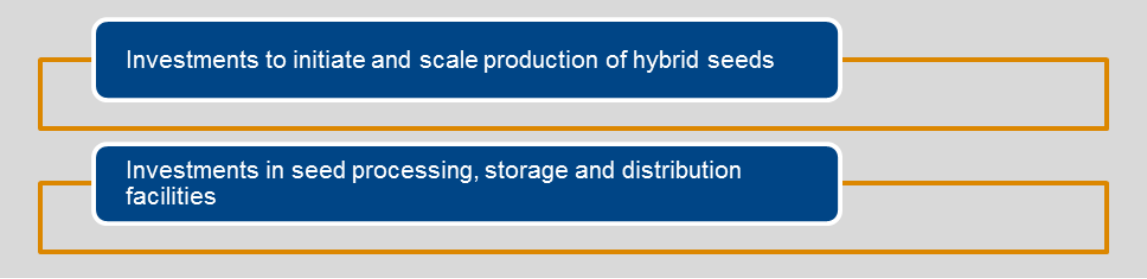
Table 16: EBIDTA and Profit margins of seed companies from India

Company	Revenue (US$ million)	EBITDA (US$ million)	EBIDTA Margin	Net Profit Margin
Kaveri Seed Company Ltd.	131.1	25.7	19.6%	19.04%
JK Agri Genetics Ltd.	34	4.02	11.8%	4.88%
Genera Agri Corp., Ltd.	14.5	1.82	12.6%	12%
Bayer Crop Science Ltd.	452	57.32	12.7%	9.7%

Source: Capital IQ, Bloomberg and MoneyControl databases, accessed in March 2014

Key investment opportunities in seed industries for private equity investors are shown in Figure 51.

Figure 51: Private equity investment opportunities in seed sub-sector in Nepal



Source: Intellecap analysis, 2014

Equity investments to initiate and scale production of hybrid seeds are especially lucrative in the next 5-6 years with several private sector firms poised to start domestic production of hybrid seeds

Seed companies that are seeking to diversify into production of hybrid seeds in the next 5-6 years will need risk capital for R&D, farm demonstrations and buyer awareness creation. With these investments in hybrid seeds, the larger 4-5 seed companies could potentially become well-poised to create formidable entry barriers for domestic as well as international firms because once buyers start farming with a particular seed brand they are less likely to shift to a newer product. This is because farmers will typically experiment with hybrid seeds for 1-2 seasons on small portion of their farms before moving completely to hybrid seeds, and once they have settled into using seeds from a specific brand they need significant incentives to move to a similar value offering from another brand.

Equity investors can also address the dearth of seed processing, storage and distribution facilities by channelling risk capital into building these; and hence removing a significant barrier to scale for seed companies

There is a substantial need for equity investments in seed infrastructure and technology to allow industries to scale up. On the processing-side, investments are needed in seed sorting, grading, treatment and packaging. Storage and warehousing of seeds to increase their shelf-life and bring in more supply chain efficiencies are crucial as well. Lastly, investments in creating distribution infrastructure and increasing brand awareness amongst buyers are important as well. This is

[112] See Section 5.3 for metrics for a more detailed explanation

especially important for seed companies to capture market share amongst farmers in remote hill and mountain districts who have very little access to improved seeds.

In addition to private equity investments; seeds industries can also benefit from easier access to soft loans subsidised by government or aid programmes; and by public investments to improve infrastructure like roads, power and irrigation in seed production pockets and zones.

Some key success factors that investors can use to evaluate attractiveness of seed sub-sector companies include:

- Diversification to hybrid seeds and increasing varieties of cereal seeds in product portfolio
- Strength of the distribution network and relationships with dealers for preferred positioning vis-à-vis other companies' seeds
- Brand awareness amongst end buyers like cooperatives and farmers
- Diversity in product portfolio and geographic outreach
- Bringing in either indigenous technology or partnering with global firms for technology transfer
- Maintaining price advantage over foreign and imported seeds
- Short and predictable receivable cycles from dealers – incentivising dealer growth by tie ups with banks for financing, and marketing/outreach programmes

Some key risks and challenges that investors in seed companies in Nepal must be cognisant of include:

- Adverse weather conditions impact seed supply
- Most seed companies have low capacity for processing and storage which causes inefficiencies in supply chain
- The infrastructure for quality assurance and certification is inadequate. The country has only 1 laboratory accredited to International Seed Testing Authority (ISTA), as compared to 24 in India[113]
- The seed replacement rate is low as shown in Figure 9, especially in cereals. This has a direct impact on demand for improved seeds
- Very few companies have diversified beyond vegetable seeds in a significant manner[114], and there is a threat of the vegetable seeds market becoming overcrowded
- The industry faces significant competition from foreign firms, and the competition is expected to increase since the production of domestic seeds sub-sector is currently inadequate to address demand
- Since most seed companies supply to similar geographies (mostly Kathmandu Valley) and have similar portfolios (mostly vegetable seeds) there is a risk of product and geography concentration
- Although no precedent for this has been seen so far, in the event that the government creates further subsidies on seeds (in addition to current subsidies on OPV seeds); the market could potentially be distorted

[113] ISTA database, accessed in March 2014
[114] See Section 2.2.1 for details

6.1.6 Investment Opportunities in Dairy Sub-Sector

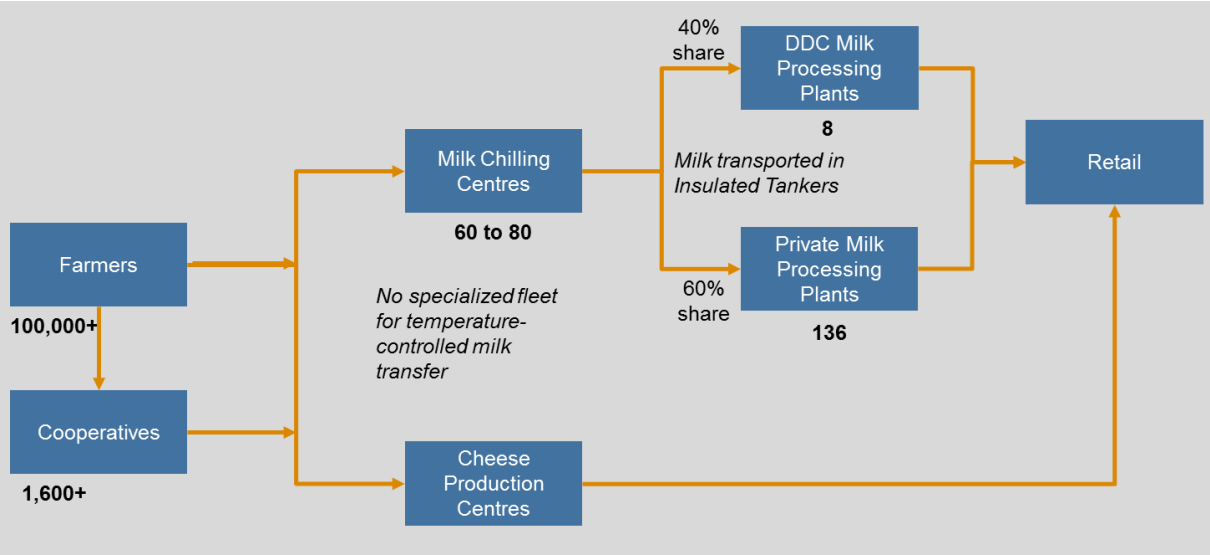
The dairy industry in Nepal caters to strong and growing domestic demand for fluid as well as processed milk products

Milk is part of the staple diet in Nepal, where it is consumed in fluid form, as well as processed milk products like cottage cheese, butter, yoghurt, and buttermilk. The typical Nepalese household spends 5.36% of their total food and beverage expenditure on dairy products; and as explained in Section 3.3; the domestic demand for high-protein foodstuff like processed milk products is increasing with the growth in disposable incomes. The total market opportunity for dairy in Nepal is estimated at US$ 50 to 70 million[115] and this market is growing at 4%[116].

There is a demand-supply mismatch in dairy sub-sector in Nepal due to supply-side inefficiencies; largely caused by inefficiencies arising from a state-owned dairy dominating the market and an inefficient value chain

There are nearly 150 private dairy companies in Nepal, of which 15 are medium and large with more than ~ US$ 300,000 in fixed capital investments[117]. The largest private dairy companies by turnover and capacity include Nepal Dairy, Sujal Dairy and Himal Dairy. Dairy Development Corporation (DDC) is a state-owned enterprise and a significant player in the market that handles 40% of total milk production in the country. Along with handling a disproportionately high portion of total milk production, DDC also plays the role of a regulatory body by setting the prices for milk purchase from farmers as well as retail to customers. As a result, there are significant inefficiencies in the dairy sector in Nepal. Figure 52 shows the value chain for dairy sector in Nepal.

Figure 52: Conceptual View of Dairy Value Chain in Nepal



Source: Food and Agricultural Organisations; 2010 and Intellecap Analysis; 2014

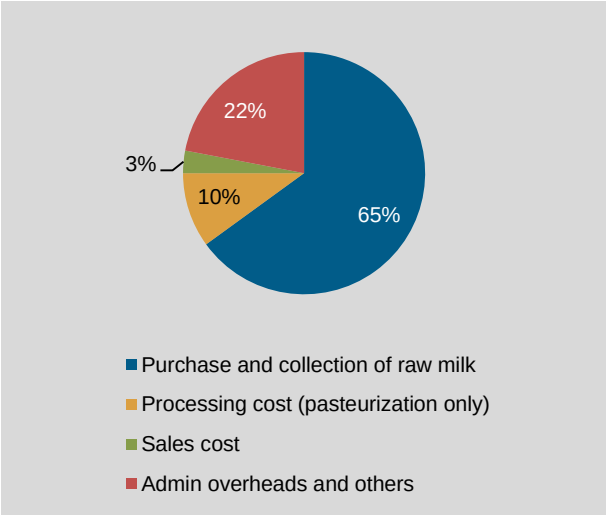
Absence of backward linkages for private dairy processing plants results in inefficient supply with Milk Chilling Centres dictating procurement prices and quantities

[115] Intellecap analysis, 2014. See Sections 3.3 and 12.3 for details
[116] Intellecap analysis, 2014. Market growth rate based on CAGR of milk production in Nepal; calculated based on historical trends in production as reported by MoAD
[117] FAO, Dairy Sector Study of Nepal, 2010 and Department of Industries, Industrial Statistics, 2013

Private dairy companies process and market broadly 3 categories of products – pasteurised raw milk, recombinant milk created from milk powder, and processed milk products like cheese, yoghurt, ice creams etc. Private companies source milk from Milk Chilling Centres (MCCs) operated by DDC, cooperatives and other private players; and milk procurement is their largest cost centre as shown in Figure 53. Private dairies are almost completely dependent on MCCs for milk procurement; and these centres are often in a position to selectively sell milk to highest bidder during lean season[118]. This increases costs and decreases predictability of production for private dairies. Procurement is also erratic due to "flush" and "lean" seasons in milk production. The ratio of flush season production to lean season production is skewed at 65:35[119].

The absence of backward linkages between private dairies and milk collection is a serious systemic challenge that is a result of under-investment by private dairies in securing milk supply through own milk collection points and cold storage. Investing in these backward linkages would give private dairies a strong competitive edge and reduce their dependence on MCCs for procurement that are often in a position of undue power.

Figure 53: Typical cost structure for a private dairy in Nepal



Source: FAO, Dairy Sector Study of Nepal, 2010

Capacity of private dairies underutilised due to systemic inefficiencies in value chain and insufficient diversification into processed milk segment

Typically private dairies have processing capacity of 10,000 to 30,000 litres of milk/day of which only 50% capacity is currently utilised[120]. This is in-part due to low predictability of procurement of milk from MCCs. However, a deeper challenge is that milk distributors receive different commissions from different private dairies, and as a result are incentivised to sell milk which gives them higher commission. Private dairies are required to buy back milk that remains unsold and this constitutes 12 to 25% of total sales to distributors[121]. Due to this system, dairy companies are not able to risk

[118] Private dairies pay an additional premium of up to US$ 0.02 per litre of milk as per FAO, Dairy Sector Study of Nepal, 2010
[119] FAO, Dairy Sector Study of Nepal,
[120] Primary interviews conducted by Intellecap in February 2014; see Annexure for list of respondents
[121] Primary interviews conducted by Intellecap in February 2014; see Annexure for list of respondents

processing milk at full capacity. The situation is further compounded by insufficient diversification into processed milk segment, which constitutes only 5 to 15% of revenues of a typical dairy plant[122].

Dairy companies are negatively impacted by DDC regulations on sales price for milk

The price of milk is controlled by DDC which distorts the mark during peak and lean seasons. DDC periodically issues circulars to establish recommended pricing for milk, and all private dairies follow this pricing. By diversifying product base into processed milk and investing in milk packaging techniques like "Tetra Pak" which increase shelf-life, private dairies can mitigate pressures on their profitability.

Private dairy companies have the opportunity to capitalise on high demand for processed milk products which offer better margins

There is high demand for processed milk products in Nepal which is currently met through imports from over 20 countries including India[123]. Private dairies can diversify into domestic processing to address this demand and decrease import-reliance. The typical margins for processed milk products are also high at 30 to 35% while margins for fluid milk are half to one-third of this across different private dairies[124]. Hence diversification into processed milk products would offer private dairies better margins as described in Table 17.

Table 17: Indicative margins of processed milk products

Processed Milk Product	Gross Margin	Net Margin
Cheese (Includes various types of cheese like yak cheese, paneer etc.)	28 to 34%	7%
Yoghurt	20%	5%
Ice Cream	53%	11%
Butter	38%	13%
Ghee (clarified butter)	26%	7%

Source: FAO, Dairy Sector Study of Nepal, 2010

EBIDTA margins of dairy companies from comparable geographies show that firms with more processed milk goods make higher margins as shown in Table 18.

Table 18: EBIDTA and Profit margins for dairy companies in comparable countries

Company	Revenue (US$ million)	EBITDA (US$ million)	EBIDTA Margin	Net Profit Margin
India				
Kwality Limited	723.8	41.3	5.7%	2.69%
Milkfood Ltd.	61.8	3.04	4.9%	0.20%
Bangladesh				

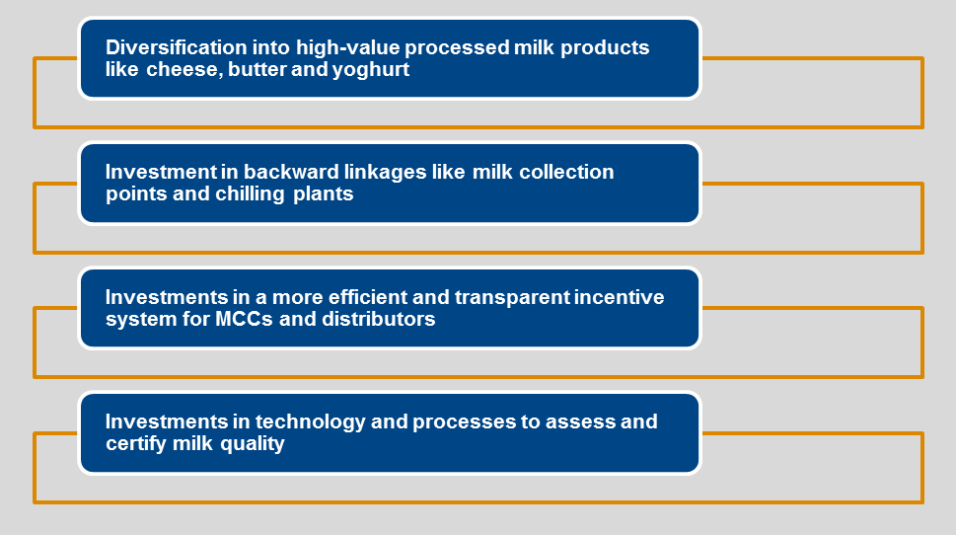
[122] FAO, Dairy Sector Study of Nepal, 2010
[123] Trade and Export Promotion Centre, Nepal, database accessed in March 2014
[124] Primary interviews conducted by Intellecap in February 2014; see Annexure for list of respondents; and FAO, Dairy Sector Study of Nepal, 2010

Company	Revenue (US$ million)	EBITDA (US$ million)	EBIDTA Margin	Net Profit Margin
Meghna Condensed Milk Industries Limited	3.44	1.16	33.7%	NA
Rangpur Dairy & Food Products Limited	4.93	0.91	18.5%	10.70%
Sri Lanka				
Lanka Milk Foods (CWE) PLC	42.9	2.93	6.8%	5.08%

Source: Capital IQ, Bloomberg and MoneyControl databases, accessed in March 2014

Key investment opportunities in the dairy sub-sector are presented in Figure 54.

Figure 54: Private equity investment opportunities in dairy sub-sector



Source: Intellecap analysis, 2014

Investments in diversification of processing into value-added products like yoghurt, ghee, cheese and butter offer a lucrative opportunity for private equity investors since these products have profit margins of up to 30% which is double of margins on fluid milk. With rise in disposable income the consumption of these goods is increasing in Nepal. A similar shift has been observed in India over the last 10-12 years where 54% of milk consumption is in the form of processed foods today[125]

Predictability of quantity and price of milk supply can be secured with **investments in backward linkages** with milk aggregators as well as creating better backward linkages by establishing own chilling plants.

Investments in **building efficient and transparent partnerships with distributors and in own retail networks** can help private dairies overcome inefficiencies in current milk distribution network.

Investments in technology and processes to assess and certify milk quality will allow private dairies to build brand recognition and trust amongst buyers. Nepal has a significant problem with adulterated and low quality milk prevalence in market. MoAD has reported prevalence of up to 28%

[125] Angel Research, India, 2012

adulterated milk and 53% low quality processed milk from sample testing done in 2011[126]. This is a serious health concern and one that private dairies must invest in technology, processes and certification to overcome. In the absence of these investments, customers have shown a tendency to prefer DDC brand milk and direct sourcing from farmers over purchasing milk from private dairies[127]. Such investments would also help to create a differentiated range of fluid milk products like "full fat", "less fat" and "no fat".

Some key success factors that investors can use to evaluate attractiveness of private dairy industries are as follows:

- Backward linkages like partnerships with MCCs and owned or contracted cold storage units for securing supply of milk
- Diversified into milk processing
- Use of improved packaging techniques that increase shelf life of products
- Good brand recognition amongst end consumers, and status of "preferred brand" amongst private sector dairies
- Stringent quality control and certification processes in place that are adequately marketed to end consumers to build trust
- Efficient and transparent partnerships with distributors to avoid practises like "milk buy-back"

A case study of a private dairy in India that has built in some of these success factors into its business model in order to thrive in a fragmented market is presented in Case Box 3.

Case Box 3: Examining the business model of a growing private dairy company in a low income region of India

Indian state of Odisha and Nepal face similar systemic challenges in dairy sub-sector

Many of the systemic challenges facing the Nepalese dairy sector can also be observed in Odisha, which is a Low Income State in India with a per capita income of US$ 769[128]. Some of these challenges include low productivity of milch cows and buffaloes, fragmented nature of cattle rearing, lack of milk collection and cold storage, inefficiencies arising from dominant role of state-owned company, and lack of distribution networks. Until recent years, milk was sold through informal sector (door-to-door sales by farmers) and through government-owned retail outlets were the primary channels to reach customers. Little or no quality measures were in place and as a result adulterated milk proliferated. Due to these systemic challenges, the state of Odisha depended on milk supply from neighbouring states to address demand for milk.

Milk Mantra, a private dairy company that operates in Odisha has taken a "value chain" approach to addressing some of these systemic challenges through its business operations

Against such a background, Milk Mantra, a private dairy launched operations in Odisha in 2009. In order to grow and scale, the firm was forced to take a "value chain" view of the dairy industry in Odisha and take steps to address market inefficiencies that may not be traditionally taken up by private dairies in more developed markets. Milk Mantra also needed to relationships with dairy farmers and brand recognition amongst end consumers to compete effectively with Odisha State Cooperative Milk Producers' Federation Ltd (OMFED), the state-owned dairy which has been a significant player in the dairy space in Odisha for over 3 decades.

In 2011, Milk Mantra raised funding of US$ 5 million (approximately 50% debt and 50% equity) from a

[126] MoAD Yearbook, 2012

[127] An overview of smallholder dairy production and marketing in Nepal; National Zoonoses and Food Hygiene Research Centre and National Dairy Development Board; 1997

[128] Government of India, 2013

Case Box 3: Examining the business model of a growing private dairy company in a low income region of India

group of investors including Aavishkaar, an early-stage venture capital fund in India that has pioneered the practise of investing in high risk and high impact companies like Milk Mantra. The firm also raised follow-on Series B funding from Aavishkaar in 2013.

The company has benefited from being led by an experienced management team who bring operational and brand building expertise

Milk Mantra is promoted by Srikumar Misra who has over a decade of experience in setting up new market operations, brand sales & marketing, and JVs & M&A across India, China, South Africa and Europe. In addition to Misra, 4 senior executives, each with experience of 12 to 20 years oversee verticals like operations, manufacturing, branding and marketing, and sales.

Milk Mantra has created effective backward linkages to ensure supply of milk

Milk Mantra procures over 35,000 litres of milk every day from 12,000 farmers spread across 200 villages. Farmers deposit milk at collection points in their villages twice a day; and as part of an Ethical Milk Sourcing programme Milk Mantra makes timely payments at committed rates to farmers thrice a month. Milk quality testing and data collection is done at source. In addition, the milk collection points also guide farmers on cattle care for better milk production. This approach has helped the company build strong relationships with farmers. The firm has also invested in vacuum tanks and over 20 Bulk Milk Coolers (state-of-the-art infrastructure procured from Sweden-based DeLaval Group) that help to maintain quality of milk before it reaches the main processing plant. The processing plant is located closer to dairy farming villages to decrease transit time.

The firm has diversified into production of processed milk products, and has invested in advanced packaging technology

In addition to fluid milk, Milk Mantra also diversified into production of cottage cheese which has higher shelf life and margins. The company packages milk using "Tripak" technology which and cheese using multivac packaging technology which not only increase shelf-life by 700% but also increase durability of product in transit.

Milk Mantra has built effective channels to reach consumers through door-to-door distribution partners as well as retail stores

Milk Mantra has built an efficient incentive system for its distribution partners; and has additionally invested in promoting its brand through campaigns that emphasise its better quality using taglines like *"no need to boil"* as well as the benefits for the dairy farmer community. Milk Mantra products reach customers through a "Direct to Home Delivery" system; as well as through top grocery store chains.

Source: Milk Mantra and Milky Moo websites accessed in April 2014; VC Circle

Dairy companies face some key risks and challenges to growth in the next 4-5 years

- Most dairies have a geographical concentration of milk sales in 1-2 regions and can diversify beyond these, but diversification requires significant investments in cold storage and temperature controlled transportation fleet
- In the absence of backward linkages for milk procurement, dairy companies are completely dependent on MCCs and cooperatives for raw milk and have low predictability of raw material procurement which is a huge risk to their business model
- Pricing control guidelines issued by DDC can cause wide fluctuations in margins, especially for dairy companies that predominantly sell fluid milk
- Insufficient processing infrastructure causes dependence on milk and milk powder imports during lean seasons

- Lack of quality assurance and certification has led to the prevalence of adulterated milk, and private dairies run the risk of losing customer trust in the absence of such investments

6.2 Emerging Investment Opportunities

Aside from the sub-sectors analysed in Section 6.1; there are a few emerging opportunities for investors in sub-sectors like honey and coffee that are not yet viable but are expected to become attractive in the next few years.

6.2.1 Emerging Opportunity in Honey Sub-Sector

Honey is an important agri-commodity in global trade

Honey has demand as an agri-commodity for its value as a sweetener in food preparations, its healing properties in traditional medicinal approaches like Ayurveda and Homeopathy, and as an important ingredient in many processed foods and natural cosmetics. By-products of bee-keeping like beeswax also have a demand in jewellery and shoemaking industries. The global trade in honey has growing at CAGR of 3.16% (by volume) over the last decade, with 1.57 million metric tons produced in 2012 and nearly 30% of this exported[129]. There are two distinct varieties of honey produced and traded – multifloral and unifloral honey, of which the latter is considered "pure honey" and has a premium value.

Nepalese honey is perceived as a "premium commodity" in global markets and it is unique due to traditional approaches like low use of agrochemicals high-altitude bee-keeping

Majority of honey produced in Nepal is multifloral in nature, although there is some production of unifloral honey like wild, litchi, and sunflower among others. Nepalese honey is perceived to have a superior taste in global markets and hence is an important commodity for export, especially to Germany, Japan, Malaysia, Russia, Taiwan, Korea, USA and India[130]. Since the use of agrochemicals is naturally lower in the country, most honey production falls under the category of organic honey which fetches higher prices in international markets.

Nepal's terrain and agro-climatic conditions are also favourable for bee-keeping of the Himalayan Cliff Bee which produces a speciality honey named "red honey" with grayanotoxin which has relaxing properties. Red honey has high demand in Japan and China for medicinal use. The introduction of European bee types to Nepal along with de-forestation has seen a decline in the population of Himalayan Cliff Bee, but conservations measures by NGOs and farmer associations over the past few years are attempting to stabilise the population and re-introduce the native bee types[131].

Most bee-keeping and honey production in Nepal is in the informal sector and is highly fragmented

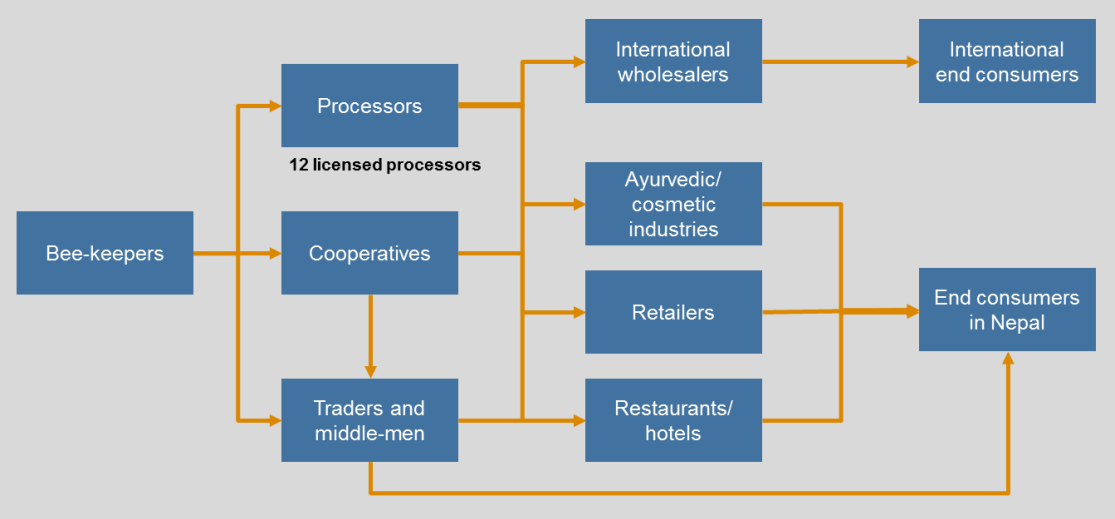
It is estimated that there are over 140,000 bee-hives in Nepal with a total production capacity of 13,650 metric tons per year; but currently about 10% of this production potential is realised with 1500

[129] FAOSTAT database, accessed in March 2014
[130] FNCCI, Market Access of Nepalese Honey, 2009
[131] Indigenous Honeybees in the Himalayas: A Community Based Approach to Conserving Biodiversity and Increasing Farm Productivity, Austrian Ministry of Foreign Affairs, 2004; BBC Natural World Documentary Film on Nepalese Wild Honey, 2008; and Himalayan Honeybees and Bee-Keeping in Nepal, Standing Commission of Beekeeping for Rural Development

metric tons being produced[132]. There are 12 licenced private honey industries in Nepal; of which only 1 is reported to be medium to large-sized with more than ~ US$ 300,000 in fixed capital investments[133].

Firms like Dabur Nepal and Gandaki Bee Concern are among the largest by production capacity and turn-over. Both have foreign-ownership structures with Dabur Nepal being a wholly owned subsidiary of Dabur India, and Gandaki having a JV with Honey International B.V. in The Netherlands. Most of the bee-keeping and honey production is in the informal sector where honey is sold directly to households without processing by bee-keepers. Figure 55 shows the value chain of this sub-sector in Nepal.

Figure 55: Honey value chain in Nepal



Source: InfoDev, Promoting Agribusiness Innovation in Nepal, 2013; FNCCI Market Access of Nepalese Honey, 2009; GIZ INCLUDE, Bee-keeping in Nepal, 2010; and Intellecap Analysis; 2014

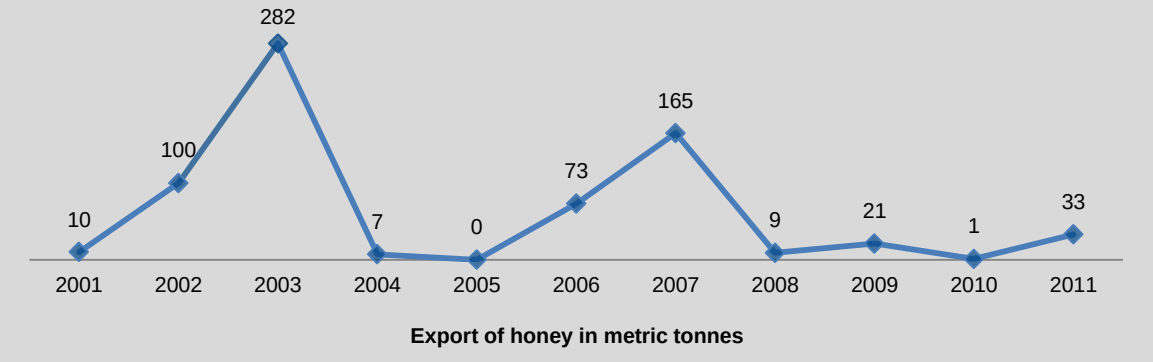
Industry growth can be accelerated by scaling up production to commercial levels and putting in place quality assurance mechanisms that will meet international standards

Since the current domestic consumption of honey is estimated to be only 23% of total production[134], the growth of honey industries will have a significant degree of reliance on export markets. However, less quantity of production, coupled with challenges of quality assurance has negatively impacted export of Nepalese honey as shown in Figure 56. While export trends showed encouraging signs in 2002 and 2003, export in subsequent years fell due to non-compliance with strict sanitary and phytosanitary international food quality assurance guidelines laid out in the Codex Alimentarius[135]. Along with the loss of international markets, production has also suffered due to traditional, low yielding approaches to bee-keeping which make it less lucrative and also more difficult for domestic

[132] FNCCI, Market Access of Nepalese Honey, 2009
[133] Department of Industries, Industrial Statistics, 2013
[134] InfoDev, Promoting Agribusiness Innovation in Nepal, 2013
[135] The Codex Alimentarius defines honey, and sets benchmarks for moisture content, sugar, and water soluble solids. It also lists non-permissible contaminants and lays out hygiene and other standards. Compliance with Codex Alimentarius must be certified by an internationally recognised body.

industries to compete with international imports. Nepal imported 280 metric tons or US$ 0.56 million worth of honey in 2013[136].

Figure 56: Export of Nepalese honey



Source: FAOSTAT database, accessed in March 2014

These challenges can be mitigated by – (a) more modern approaches to bee-keeping; (b) better storage and processing technologies for supply chain efficiency; and (c) centralised quality assurance systems. Some strategic that firms can use to commercialise production include JVs with foreign honey industries, and partnerships with honey sector donor programmes in Nepal. For instance, Nepalese private sector firm Gandaki Bee Concern has entered into a JV with Honey International B.V. in The Netherlands which has helped them bring better bee-keeping practises to 600 farmers as well as set up a processing plant in Kathmandu. Gandaki has also entered into a partnership with the Micro-Enterprise Development Programme (MEDEP) – a joint initiative of the Government of Nepal, the Ministry of Industry (MoI) and UNDP. Under a cost-sharing agreement, Gandaki is leveraging this donor programme to provide capacity building support to 475 bee-keepers along with a guaranteed honey purchase option. Gandaki is also working with this programme to partially cover costs of organic certification of honey sourced from bee-keepers.

At the systemic level, the government, aid partners like UNDP, and Nepalese industry associations like FNCCI have been focused on addressing the quality assurance barrier to international trade by bringing certifications like Hazard Analysis Critical Control Point (HACCP) and creating a Residue Monitoring Plan (RMP). The RMP is currently under discussion between EU and Nepal, and is expected to be ratified shortly. The government has also collaborated with UNDP to create a facility for certification of organic honey through Organic Certification Nepal.

The government is also pushing for diversification of trade partners beyond EU and India to countries that have less stringent import requirements. This combination of firm-level and systemic changes could potentially see honey sub-sector emerging as an attractive investment opportunity in the next few years.

6.2.2 Emerging Opportunity in Coffee Sub-Sector

Coffee has high demand internationally, and global trade in the commodity has been growing

Coffee is a high value crop with demand from food and beverage industry. It is consumed as a popular drink due to presence of caffeine which can have a stimulating effect. It is also a popular

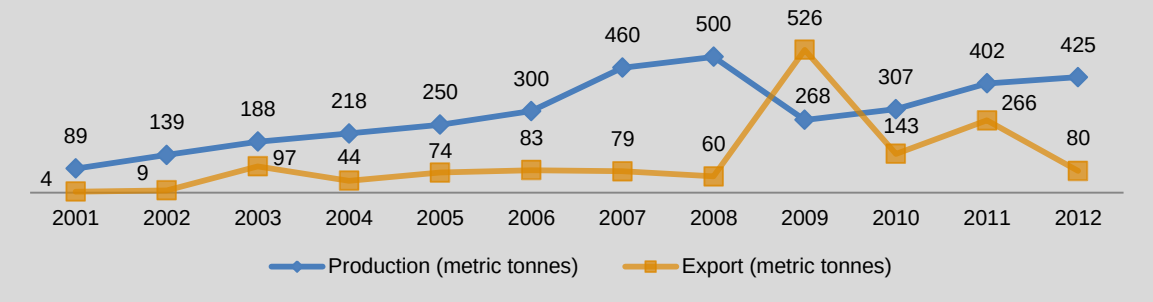
[136] Trade and Export Promotion Centre database, Nepal, accessed in March 2014

"flavour-enhancing" addition to carbonated drinks, processed sweets, cakes and other edible items. Over 8.8 million metric tons of coffee was produced globally in 2011, and global exports were valued at US$ 42.6 billion. Production of coffee has been growing at a CAGR of 1.2% only; while global trade has been growing at a CAGR of 17.53% over the past decade. This indicates that there is an opportunity for global production to increase.

There is an opportunity for Nepalese coffee to emerge as an important export commodity that addresses global demand; but production and processing lack commercially viable scale

Coffee farming in Nepal has high potential due to suitable agro-climatic conditions, especially in hill districts of Western and Central development zones. The country primarily grows Arabica type of coffee which has high value in international markets and fetches lucrative prices[137]. Industry practitioners attribute this to lower caffeine content in Nepalese coffee combined with perceived "exclusivity" of Arabica coffee grown in highlands[138]. Major export markets include Korea, Japan, USA and some EU countries[139]. As a result, the government has been encouraging coffee farming and processing, and also launched a "Nepali Coffee Brand Logo" with a view to capture market share for Nepalese coffee in international markets. This logo is provided to coffee traders registered with NTCDB that trade in Arabica type coffee planted at and above 800 metres and farmed using organic techniques. Spurred by this support, coffee production has seen growth at a CAGR of 15.27% in the past decade as shown in Figure 57, but exports during the same time have been erratic as a result of inadequate linkages to traders and distributors.

Figure 57: Coffee production and import in Nepal



Source: FAOSTAT database and Trade and Export Promotion Centre Nepal database, accessed in April 2014

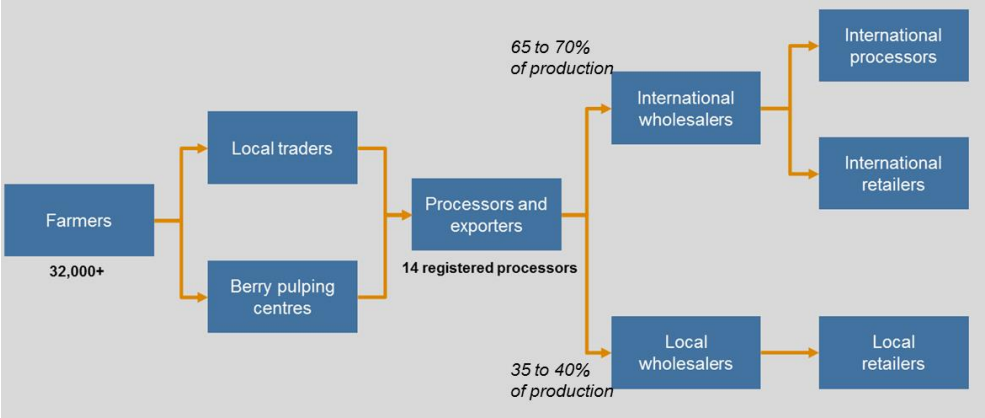
While international markets currently present a larger market opportunity for Nepalese coffee, the domestic market is also expected to grow and rise in relevance

Nepal is traditionally a tea-drinking country. About 65 to 70% of Nepalese coffee produced is exported; while 35 to 40% is consumed in domestic markets[140]. While domestic market currently forms a small portion of market opportunity, it is expected to grow in relevance due to early signs of the emergence of a "coffee-drinking culture" in Nepal. This shift is driven by demand for freshly brewed coffee from tourists and the emergence of coffee-centric cafes like Himalayan Java. Industry practitioners estimate that the number of coffee-centric cafes in Kathmandu alone has grown 3-fold since 2010. Domestic coffee consumption is expected to be a largely urban phenomenon with most demand from Kathmandu area[141].

[137] Promoting Agribusiness Innovation in Nepal, InfoDev, 2013
[138] Primary interviews conducted by Intellecap in April 2014
[139] Trade and Export Promotion Centre Nepal database, accessed in April 2014
[140] NTCDB website accessed in April 2014
[141] Primary interviews conducted during the course of this study in February 2014

Overall, the value chain for coffee in Nepal as shown in Figure 58 has several inefficiencies including low usage of agri-inputs and outdated farming techniques.

Figure 58: Value chain for coffee sub-sector in Nepal



Source: Promoting agribusiness innovation in Nepal, InfoDev, 2013; NTCDB website accessed in April 2014; and Intellecap Analysis; 2014

While agribusiness activity in the coffee sector is currently low, more businesses are expected to enter this industry due to its high export potential and hence sector may become an attractive investment opportunity in the next few years

There are 14 registered coffee processors in Nepal, and NTCDB recognises 3 traders that can use the Nepali coffee logo. Businesses engaged in processing and trading of coffee are likely to emerge as attractive investment opportunities in Nepal in the next few years; provided that they are able to secure procurement and the overall coffee production increases as well. The NTDCB predicts production to increase by 3-fold in the next decade, so there is reason to be optimistic about the outlook for coffee sector.

6.3 Non-Opportunities

Non-opportunities for private equity investors fall under two broad categories – (a) sub-sectors where FDI is not permitted and (b) currently unviable sub-sectors.

FDI is currently not allowed in companies operating in sub-sectors of poultry, fisheries, bee-keeping, cattle-rearing and wool

These industries are classified as “cottage industries” by the government and are not currently available as investment opportunities to foreign investors. However due to rising income levels and consequent increase in demand for meat and fish in Nepal as well as the high demand in neighbouring countries, poultry and fisheries have potential to become “Emerging Investment Opportunities” if the FDI norms are relaxed to allow foreign investments. Since Nepal has a relatively nascent and dynamic policy regime for FDI, such changes are possible in the short to medium term.

Sub-sector of animal feed has been found to be overcrowded and margin pressured; hence private equity investments in this industry are currently unviable

The growth of domestic poultry sector has in-turn driven growth of livestock feed sub-sector in the past 4-5 years. Organised sector livestock feed is primarily processed from crop residues and by-

products such as rice straw, wheat straw, corn stover, millet straw, pulses residues, brans from different cereal and leguminous grain products[142] with some added supplements like maize and soya. Supply of maize and soya is primarily import-dependent and accounts for over 60 to 70% of the cost of production. Due to this over-reliance on imports, livestock feed companies operate at very slim margins of 10 to 15%. There are over 150 poultry feed manufacturers in Nepal that collectively manufacture over 0.78 million metric tons of feed[143]. On an average, most plants are operating at 50 to 60% capacity and yet adequately meet the demand for poultry feed[144]. Hence, the market is found to be overcrowded.

7. Exit Opportunities for Investors in Agribusinesses

The flow of private equity investments into agribusinesses in Nepal is a comparatively new phenomenon. The few investments made so far have come in through FDI route as shown in Figure 30. This creates a challenge in predicting exits trends as there is lack of historical data as well as lack of financial industry infrastructure to facilitate exits

7.1 Spectrum of Exit Routes

A key role that private equity firms are expected to play besides bringing in necessary capital ,in agricultural sector Nepal is to help agribusinesses build efficient value chains across different sectors, bring in technology and processes to increase value-addition to agro-products, and incorporate quality assurance processes and certifications.

With these investments; agribusinesses are likely to grow faster, increasing their revenues and profitability and thereby increasing firm value. This in-turn results in making such agribusinesses attractive to other investors – ranging from investment funds to larger agri-businesses - that can buy-out stake of first investor at a higher valuation. It is also possible that enough value is created for the promoter to buy-out investors' stake. The process of an equity investor selling stake to another investor at a higher valuation is termed an "exit", and the spectrum of possible exit opportunities includes – (a) Management / Promoter buyout, (b) Secondary Sale, (c) Trade Sale, (d) IPO[145].

- **Management / Promoter buyout:** Management / Promoter buyout involves the repurchase of the private equity investors' shares by the company and/or its management. The management buyout method is popular in several sectors in Nepal where profit margins and liquidity are on the higher side. In such situations, promoters to utilise the cash earnings for buying back the stake of the private equity investor

- **Secondary Sale:** Secondary sale is the purchase of the private equity investors' or others' shareholdings by another investment institution. Private equity investment activity in Nepal is still an emerging phenomenon; however development financial intuitions such as IFC have been active in making risk capital investments in Nepal in recent past. Secondary sale would

[142] Nepal Agricultural Research Council; 2006
[143] Nepal Feed Industries Association
[144] Intellecap analysis from primary interviews done in March 2014
[145] Intellecap primary research

be an attractive method to exit in Nepal once the investment eco-system develops and matures[146].

- **Trade Sale:** A trade sale is selling the company's shares to another company (structured as a merger or an acquisition) usually in the same industry sector when the acquirer needs the company to supplement its business areas[147]. The numbers of publicly available Merger and Acquisition (M&A) transactions in Nepal are on the lower side[148], but the activity is picking up in recent years after the political stability in the country. Many companies in Nepal have started to realise the benefits of economies of scale and scope, increased revenue and market share, cost reduction through consolidated operations. The trade sales therefore in general offer better opportunities for private equity funds for exits in Nepal in sub-sectors like tea and dairy where opportunities for consolidation are higher

- **IPO (Initial public offering):** IPO is used to publicly share the equity offering that is followed by the listing of shares on stock exchange. The capital markets in Nepal are in nascent stage and are dominated by banks and financial institutions where presence of real sector on the capital markets is very low (excluding the hydropower sector)[149]. IPO route in general may not be the best possible ways of exits for private equity funds in Nepal.

7.2 Likely Exit Routes for Agribusinesses in Nepal

Promoter buy-back likely to be most popular approach for equity exits in Nepal in the next 4-5 years; especially in spices and MAPs

Re-purchase of private investor's shared by promoter(s) is likely to be the more prevalent approach for exits in Nepal; especially in sectors like spices and MAPs which have higher margin businesses and comparatively higher market opportunities. While promoter ability to buy-back will be one driver; the other will probably be the lack of higher ticket size investors since the investment value-chain is yet to emerge in Nepal.

Trade sale may be observed in observed in sectors with lower margins and liquidity, and higher opportunity in value chain integration like dairy and tea

Acquisition by a larger business or merger of two complementary businesses is somewhat likely in sectors like tea and dairy where there is a huge opportunity in increasing production capacity or improving value-chain integration.

Secondary-sale has low likelihood in the next 4-5 years

Secondary-sale requires the establishment of a value-chain of equity investors who have differing but complementary investment sizes, risk appetites and preferred stages of investment. Since the practise of equity investing in Nepal is very nascent, this value-chain will take time to emerge. Most investors are likely to prefer growth-stage investments with lower risk and shorter return timeframes and their investing activity is more likely to be competitive than complementary as was observed in the Indian context in 2003-2008.

[146] Section 7.7.2 recommends some of the ways on how the private equity enabling ecosystem in Nepal can be created.
[147] A trade sale is similar to 'strategic' sale
[148] excluding Banking, Financial Services and Insurance sector
[149] Refer Annexure 12.4.1 for detail discussion in capital markets in Nepal

Exit through IPO is highly unlikely for agribusinesses in near future

Although 4 agribusinesses in Nepal are publically listed as shown in Table 19; they are not actively traded and no new companies have been listed in the past 7-8 years. Public listing is not a viable strategy for equity exits in Nepal.

Table 19: Listed companies in agri-sector in Nepal

Company	Description	Market Capitalisation (US$)	Total Paid up Value (US$)
Arun Vanaspathi Udyog Limited	Manufacture and distribution of refined edible oil and vanaspati ghee	329,377	567,891
Fleur Himalayan Ltd	MAPs processing and retail	135,230	202,844
Nepal Vanaspati Ghee Udyog Limited	Manufacture and distribution of refined edible oil and vanaspati ghee	313,435	104,478
Shree Ram Sugar Mills Ltd	Manufacture sugar and industrial spirit	3,143,112	3,143,112

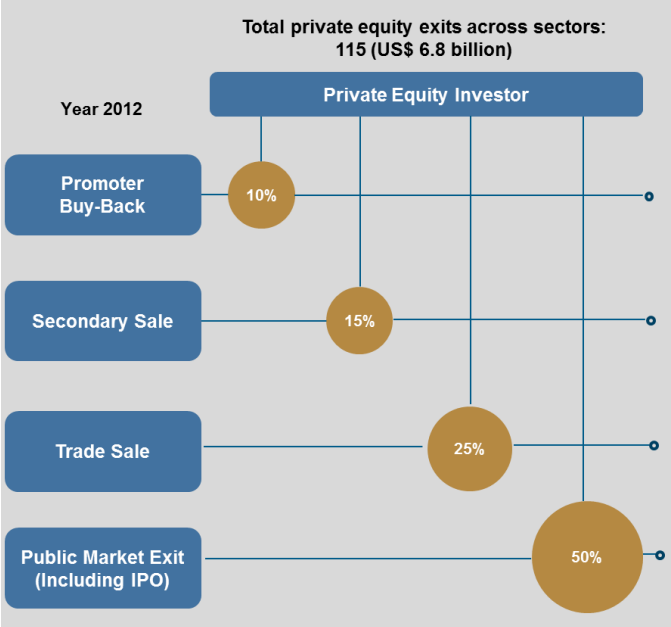
Source: Nepal Stock Exchange Limited database, accessed in March 2014. Conversion rate used 1 US$ = 96.61 NPR.

7.2.1 Exit Trends Observed in Agribusinesses in India

The capital markets in India are much more developed compared to Nepal[150] and the private equity (and venture capital) activity is much advanced level. The most popular exit route for private equity investments in India is through public market sales, including IPOs. Out of the 115 exits reported in India 2012, more than 50% were through public market sales, including IPOs[151] as shown in Figure 59.

[150] Refer Annexure 9.4.3 for details
[151] IVCA; India Private Equity Report 2013, Bain and Company

Figure 59: Distribution of private equity exits in India

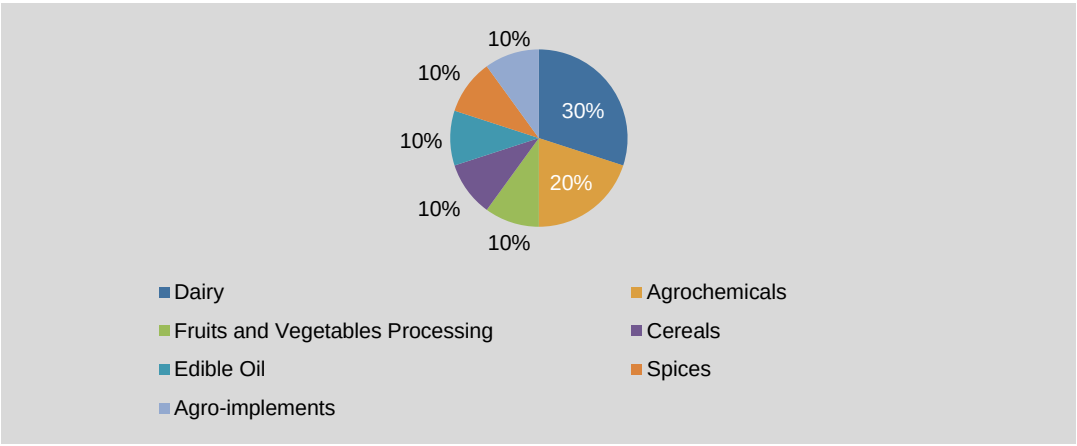


Source: IVCA; India Private Equity Report 2013, Bain and Company

In the agribusiness space, trade sale has been the most popular mode of exit

A total of 63 private equity investments have been reported in agribusinesses in India between 2009 and 2014; and 10 exits have been reported thus far. Trade Sale and Secondary Sale have been the prevalent forms of exit; which can be attributed to trend of consolidation in the agri-sector for value chain efficiencies and to presence of a mature investment value chain. The distribution of exits across different sub-sectors is shown in Figure 60.

Figure 60: Distribution of agribusiness exits across different sub-sectors in India



Source: Venture Intelligence India database, accessed in April 2014

Return multiples across agribusiness exits in India typically range from 2.1x to 2.9x

Specific details of 10 exits observed in agribusinesses in India between 2009 and 2014[152] are shown in Table 20.

Table 20: Agribusiness exits observed in India over past 5 years

Agribusiness	Acquirer	Seller	Stake Sold (%)	Deal Size (US$ million)	Exit Procedure	Return Multiple
Sub-Sector: Dairy						
Tirumala Milk Products	Le Groupe Lactalis	Carlyle	26%	71.5	Trade Sale, complete exit	4.55x
Parag Milk	IDFC PE	Motilal Oswald	-	-	Secondary Sale, Partial	2.9x
Shree Kamdhenu Electronics	Grassroots Business Fund	Aavish-kaar	2.6%	0.4	Secondary Sale, Partial	-
Sub-Sector: Fruits and Vegetables Processing						
Global Green Company	Avantha Holdings	Rabo Equity	15.99%	-	Promoter Buy-Back, partial exit	-
Sub-Sector: Cereals (Rice)						
Bush Food Overseas	Hassad Food	Stan-Chart PE	29%	50.3	Trade Sale, complete exit	2.49x
Sub-Sector: Agrochemicals						
Sree Ramicides	SDS Biotech	ePlanet Ventures	36.3%	10	Trade Sale, complete exit	2.5x
Dhanuka Agritech	-	Light-house	8.25%	3.83	Public Market Sale, partial exit	-
Sub-Sector: Edible Oil						
GeePee Agri	Archer Daniels Midland	Rabo Equity	26%	-	Trade Sale, complete exit	-
Sub-Sector: Spices						
Eastern Condiments	McCormick	New Vernon	13%	17.5	Trade Sale, complete exit	2.16x
Sub-Sector: Agro-implements						
EPC Industries	-	Schro-ders	-	11.13	Public Market Sale, complete exit	2.57x

Source: Venture Intelligence India database, accessed in April 2014

[152] January 2009 to March 2014

7.3 Challenges in Exit

The key challenges to private equity exits in Nepal fall under three broad categories as shown in Table 21; i.e. systemic, equity investor-related and agribusiness promoter-related challenges.

Table 21: Challenges in exits in Nepal

Systemic Challenges
Nascent industry, so higher risk and longer return horizons are possible
Little or no regulatory oversight for private exit markets
Lack of investor-entrepreneur connection platforms and investment intermediaries
Over-reliance on foreign equity
Currency devaluation risk
Lack of exit platforms designed for secondary-sale
Lack of ecosystem enablers like incubators, angel networks, business plan competitions and grand challenges
Equity Investor-Related Challenges
Less experience of managing portfolio companies in economies like Nepal
Difficulty in building deal-flow
Lack of risk assessment frameworks customised for Nepal
Agribusiness Promoter-Related Challenges
Lack of awareness about the comparative benefits of debt and equity
Low level of investment-readiness
Lack of know-how around working with external boards and fear of losing control of company

Source: Intellecap analysis, 2014

In addition to these, some regulatory hurdles that could be challenges for agribusiness investors are:

Promoter lock-in period of 3 years: This is a key challenge for exits of private equity companies in Nepal. The existing provision and law states that "the shares subscribed by the shareholders in the groups other than public (group of promoter and other) of the body corporate which is eligible for going public, shall not be qualified for sale unless a three years period after the allotment of such shares is complete"[153]. The three years lock in period for private equity investors is on the higher side in the SAARC when compared to one year in India[154] and Sri Lanka[155] and no lock in period in Bangladesh[156].

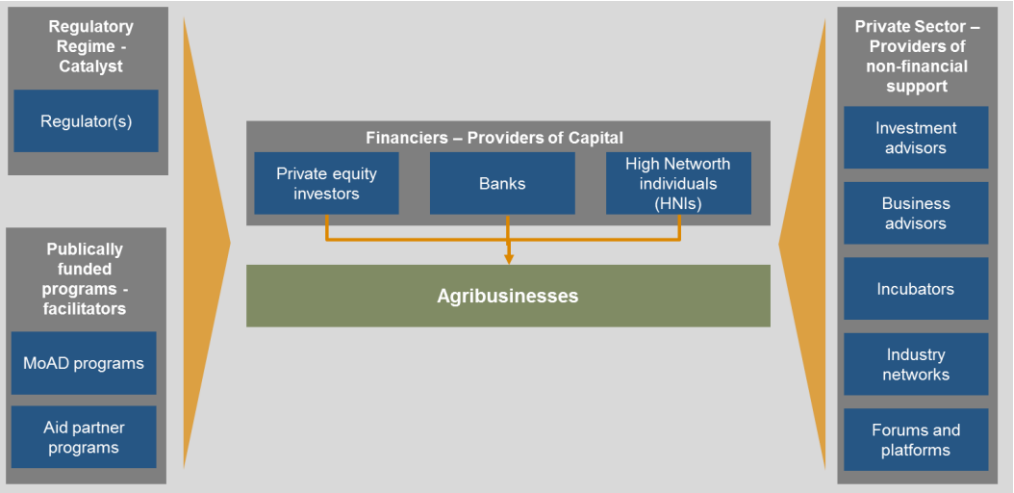
The repatriation of capital is a challenge for foreign equity investors in Nepal: at present the repatriation of capital to a foreign country (except India) requires approval from the different departments in the NRB and department of industries and is often discretionary[157]. Given the uncertainty in the policies and regulations of future governments due to political instability, this discretion could be major hurdle for foreign investors in exits.

[153] SEBON Annual report 2011-12
[154] SEBI annual report 2012-13
[155] CSE directive 2012
[156] SECBD website, 2013
[157] Intellecap primary research

7.4 Enablers Needed for Exit

The government and its aid partners, the regulatory regime, and private sector can work in a complementary fashion to build enablers needed for exit as shown in Figure 61. When these actors begin to harmonise their functions, an "ecosystem" for equity investments begins to emerge as has been observed in the case of Silicon Valley; and more recently in India and parts of East and South Africa.

Figure 61: Typical ecosystem for private equity investments in emerging economies



Source: Intellecap analysis, 2014

Government and aid partners can create more impact by playing a facilitative rather than direct role

Government and aid partners could potentially create most impact by helping to decrease risk of investments; acting as anchor investors in funds; funding capacity building of idea to early stage agribusinesses through programmes like PACT and NEAT[158]; and helping to develop agri-value chains like Mercy Corps' Ginger and Large Cardamom value chain programmes.

The creation of 'Guarantee funds' by public sector institutions can help to channel more debt and equity capital into agribusinesses

Creation of guarantee fund by Public sector institutions, both for debt and equity products could provide commercial banks and private equity funds with partial coverage of risk exposure against investment made in agribusinesses. This would ensure that the capital supply to agribusiness is not affected in the long term and this would facilitate further investments in the sector.

Building an ecosystem for the secondary markets to facilitate private equity investment exits through open offer would create more exit opportunities

More awareness about the nuances of equity investing would be beneficial for both entrepreneurs and investors. Industry networks, forums and conferences, incubators and investment intermediaries have a key role to play in building this awareness and creating a better ecosystem for equity investments. Historically given the low trading volumes in secondary markets in Nepal, an enabling environment for

[158] See Section 3.5 for details

promoting secondary market transactions should be created[159]. The key drivers that would facilitate the trading volumes in the secondary markets in Nepal are a) introduction of reliable online trading system making trading affordable and b) settlement of transactions to be shortened to a few days from the present duration that could last for few weeks.

Regulatory regime can play a key role in putting in place regulatory structures to allow exit platforms to emerge

Recognising equity investments as a separate asset class creates more formal structures and higher degree of organisation in the private equity market, which helps investors to navigate the processes of incorporation, licensing and approvals. This recognition can also pave the way for special concessions to private equity investors as well as create the foundation for public and private exit platforms to emerge.

Private sector actors like incubators, angel networks, and investment intermediaries can help to reduce duplication of efforts in deal sourcing and early stage capacity building; and highlight best case practises for the industry

Private sector actors like incubators, industry networks and forums like conferences and workshops are greater aggregators of businesses. By playing this role, they can decrease duplication of effort in pipeline discovery across different private equity funds and also ease the process of fundraising for entrepreneurs by helping them navigate through different choices. This trend has been observed in India, where industry networks like TiE, FICCI and NASSCOM; private and public incubators; and forums like TIECON and Sankalp Forum have played a key role in helping the venture capital and private equity spaces grow.

8. Access to Capital for Agribusinesses

Agribusinesses in Nepal face a significant challenge in accessing financial capital for growth

Agribusinesses lack adequate access to both debt and equity funding, which is a critical hindrance to their growth and is also slowing down commercialisation of agriculture in the country

8.1 Debt financing in this sector

Difficult to estimate quantum of debt funding, but very few medium to large agribusinesses seem to have access to debt funding

The Nepal Rastra Bank[160] includes agriculture under Deprived Sector Lending norms, and in 2012 reported 3.75% of all debt funding towards agriculture[161]. However, many agribusinesses fall under the category of “Manufacturing” since they are further down the value chain, and as a result this data does not fully represent flow of funding towards sub-sectors analysed in Section 3.1. Data with further granularity is not available, and hence it is difficult to accurately estimate flow of debt funding.

[159] Refer Annexure 9.4.3
[160] Nepal’s central bank
[161] NRB, Bank Supervision Report, 2012

Overall, the supply of debt to businesses in Nepal appears to be inadequate since only 10% businesses report that they are well-served by the banking infrastructure, and only 1% have a commercial bank as source of financing[162].

Agribusinesses face several challenges in accessing debt capital. These include:

- **Requirement of high collateralisation:** Banks tend to lend only to businesses in more established sub-sectors and often require up to 150% collateralisation.
- **Long lead times in loan approvals:** Since many banks lack the risk assessment and due diligence frameworks needed to evaluate agribusinesses for loans, the process of procuring a loan can take from 3 months to over a year with significant time investment from senior management[163].

8.2 Debt financing in this sector

Equity funding in agribusinesses primarily consists of public listing and FDI; very little organised private equity investing activity exists

There has been little or no public information on equity investments made in agribusinesses. There are 4 listed agribusinesses as described in Table 19 that represent 1% of all listed entities in Nepal however none of these are actively traded. They have a total market capitalisation of US$ 3.9 million and paid-up value of US$ 4.02 million. No agribusiness has been listed in the last 7-8 years[164]. FDI in agribusiness has been a significant source of private risk-capital as discussed in Section 5.

Agribusinesses face several challenges in accessing equity capital which include:

- **Low supply of organised equity funding** which means that promoters with existing relationships/networks built with financiers are more likely to be evaluated for investments
- **Low level of investment-readiness** in terms of management capacities, operational efficiencies and understanding of equity capital raising process
- **Very little activity in "investment intermediation"** from incubators, angel networks, investment advisors and others who typically link investors and entrepreneurs in more mature markets
- **Lack of clarity in valuations** and nature of investment agreement
- **Lack of exit platforms**

[162] IFC Enterprise Finance Gap Database, accessed in March 2014
[163] From primary interviews conducted during the course of this study
[164] NEPSE database, accessed in March 2014

8.3 Grants and Resources

There are several international financial and non- financial assistances available to businesses which Nepal can explore to bring in measurable operational efficiency and success within a company. Some of the relevant grants and resources along with their criteria have been listed below:

1. **Austrian Development Co-operation – Business Partnerships**

In cooperation with the Oesterreichische Entwicklungsbank (OeEB) the Austrian Development Agency (ADA) promotes Business Partnerships.

Activities that can be undertaken with the support of ADA:

- Improvement in initial training and vocational training
- Know-how transfer
- Use of renewable energies or increase in energy efficiency
- Improvement in water supply and waste water treatment
- Improvement in waste disposal and/or recycling
- Promotion of rural development and responsible management of natural resources
- Increase in production, competitiveness and quality
- Consolidation of supply chains
- Improvement in social standards and working conditions
- Improvement of the health of workers and their families, fostering gender equality

These measures can be supported as part of a business partnership with a non-repayable grant. Funding amounts to up to 50% of direct project costs (not exceeding EUR 200,000), which must total at least EUR 100,000. The term of a Business Partnership is limited to three years. The programme is open for applications all year round.

Criteria

ADA is interested in innovative and sustainable projects. To be eligible for funding, a project must meet the following conditions:

- Applicant is a European company in partnership with a company from a developing country.
- Generation of local added value, turnover and profits.
- Long-term commitment in developing country.
- Benefits for local population beyond the applicant's core business.
- Compliance with national laws and internationally recognised environmental and social standards.
- The project includes flanking measures that contribute both to improving the local social, ecological or economic environment and the success of the company.

Eligible costs

The application includes a budget according to ADA format. The following costs can be included:

- Time spending of project partners.
- Salaries of staff hired for the project.
- Local and international travelling and accommodation costs.

- Capital goods investments (only the annual depreciation costs are covered for the duration of the project).
- Costs of training, advisors, certificates, marketing, studies etc.

2. German Development Co-operation - DeveloPPP

The develoPPP.de programme provides up to 50% grant (maximum of Euro 200,000) to selected projects proposed by a European company or a company in a developing country in which European companies or nationals own at least a 25% share. The programme is funded by the German government and administered by its agencies DEG, GIZ and Sequa. These agencies hold ideas competitions four times a year for the develoPPP.de programme with the following closing dates: 31 March, 30 June, 30 September and 31 December.

Criteria

To qualify for develoPPP.de grant funding under the ideas competition, a project needs to have the following features:

- The applicant is a company registered in Europe or a company registered in a developing country with at least 25% European ownership.
- The applicant is at least 3 years active, has at least 10 employees and a turnover exceeding Euro 1 million.
- The applicant has a long-term entrepreneurial commitment in the target country and demonstrates a commercial interest in the project.
- The project should be completed within 3 years from contract signing.

Activities

DeveloPPP will co-finance exclusively projects that prepare or accompany long-term private sector commitments, like:

- Design and introduction of new products, technologies and services relevant to development; demonstration or pilot projects.
- Improvement of range of courses offered at training institutes.
- Improvement of energy and water supply.
- Improvement of healthcare.
- Job creation.
- Improvement of labour and social standards.
- Measures to boost environmental and climate protection.
- Supply chain management.
- Economically and socially responsible value chain management.

Eligible costs

The application includes a budget according to DeveloPPP format. The following costs are eligible:

- Time spending of project partners.
- Salaries of staff hired for the project.
- Local and international travelling and accommodation costs.
- Capital goods investments (only the annual depreciation costs are covered for the duration of the project).

- Costs of training, advisors, certificates, marketing, studies etc.

3. German Development Co-operation – Up-scaling

With the special programme “Up-Scaling”, DEG finances pioneer investments of small and medium enterprises (SME) in developing and emerging countries that intend to scale up innovative business models. The programme addresses companies whose financing needs lie somewhere between micro financing and the traditional financing by commercial banks.

Target group

SMEs that are registered in the developing country- This may also be local subsidiaries of German or European companies. The applicant company has to provide the resources in terms of finance and manpower as well as the relevant know-how to implement the project and needs to be able to present at least one annual financial statement.

Funding

DEG finances a maximum of 50% of the total investment volume (max. EUR 500,000) under the condition that there are private sponsors who contribute a substantial share of equity (at least 25%). The DEG share must be repaid in the event of success of the project (depending on pre-defined financial criteria such as cash flow, revenue or profit).

Conditions of co-financing

- The project is based on an innovative business approach.
- A pilot phase has already been successfully completed with proof of concept as regards to technology and business model at local level.
- The project must generate profit (proof by means of business plan and financial projections).
- The project shows high growth potential owing to the size of the market and the target group.
- The project may generally be planned in all developing or emerging-market countries, with individual limitations owing to political or other risks. Projects in Africa and in LDCs (least developed countries) will be considered preferentially.

Interested companies may deliver their proposals for the co-financing to DEG at any time.

4. Dutch Development Co-operation – Food security and private sector development programme (public-private partnership)

The programme aims to stimulate public/private partnerships of Dutch and local partners within the sphere of food security and private sector development in developing countries. There is one tender round in 2014, closing on 1 December 2014.

Target group

Grants are available to public institutions, businesses, NGOs and knowledge institutions, within a cooperative partnership which encompasses at least one business. The public component in the partnership will, in every case, comprise the Dutch Ministry of Foreign Affairs. Participation by an

NGO is mandatory. Preferably, other public institutions will also form part of the cooperative partnership.

Sub-themes

For food security:

- Improved local/regional availability of affordable and qualitative good food.
- Efficient markets and sustainable chain improvement in local/regional markets.
- Not eligible: projects exclusively aimed at non-food crops

For sustainable entrepreneurship:

- Inclusive business proposals with demonstrable impact on low income groups
- Improvement of female entrepreneurship
- Not eligible: proposals aimed at the financial sector (excluding insurance)

Grant

Maximum 50% of budget with project budget of minimum EURO 2 million. Minimum 25% of project budget must be financed by private enterprise.

5. Norwegian Development Co-operation – Application-Based Support for Private Sector Actors

Activities

The programme is primarily aimed at businesses / commercial companies seeking funding for:

- **Feasibility studies** (maximum 50% of budget with maximum grant of EURO 60,565). Norad primarily covers the costs made in the development country.
- **Preliminary studies** may include market, technology, legislation, etc.
- **Training** related to establishment (maximum 50% of project budget with maximum grant of EURO 60,565). Support can be given to training of local employees for a limited time in connection with establishment, in cases of major expansions or restructuring.
- **Pilot production/demonstration** in connection with private investment projects / business establishment (maximum 50% of total costs with maximum of EURO 121,000). In the starting phase of production in a developing country, there may be doubt on whether the chosen technology is appropriate to the local conditions.

The purpose of the programme is to reduce the risks present before an investment decision is made and to secure the sustainability and feasibility of the investment project.

For companies seeking funding it is important to note the following:

- Some sectors are prioritised (renewable energy, climate and environment-related technology, agriculture, forestry, marine and maritime sector).
- Requirements of at least EURO 1.2 million in turnover for the last year.
- The applicant should normally have, or plan for, an ownership of at least 25% in the established/ planned company.
- The applicant must show a high development effect to be probable.
- Sales and representation offices will not be supported.

Applications can be submitted continuously.

6. Swedish Development Co-operation – Innovation Against Poverty (IAP)

Applicants can be based in any country, but their inclusive business must be in a low-income country (OECD/DAC list). The programme functions as a risk sharing mechanism for sustainable business ventures (commercial companies or market oriented organisations) which have a strong potential to reduce poverty. Companies can be active in all sectors where innovation leads to poverty reduction, from agriculture and infrastructure to health and education.

Grants: Innovations Against Poverty has two parallel application processes:

- **Small grants** (maximum 50% of project costs with maximum of EURO 20,000) for the purpose of exploring an innovation or a new market. The grant can be used for travel and pre-feasibility studies; stakeholder needs assessments, and networking with local organisations. This programme focuses on smaller organisations which have a wealth of good ideas with great potential, but need the support of their business strategy and resources to penetrate new markets.
- **Large grants** (maximum 50% of project costs, in the range of EURO 20,000 – EURO 200,000) for the purpose of undertaking a development project aimed at a product, service, system, business model or a concept ready to be put to market test, or adaptation of existing products to be affordable and accessible by the poor. IAP also seeks to work with larger companies, to help support the development of "inclusive business" models for these markets, which expands opportunities for the poor and disadvantaged in developing countries. Such business models can engage the poor as employees, suppliers, distributors and consumers.

Key criteria: development effects, commercial viability, innovation, cost sharing and additionality.

The process is of a competitive nature, where grants are awarded to the best business plans which meet the criteria of the programme. The programme works with 1-2 tender rounds per year. No tender round has been announced at present.

7. USAID

There are several programmes under USAID that are applicable for Nepal such as:

- Powering Agriculture
- Development Innovation Ventures
- Partnering for Impact
- Partnering to Accelerate Entrepreneurship
- Partnering for Innovation

9. Typical Capital Structure for Agribusinesses

Agribusiness typically utilise debt funding for operational purposes; and equity funding for more strategic and long term initiatives like acquiring land and machinery, expansion, and augmenting senior management bandwidth. This capital preference shapes debt:equity ratio in most agribusinesses across emerging economies as 60 to 70% debt and 30 to 40% equity.

However, due to the difficulty of accessing debt funding in Nepal, equity capital (especially promoters' equity) is typically used for meeting working capital and operational needs as well.

Capital structure is typically 60:40 in agribusinesses, except in MAPs and spices companies that have higher equity components

Capital structure of agribusinesses in Nepal varies across sub-sectors; with seeds, dairy, fruits and tea having greater leverage in their capital structuring; and MAPs and spices having lesser as shown in Table 22[165]. In most agribusinesses, the equity component entailed owner's personal equity or equity sourced from friends and family but not institutional equity.

Table 22: Typical capital structures of agribusinesses across different sub-sectors in Nepal

Sub-sector	Seeds	Dairy	Fruits	MAPs	Spices	Tea
Debt	60% to 70%	60% to 70%	60% to 70%	10% to 30%	10% to 30%	60% to 70%
Equity	30% to 40%	30% to 40%	30% to 40%	70% to 90%	70% to 90%	30% to 40%

Source: Primary interviews conducted by Intellecap in Feb and Mar 2014; data is from a small sample-size and may not apply to the agriculture sector as a whole in some cases. See preface for more details on data limitations and see annexure for list of interviewees.

Overall preference for debt in the sector is low due to high collateralisation

Agribusiness promoters across sub-sectors reported difficulty in accessing bank loans and high collateral requirements of 50% to 150% imposed by banks. This has led to skewed capital structures in some agribusinesses that have not been able to access debt for long term investments such as purchase of fixed assets or working capital requirements. As a result, several promoters preferred equity with longer return horizons (also called "Patient Capital") to debt even for these kinds of expenditures that are typically met by debt financing in other countries.

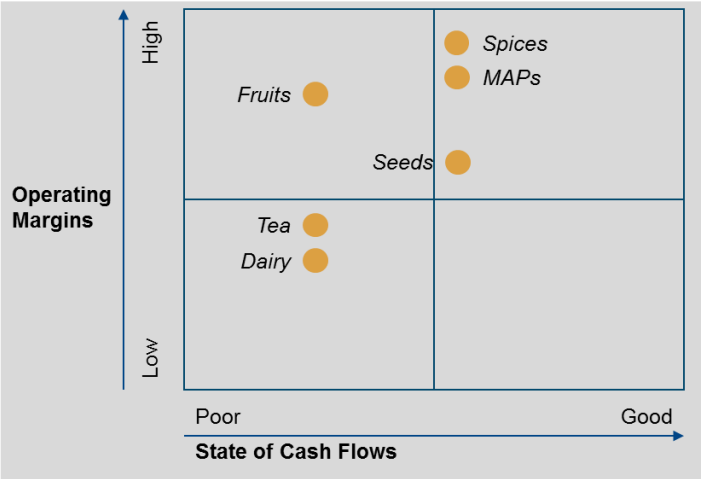
Dairy, Tea and Fruits companies tend to prefer debt while agribusinesses in spices and MAPs sub-sectors prefer equity

Capital preferences vary across different agribusiness sub-sectors as shown in Figure 62. Agribusinesses operating in the tea have lower margins as well as cash flow issues related to accounts payable/receivable cycles with traders and exporters. Agribusiness in dairy and seeds can have longer accounts receivable cycles than in other sectors as their value chains are completely driven by domestic demand; and distributor or retailer pay-back time periods are long and often unpredictable. These challenges can often drive demand for short term debt and increase overall debt component in their capital structures.

[165] Section 5.3.2 has detailed analysis on the inefficiencies this type of capital structuring creates in valuation

On the other hand businesses in spices and MAPs industries do face cash flow issues but to a lesser degree, and their higher margins allow them to finance operations and growth out of firm profits.

Figure 62: Typical operating margins and cash flows across different agribusiness sectors



Source: Intellecap analysis, 2014

Promoters who prefer institutional equity often do so for strategic reasons like market linkages, enhancing management capacities and accessing better technology

Agribusiness promoters in seeds, dairy and tea sectors prefer debt, while promoters in fruits, MAPs, and spices seem to prefer equity. Not surprisingly, even amongst promoters who prefer equity – the preference for domestic or foreign investors varied based of awareness levels of promoters. More savvy promoters seemed to prefer foreign equity for the "non-financial" value-add it created; and sought expertise, market linkages, access to international markets and technology as key contributions expected from an equity investor as shown in Figure 63.

Figure 63: Typical agribusiness promoter preferences in capital structures

Sub-sectors	Seed	Dairy	Fruits	MAPs	Spices	Tea
Preferences for type of external funding						
Debt	◑	●	○	○	○	●
Domestic equity	◑	◑	◑	◑	◑	○
Foreign equity	◑	◑	◑	◑	◑	○
Key contributions expected from an equity investor						
Managerial and strategic expertise	◑	○	○	●	◑	○
Building new market linkages	●	●	●	●	●	●
Help to access international growth opportunities	○	○	●	●	●	●
Adding financial value only	◑	◑	◑	◑	◑	○
Help to unlock promoter capital by dilution	○	○	○	○	○	○

● High
◑ Moderate
○ Low

Source: Primary interviews conducted during the course of this study in February 2014

10. Valuation Trends in Agribusinesses

Enterprise valuation in Nepal can often be challenging because – (a) there is limited historical data; (b) there is a lack of adequate industry benchmarks, and (c) the use of comparable data from SAARC countries is only partially adequate.

There is little public information available on past equity investments into agribusinesses in Nepal. The lack of data is primarily due to infancy of the investment value chain and support infrastructure such as research and ratings. Further, sparse research coverage of capital markets in Nepal has resulted in limited availability of historical data and limited access to updated industry benchmarks.

However, the investment landscape is witnessing brisk activity, with 2-3 institutional investment funds setup over the last three years. The status of investment landscape presents an opportunity for early entrants into the venture capital space in Nepal to make investments at lucrative valuations.

In absence of adequate industry benchmarks relevant proxy, comparable data and hurdle rate methods may be used to guide valuation

Since adequate industry benchmarks from Nepal are not easy to access; **valuation data from comparable** countries like India, Sri Lanka, Bangladesh and Pakistan may be used as broad guides by investors. These countries are comparable because they are agrarian economies, and agribusinesses in these countries face some common systemic challenges like fragmented landholdings, insufficient irrigation infrastructure, low use of agri-inputs and mechanisation, and lower yields. At the same time, countries like India have much higher market capitalisation and better investment value chains. Hence, even though some comparable valuation ratios can be used from these countries, they can at best be broad guides since the regulatory regimes, banking infrastructure, market capitalisation and other macro-economic indicators vary widely from country to country.

In absence of consistent data on valuation ratios in the sector, **hurdle rate** can also serve a good indicator of minimum expected return from investments in the sector. The two benchmark rates considered for the analysis include (a) Cost of Equity and (b) Weighted Average Cost of Capital (WACC) for a given financing mix of equity and debt.

10.1 Comparable Valuations in India and SAARC Countries

Valuation multiples from comparable countries like India, Bangladesh, Sri Lanka and Pakistan may be used as broad indicators by investors evaluating opportunities in agribusiness as shown in Table 23. Data from comparable countries has been used due to inadequacy of public data on valuation trends in Nepal. Countries like India, Bangladesh, Sri Lanka, and Pakistan are found to comparable because – (b) they are agrarian economies like Nepal; (b) agribusiness need to tackle many of the systemic challenges in agriculture that Nepal faces; and (c) consumer profiles are similar with large low to mid-income populations that are driving growth of agribusinesses.

Table 23: Median valuation multiples for some listed agribusinesses from SAARC countries

Sub-Sector	ROE %	EV/ EBIDTA	EV/Sales	PBV
Spices	11.1%	5.3x	0.68x	0.76x

Sub-Sector	ROE %	EV/ EBIDTA	EV/Sales	PBV
Tea	9.15%	6.53x	0.55x	0.63x
MAPs	9.8%	-	2.06x	4.12x
Fruits Processing	7.93%	10x	2.16x	0.7x
Seeds	42%	15.92x	0.94x	2.1x
Dairy	10%	2.33x	0.48x	0.92x

Source: Data for valuation multiples is based on median values calculated from financial statements of publically traded companies in India, Bangladesh, Sri Lanka, and Pakistan. Information on financial statements was accessed from Capital IQ, Bloomberg and MoneyControl databases in March 2014. Please see Section 11.5.3 in Annexure for a long list of all companies considered in calculating valuation multiple medians.

Note: Due to limited size of sample set, this should only be taken as a broad guide to valuation multiple ranges. Specific valuation multiples may differ significantly from company to company.

10.2 Estimating Hurdle Rate for Agribusinesses in Nepal

Hurdle rate is proposed as an indicator of minimum expected return from investments in agriculture sub-sectors

In absence of consistent data on valuation ratios in the sector, hurdle rate can serve a good indicator of minimum expected return from investments in the sector. The two benchmark rates considered for the analysis include (a) Cost of Equity and (b) Weighted Average Cost of Capital (WACC) for a given financing mix of equity and debt. Finance literature offers multiple methods of calculating the hurdle rates; the current report uses the Damodaran Model (refer to annexure). As Nepal's investment value chain is in early stages of its development, investors may seek premium for illiquidity and size of the investments.

Estimated Cost of Equity in different agribusiness sub-sectors ranges from 20 to 34%

Based on the data from the sector and comparable proxies, the Cost of Equity for investments in agribusiness is estimated to vary from 20% to 33% across sub-sectors and Weighted Average Cost of Capital is estimated to be 14% to 21%. The key assumptions for the estimations are listed in Table 24 and ranges for Cost of Equity are presented in Table 25.

Table 24: Key assumptions taken to calculate WACC in agribusiness

Parameter	Assumptions
Market value of Debt (D)	The capital structure of agribusinesses varies across sub-sectors, and the data for debt component presented in Table 22 has been used.
Market Value of Equity (E)	The capital structure of agribusinesses varies across sub-sectors, and the data for equity component presented in Table 22 has been taken.

Parameter	Assumptions
Tax rate	Corporate tax rate of 25% has been taken[166]
Cost of debt in Nepal	The data from major banks in Nepal such as SBI Nepal and Bank of Kathmandu has been utilised to obtain the cost of debt. The range of cost of debt has been taken at 10% to 13% depending on agribusiness sub-sector.
Risk Free Rate	Taken at 9% based on the bond rates reported by Nepal Rastra Bank
Beta estimation	• Beta for different agribusiness sub-sectors in frontier markets has been estimated to be in the range of 0.45 to 0.55 based on data analysed from comparable geographies • The beta has been levered using Debt equity ratio for agribusinesses in Nepal as reported by promoters during primary studies. The levered beta is in the range of
Market Risk Premium (Rm)	The market risk premium ranges from 13.66% to 16.25%[167]

Table 25: Cost of Equity across different agri sub-sectors

	Spices	Tea	MAPs	Fruits	Seeds	Dairy
Cost of Equity (min)	19%	26%	20%	25%	26%	26%
Cost of Equity (max)	23%	33%	24%	31%	33%	33%

Source: Intellecap analysis, 2014

Two clear trends in cost of equity stand out – (a) Agribusiness in Spices and MAPs trade at a lower premium due to lesser degree of business model and systemic challenges coupled with high value of raw, unprocessed produce; and (b) Agribusinesses in seeds, dairy, tea and fruits trade at a higher premium due to business model and systemic challenges.

Agribusiness in Spices and MAPs trade at a lower premium due to lesser degree of business model and systemic challenges coupled with high value of raw, unprocessed produce.

Firms in the Spices and MAPs sub-sectors are estimated to trade at Cost of Equity of 19% to 23%, and 20% to 24% respectively. They have a lower degree of business model and systemic challenges than seeds, dairy, fruits and tea. The value chains in these industries are more efficient, and while government taxes and royalties are high, the state is not a value-chain actor but plays the role of a facilitator. Though both sub-sectors still have significant challenges that they need to tackle for greater commercialisation; the inherent high value of raw spices and MAPs ensures high revenues and margins which helps to offset some challenges. The international demand in these sub-sectors is higher than in others as shown in Figure 15 and Figure 19, and Nepal has a significant share of global trade. As a result of these factors, the cost of equity in spices and MAPs is comparatively low.

[166] Inland Revenue Department, Nepal statistics
[167] See calculations in annexure

However, for long term growth and higher returns, promoters in these sub-sectors can benefit by mitigating some key challenges and risks. The biggest challenge is that most firms add little or no value to end-product in terms of processing, and are can broadly be thought of as "bulk traders". This creates little or no distinction between firms, and also results in highest margins for foreign spices and MAPs processors that buy from Nepalese spices and MAPs industry. Promoters who invest in technology and processing to create retail-ready end products; as well as in brand-building could potentially create lucrative businesses that provide high returns to all shareholders.

Agribusinesses in seeds, dairy, tea and fruits trade at a higher premium due to business model and systemic challenges

Companies in the **seeds sub-sector** are expected to trade at 26% to 33% Cost of Equity. Seed companies can trade at a discount to the maximum range of Cost of Equity by diversification into different types of seeds (especially hybrid seeds and cereal seeds) and geographical locations, investing in building brand value, investing in distribution networks, bringing in technology through partnerships or JVs with foreign firms and maintaining price advantage, and making more investments in R&D.

However, businesses that do not take specific measures to tackle prevalent issues in the sector are likely to closer to the maximum range of Cost of Equity. Some of these issues include low storage and processing capacity, high degree of product and geography concentration, low degree of diversification, very little activity in brand building and distribution network building, and threat of competition coupled with low degree of "uniqueness" in business models. In addition to these, systemic challenges plaguing the industry include low resilience to drought and adverse weather, inadequate quality assurance infrastructure in the country, low rate of seed replacement (especially in cereal seeds), and participation of the government as a value-chain actor instead of being just a facilitator.

Agribusinesses in the **dairy sub-sector** are also likely to trade at Cost of Equity of 26% to 33%. Businesses are more likely to trade at a discount to the maximum range if they diversify into processed milk products; make strategic investments in backward linkages for milk procurement and storage; create a transparent incentive system for MCCs/distributors; and invest in technology and processes for milk quality assessment and certification.

On the other hand, dairy businesses that do not take these measures are more likely to trade closer to the maximum range of Cost of Equity. They can be adversely impacted by several challenges that face the sub-sector in terms of value chain inefficiencies. For instance, milk production and collection is largely done by cooperatives which in turn supply to private dairies. Very few private dairies have invested in backward integration and in building relationships directly with farmers. This places undue power in the hands of cooperatives and low predictability of procurement for private dairies. Hence most private dairies operate at 50% capacity utilisation which has an impact on revenues and profitability. Further, the incentive structures for distributors downstream of private dairies are also inefficient due to the policy of milk buy-back[168]. In addition to these value chain inefficiencies, there are also business-model related challenges like low component of processed milk products in overall portfolio and low use of modern technology. The dairy sub-sector also faces regulatory issues due to participation of the government as a value-chain actor instead of being just a facilitator.

These challenges add a significant degree of risk to business viability and growth, create pressures on margins, and lengthen horizons of returns for investors. As a result, the cost of equity is higher in dairy.

[168] See Section 3.1.2 for details

Agribusinesses in the **fruits sub-sector** are expected to trade at Cost of Equity ranging from 25% to 31%. Fruits processing industries can trade at a discount to the maximum range by investing in strategic partnerships with large farms and aggregators of fruits and incentivising them to meet fruit industry standards. Firms can also explore models like leased farming for ensuring predictability in procurement. Diversifying the product range and increasing distribution to newer peri-urban cities and larger towns will also benefit firms; as will investments in technology and processes for quality certification and longer shelf life of products.

Businesses that do not take these measures are more likely to trade closer to the maximum range due to several challenges that plague the fruits sub-sector. The biggest challenge is in procurement of raw materials from Nepal, which forces industries to import over 50% of raw materials from other countries. It is difficult for these industries to procure fruits according to standard specifications for product uniformity – which is in turn driven by fragmented nature of fruit farming, low awareness amongst farmers, and lack of a centralised fruit grading mechanism. Octroi charges of transporting produce from farm to factory are high as well; and the input costs of processing and packaging are also high due to import-reliance. The seasonality of fruit product and lack of cold storage is also another significant challenge. There is also inadequate quality assurance mechanism and this has caused some isolated incidents in the past where spoilt juice was retailed, and customer trust was impacted negatively.

The **tea sub-sector** is expected to trade at Cost of Equity of 26% to 33%. Agribusinesses in this sub-sector can trade at a discount to the maximum range by diversifying product range to include "premium" varieties like organic, flavoured or blended, and white and green tea. This would act as a temporary measure to increase firm revenues while more long-term measures to increase production of tea are put in place. Other strategies include building a distinct brand in international market and use of technology and improved approaches to harvesting so that highest quality end-product is assured.

Firms that do not take these measures are more likely to trade closer to the maximum range of Cost of Equity due to two-fold challenge of insufficient production and outdated processing technology in tea industry. Tea production has been nearly stagnant for the past 3-4 years, while domestic and international demand has been growing[169]. Further, tea which is processed in Orthodox manner has more value and is a key export commodity. Since firms have not invested sufficiently in technology and processes, the end-product is often of mixed nature and has lower market value.

Cost of Equity and leverage are considered together to estimate the Weighted Average Cost of Capital (WACC)[170] using the formulae shown in Table 26.

Table 26: Estimated hurdle rate for agribusinesses in Nepal

	Spices	Tea	MAPs	Fruits	Seeds	Dairy
D/E	0.25	1.5	0.25	1.5	1.5	1.5
Beta Unlevered (min)	0.6	0.6	0.7	0.6	0.6	0.6
Beta Unlevered (max)	0.7	0.7	0.8	0.65	0.7	0.7
Beta Levered (min)	0.71	1.28	0.83	1.17	1.28	1.28

[169] See Section 3.1.6 for details
[170] See Section 7.2 for details on calculation of hurdle rate

	Spices	Tea	MAPs	Fruits	Seeds	Dairy
Beta Levered (max)	0.83	1.49	0.95	1.38	1.49	1.49
Total Equity Risk Premium	13 to 16%	13 to 16%	13 to 16%	13 to 16%	13 to 16%	13 to 16%
Risk Free Rate (min)	9%	9%	9%	9%	9%	9%
Risk Free Rate (max)	9%	9%	9%	9%	9%	9%
Cost of Equity (min)	19%	26%	20%	25%	26%	26%
Cost of Equity (max)	23%	33%	24%	31%	33%	33%
Cost of Debt (min)	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%
Cost of Debt (max)	13%	13%	13%	13%	13%	13%
Tax Rate	25%	25%	25%	25%	25%	25%
Weighted Average Cost of Capital (min)	16%	15%	18%	14%	15%	15%
Weighted Average Cost of Capital (max)	20%	19%	21%	18%	19%	19%

Source: Intellecap analysis, 2014

Spices and MAPs companies have disproportionately high component of equity in their capital structures that leads to higher WACC

Due to higher revenues and margins, most spices and MAPs companies rely on owners' equity to seed and grow the business; and typically have D/E ratios of 0.25 or even lower. Since equity is more expensive than debt; this creates inefficient capital structures leading to higher WACC. Promoters in these sub-sectors who are looking to raise external equity can mitigate this challenge by increasing the debt component in their business ahead of raising equity. The increased leverage will bring down WACC, and since cost of equity is already lower as presented in Table 26; such businesses could potentially become more lucrative for investors than businesses in other agri-sectors or underleveraged spice and MAPs businesses.

10.3 Non-Financial Metrics used in Valuation

Valuation of agribusinesses especially in frontier markets and less established sectors must take into account both quantitative and qualitative indicators of firm value. These include "Agribusiness-level" criteria and "macro-economic and market-level" criteria. A snapshot of key valuation drivers grouped by these two categories is represented in Table 27.

Table 27: Valuation drivers for agricultural businesses in Nepal

Agribusiness-Level Drivers
Internal Drivers
1. Management team (Governance and capacities)
2. Strength of operational model – margins, scalability
3. USP
4. Market for product/service
5. Geographic location in Nepal
6. Market linkages with customers, suppliers
7. Collateral and securities
External Drivers
8. Regulation – sector-level policies, legal structures, taxation
9. Infrastructure like roads, power, irrigation
10. Level of organised activity in market
Macro-Economic and Market-Level Drivers
12. Political stability
13. FDI policies
14. Inflation

Source: Primary interviews and Intellecap analysis; 2014

The most important non-financial metrics for valuation of agribusinesses are strength of management team, robustness of operational model, size of market opportunity, and value chain efficiencies

A small group of early stage equity investors from India were asked to evaluate the relative importance of these valuation drivers to understand investor sentiment on this issue. Not surprisingly, investors rated management team, strength of operational model, backward and forward-linkages in the value chain, and market for product/service as most critical aspects of an agribusiness and favourable metrics against these were likely to drive up valuation. More "systemic issues" like regulation issues, exit opportunities, and inflation were not considered very critical and investors were likely to make more concessions here unless there was a direct impact on revenues and profitability. Table 10 shows a "high", "moderate", and "low" sorting of these criteria.

Table 28: Investor Sentiment on Valuation Drivers in agribusiness

Valuation Drivers	Investor Sentiment on Relative Importance		
	High	Moderate	Low
SME-Level Drivers: Internal			
Management team (Governance and capacities)	✓		
Strength of operational model – margins, scalability	✓		
USP		✓	

Valuation Drivers	Investor Sentiment on Relative Importance		
	High	Moderate	Low
Market for product/service	✓		
Geographic location		✓	
Value-chain with suppliers, wholesalers, retailers, traders and others	✓		
Collateral and securities			✓
SME-Level Drivers: External			
Regulation – sector-level policies, legal structures, taxation		✓	
Infrastructure like roads, power, irrigation		✓	
Level of organised activity in market		✓	
Exit opportunities – like secondary sale, promoter buy back and IPO		✓	
Macro-Economic and Market-Level Drivers			
Political stability		✓	
FDI policies		✓	
Inflation			✓

Source: Primary interviews and Intellecap analysis; 2014.
Note: A rating of "high" indicates that investors do not compromise on these drivers, of "moderate" indicates that they sometimes compromise if all other critical drivers seem favourable, and "low" indicates that investors compromise almost always because they expect these drivers to improve in the short-to-mid-term.

1. Management team and governance

Quality and experience of the management team is the most critical aspect for private equity investors since they are mostly betting on the team's ability to turn a business plan into a profitable venture. This is especially true in Nepal where the larger supporting environment for Businesses is missing; and the ingenuity, networks and skills of founding team members are called upon to bridge this gap. Presence of a 2-3 person management team with diverse skillsets including managerial track record, expertise in sector and technical know-how will help to drive up valuation.

Governance and accountability practises of the management team are critical as well; especially where there is a large field staff or cash-based activities like procurement from individual farmers involved. Good governance practises like maintaining audited financials, good book-keeping, and presence of a few external and well-reputed individuals on the Board of Director or Advisors help to drive up valuation.

2. Strength of operational model

The strength of operating level cash flows help to determine financial state of an agribusiness, and investors analyse these to estimate the predictability of revenue. Some indicators of operational efficiency include strength of order book, profiles of key customer groups, and long term partnerships with suppliers, traders and retailers. Predictable revenue that sufficiently covers operational costs and services debt is usually the indicator of an operationally efficient business. A good order book also serves to give confidence in the agribusiness' revenue projections – in turn driving up valuation. A diversified customer-base with small ticket and big ticket buyers as well as long-term purchase agreements with buyer-groups will also support increased valuation.

Private equity investors generally do not prefer to invest in agribusinesses with linear cost structures with heavy capital expenditure or high field staff related costs that grow at the same rate as revenues. Hence, evaluating the cost structure carefully under a variety of changing external circumstances and scale of operations plays a key role in driving valuation.

3. Unique Selling Proposition (USP) for the end customer

The end customers for investible agribusinesses vary from smallholders and cooperatives for seed companies to wholesale and retail buyers for dairy and fruit processing businesses. A well-defined USP is needed since a large portion of agri-commodities move through informal and unorganised value chains, where the end product might reach the customer at a cheaper price or through more familiar channels. Agribusinesses may also need to compete with government-subsidised goods in sub-sectors like dairy and seeds; where a recognisable brand that is dependable, aspirational and priced well may drive consumer purchase behaviour in favour of an agribusiness.

4. Market for product or service

While agribusiness consumer base in Nepal is quite large; the addressable market can often be limited due to the fragmented nature of the market. For instance, in the dairy sector only 10% of the total milk produced flows through organised sector dairies. Hence, it is useful for investors to understand the addressable market size for an agribusiness' product or service; as well as the channels that the agribusiness uses to reach this market. Well defined addressable market and clarity on channels drive up valuation.

5. Geographic location in Nepal

Operational efficiency of agribusinesses is linked to a delicate balance between proximity to production centres in the Terai or Hill districts and consumption centres in the Kathmandu Valley. This is because cost of logistics and warehousing are prohibitive and often the warehousing infrastructure is inadequate. In fact, cost of post-harvest logistics, warehousing and processing can vary from 45% to over 100% of the commodity's procurement cost (at the farm)[171]. Optimal geographic location or an agribusiness' strategies to mitigate location-related risks will drive up valuation.

6. Efficient value chain linkages

Value chain linkages are critical for agribusinesses for predictable procurement of raw material at optimal prices. Strategies to ensure this such as partnerships with aggregators of raw materials; and financial and non-financial incentives to win farmer/collector loyalty can help to secure procurement channels. Further, partnerships with actors that are further downstream in the value chain such as wholesalers and retailers are important as well. In the case of Nepal, same wholesalers and retailers

[171] Intellecap analysis from primary interview and field studies done in March 2014

market products from many agribusinesses, and therefore incentives for them to market a specific agribusiness' products must be put in place.

At the same time, it is important for these incentives to be well thought-out – for instance in the case of dairy industry the policy of buying back unsold milk from retailers actually creates perverse incentives and places too much power in the hands of retailers. Good value-chain linkages drive up agribusiness valuation, and many investors interviewed in the course of this project stated that they found this was one of the biggest differentiators between a fast-growing firm and a stagnant firm.

7. Collateral and securities

The availability of collateral and securities with an agribusiness helps to gauge financial health, and also services to mitigate risks for an equity investor. Securities like debt funding and owner's equity can contribute to driving up a firm's valuation; while collateral in addition to this direct influence is also a signal to the equity investor that the agribusiness can raise debt financing to grow. This is especially critical for agribusiness in spices and MAPs sub-sectors that are almost entirely financed by equity and can bring in debt element for better valuation.

8. Regulation – sector-level policies, legal structures, taxation

Facilitative government policies like encouraging FDI and ease of doing business increase agribusiness valuation, while inhibitory policies like cap on prices and subsidies that distort markets decrease valuation. Figure 29 shows the current impact of different government regulations on enterprise value and operations. The current regulatory regime is likely to drive up valuations in tea, spices, and MAPs sub-sectors and either decrease or have little impact on valuations in fruits, seeds, and dairy sub-sectors.

9. Infrastructure like roads, power, irrigation

Availability of infrastructure like road networks, power supply, banking facilities etc. also impact valuation of agribusiness; albeit to a different degree across sub-sectors as shown in Figure 64. For instance, dairy and fruit sectors have a critical dependency on cold storage, which in turn depends on scarcely available power supply – such a dependency could drive down valuation. If such a business is located in an area where the power grid is particularly supply-stressed that has an even greater negative impact on valuation. Figure 28 shows a matrix of dependencies of different high potential business models on various types of infrastructure.

Figure 64: Impact of Infrastructure on Agriculture SME Valuation

High potential Business Models	Direct Impact of Infrastructure on Business Valuation				
	Roads	Power	Irrigation	Banking	Telecom
Seeds	●	●	●	◑	○
Dairy	●	●	○	◑	◑
Fruits	●	●	◑	◑	◑
MAPs	●	●	○	◑	◑
Spices	●	●	○	◑	○
Tea	●	●	●	◑	○

● High
◑ Moderate
○ Low

Source: Primary interviews and Intellecap analysis; 2014

10. Level of organised activity in market

Organised formal sector markets are typically indicators of efficient value chains. They benefit a firm's operations by decreasing costs, making market access easier, and helping to build consumer awareness. Agribusinesses in more organised markets like dairy, MAPs and spices may see higher valuations due to this driver

11. Exit opportunities – like secondary sale, promoter buy back and IPO

Clarity on potential exit opportunities is important as well. The secondary sale value-chain in Nepal is underdeveloped[172] so the only two strong possibilities that investors have are promoter buy-back and IPO. Thus far, no publically available track-record of secondary exits is available, and early entrants in the private equity investing space in Nepal may have to plan for longer investment time-period than in more mature markets. This could drive down valuations due to higher risk perceptions, especially in sub-sectors like seed and dairy which are solely driven by domestic demand and hence have the risk of geography concentration.

12. Political stability

Confidence in the macroeconomic environment and political stability drives up firm valuations as it gives financiers confidence that the business environment for their portfolio will remain reasonably conducive, and at the same time their investment will be protected. Since Nepal has only regained political stability over the past 6-7 years, investors are likely to attach greater risk premium to opportunities they evaluate as explained in Table 26.

13. FDI policies

Long-term regulatory stability around FDI policies is likely to drive investments at greater valuation since investors can be confident that they will have the freedom to exit a business when its most lucrative for them. The recent decision by NRB to disallow FDI in commercial banking and on-going discussions around disallowing FDI in seeds sector could potentially drive investors to attaching a higher risk premium. However, on the flipside the government and regulator have stated their

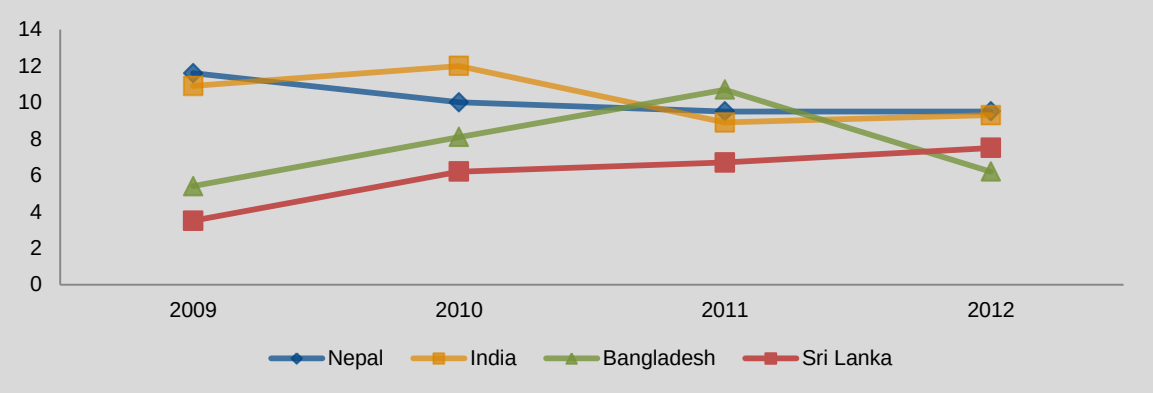
[172] See Section 5.4 for details

intention to support greater FDI inflows, and in a March 2014 address, NRB Governor indicated that domestic banks and financial institutions are able to provide supplementary capital to foreign investors. Approaches like this would give more confidence to investors and drive up valuations.

14. Inflation

Nepal reported an inflation rate of 9.72% in January 2014, and both the current rate of inflation as well as historic trends compare unfavourably to other SAARC countries as shown in Figure 65. This degree of inflation could potentially decrease value of earnings for investors and in turn reduce the P/E ratio. In order to build a cushion against this, investor may consider addition risk premium and this may in turn drive down valuations.

Figure 65: Comparison of inflation rate (%) in Nepal with selected SAARC countries



Source: World Bank Development Indicators database, accessed in March 2014

11. Annexure

11.1 Demand and Supply Assessment Methodology

Demand assessment was done using per capita estimates and indicators like import and export trends across different sub-sectors, mostly relying on secondary data from MoAD and FAO

- In sub-sectors which rely on domestic demand such as dairy and seeds, demand assessment was done based on per capita demand of such products reported in Nepal by various research reports. This data was benchmarked against per capita demand in neighbouring countries like India, Bangladesh and Sri Lanka.
- In sub-sectors that rely on domestic demand but are underserved by domestic industries such as processed MAPs; import quantities were taken to be indicators of demand.
- In sub-sectors that have both domestic and international demand like fruits processing and tea, demand was estimated using both per capita and import indicators to arrive at a range.
- Finally, in sub-sectors that were driven primarily by international demand such as raw and unprocessed MAPs and spices, export trends were taken as indicators of demand.

Supply assessment was done based on farm-level production and processing outputs, using a combination of secondary data from MoAD and FAO and primary data from agribusinesses

- Trends in farm-level production across crops, livestock and MAPs were based on data reported by MoAD Yearbooks. Where data was not available from MoAD, FAOSTAT was used as a source of information
- Processing and packaging capacities on the supply-side were estimated based on primary interviews with organisations listed in Table 33. This data was further validated by various sub-sector reports published by FAO, FNCCI, Ministry of Industries and MoAD
- In sub-sectors where domestic industries were absent, such as agrochemicals and mechanisation; import indicators were used to estimate supply

11.2 Market Opportunity Assessment Methodology

Table 29: Methodology for assessment of market opportunity

Sub-Sector	Brief description of approach used	Estimated market opportunity
Improved seeds	Seed consumption in 2010 as reported by National Seed Vision 2013 – 2025 is 37,320 mt; Financial value of seed purchase assumed based on retail prices reported by NSCL as ~ US$ 350 per mt of improved wheat seeds	US$ 10 to 15 million

Sub-Sector	Brief description of approach used	Estimated market opportunity
Fruits processing	Per capita consumption of fruit in Nepal is reported as 15.6 kg by Joshi, Gulati and Cummings, 2007. Assuming that up to 30% of this consumption can be in the form of processed juices, pulps, dried fruits and jams gives a consumption of 0.2 to 0.25 million mt[173]. Financial value of processed fruit products estimated based on average price of 1kg of processed juice in Kathmandu	US$ 230 to 260 million
Tea processing	• Estimated based on reported production for CTC tea (which is consumed locally) and Orthodox tea (which is primarily exported) • Financial value for CTC estimated based on average selling price for 1kg in Kathmandu City • Financial value for Orthodox tea estimated based on average international selling price of branded Nepalese Orthodox tea (comparable to Darjeeling tea prices)	US$ 200 to 230 million
Spices processing	• Estimated based on production of cardamom, ginger, garlic, chilli, turmeric and other spices for domestic and international markets • Financial value for domestic market estimated based on prices reported by Market Information Service, Nepal and international market estimated based on data from Trade and Export Promotion Centre, Nepal	US$ 720 to 750 million
Dairy processing	• *Organised-supply based:* Calculated based on the fact 10% or US$ 57 million worth of milk in Nepal moves through organised dairies; and that US$ 11 million worth of dairy products are imported into Nepal each year. This adds up to an addressable market opportunity of nearly US$ 70 million. • *Demand-based:* Calculated based on annual per-capita consumption of milk in Nepal i.e. 49 kg[174] and milk purchase value from Central Bureau of Statistics 2012 price data. Total financial value of demand is US$ 519 million; of this assuming that 10% is catered to by organised sector; the addressable market size is US$ 51.9 million	US$ 50 to 70 million
Processed MAPs	Calculated based on import value of processed herbs in the form of medicinal and cosmetic products in 2012 since local processing and supply is negligible. Data on import value sourced from Import-Export Promotion Centre Database	US$ 90 to 110 million

[173] The per capita juice consumption we arrive at (5-6 litres) is comparable to India as per reports from Ministry of Food Processing Industries, Government of India.
[174] Food and Agricultural Organisation; 2005

11.3 Calculation of Hurdle Rate

Cost of Equity and leverage are considered together to estimate the Weighted Average Cost of Capital (WACC) using the formulae shown in Figure 66 and Figure 67.

Figure 66: Formula for calculating WACC

$$WACC = \frac{D}{D+E} \times (1\text{-tax rate}) \times Kd + Ke \times \frac{E}{D+E}$$

Where -

D: Market value of Debt, **E:** Market Value of Equity, **Tax rate:** corporate tax rate in Nepal, **Kd:** Cost of debt in Nepal, **Ke:** Cost of equity calculated by the formula:

Figure 67: Formula for calculating cost of equity

$$Ke = Rf + ß \times (Rm - Rf)$$

Where –

Rf: Risk free rate (treasury bond rate), **ß:** Predicted equity beta, **Rm:** Market risk premium

Cost of preferred stock has not been included while calculating WACC as the capital market information on the same was not available in Nepal. The key assumptions made while calculating WACC for agribusinesses in Nepal are shown in Table 26.

The following methodology has been used to assess Market Risk Premium and Hurdle rate:

- Current risk premium was taken for a mature equity market at 5%
- No shadow rating is given by Moody's or S&P for Nepal. Based on ratings given by IFC at CCC+ (CAA1 in Moody's) the default spread is 7.5%. This has been multiplied by volatility factor of 1.5 for frontier markets to reach country risk premium of 11.25 % for Nepal. This is done because equity markets are about 1.5 times more volatile than bond markets.
- Alternately we can calculate country risk premium using volatility of stock markets.
  *Default Spread= US bond rate * (σ Nepal Stock/ σ US Stock)*
- US bond rate is taken as 5% and 5 years standard deviation of Nepal Stock was calculated using stock market data and comes out to be 219. The corresponding 5 years standard deviation of US Stock market comes out to be 190. Utilising this data default spread has been estimated is 5.77%. This has been multiplied by volatility factor of 1.5 for frontier markets to reach country risk premium of 8.66 % for Nepal.
- We take minimum and maximum values obtained from both methods to get a range of Total Equity risk premium to be 13.66% to 16.75%.

- Through our primary research, we found that the average D/E ratio for agribusinesses varies from sub-sector to sub-sector as shown in Table 22. The values shown in Table 22 were also benchmarked against comparable countries like India, Bangladesh, Pakistan and Sri Lanka.
- Unlevered Beta for agricultural sub-sector varied from 0.65 to 0.8 across different sub-sectors in comparable countries like India, Bangladesh, Pakistan and Sri Lanka. Hence a conservative estimate assumption across sub-sectors was taken, and further levered using the aforementioned D/E ratio and following formula -

  *β levered = β unlevered * (1 + (1- tax rate) * D/E)*
- The levered beta comes out to be in the range of 0.83 to 1.49 across sub-sectors as shown in Table 26
- The risk free rate can be obtained from major banks in Nepal such as SBI Nepal Rastra Bank and Bank of Kathmandu and comes out to be around 9-10% as yielded by most of the banks on bonds issued.
- Cost of equity can be calculated by using following method-

  Ke = Rf + β (mature market equity risk premium + country risk premium)
- Ke comes out to be in the range of 19 to 34% across different sub-sectors
- Through our primary research in Nepal we found out that most agribusinesses access debt in range of 9.5-13% interest
- WACC or the hurdle rate can then be calculated using the following formula-

  *WACC = E/(D+E) * Ke + D/(E+D) * (1 – tax rate) * Kd*
- WACC comes out to be in the range of 14% to 21% across different sub-sectors

11.4 Investment Markets in Nepal and Impact on SME Valuation

11.4.1 Overview of Capital/Investment Market in Nepal

Role of capital in economic growth for any country is universally accepted and the fluctuations in the index of capital market could be seen as the barometer of economic performance. The capital markets in Nepal are sustained by the shares of banks, financial institutions and insurance companies that contribute to over 75% of the market capitalisation[175]. There is minimum presence of real sector in the capital market in Nepal but off-late there is an increasing presence of hydropower companies on the stock exchange.

The Nepal stock market or NEPSE since its establishment in 1992-93 has seen the number of companies listed in 1994 at 66 to 230 companies in 2013[176]. Despite the increase in the number of listed companies, it is estimated that only 10% of the companies registered on Office of the Company Register are listed on NEPSE[177]. This in turn could indicate that firms in Nepal tend to avoid stock market as an alternative source of long-term capital[178].

Primary capital market in Nepal is quite diversified and securities such as Debentures, Ordinary Share and Right Share are used for training the market place. Out of the total approvals for public issues in 2013 as shown in Table 30; 30 companies got approvals for initial public offering (IPO) of US$ 33.02 million, a substantial increase of over 130% on the amount when compared with the previous year.

[175] Nepal stock exchange website
[176] Nepal stock exchange website
[177] Department of industry, Industrial statistics 2012-13
[178] Stock Market Development and Economic Growth report, Dr. Udaya Raj Regmi, 2012

Political stability and institutional support was considered as the key reason for the spurt of activity in the primary capital markets in Nepal.

Table 30: Primary approval issued by SEBON for the FY 2012/13

S. No	Types of Securities	FY 2012-13		FY 2011-12	
		No of Issues	NRs In Million	No of Issues	NRs In Million
1	Debenture	7	3550	3	1200
2	Ordinary Share	30	3114	15	1298
3	Right Share	5	3939	7	452
	Total	**42**	**10602**	**25**	**2950**

Source: NEPSE Annual report 2012-13;
Note: currency rates shown are in Nepalese Rupee. At the time of writing this report; the exchange rate was 1 US$ = 94.19 Nepalese Rupee.

The general investors in Nepal are still are attracted only toward primary shares. The fact that initial public offering (IPO) is listed many times more than that invited by the companies making IPO in the primary markets but the transactions in the secondary market is very low. This in turn shows the lack of awareness about capital market and trading in general in Nepal.

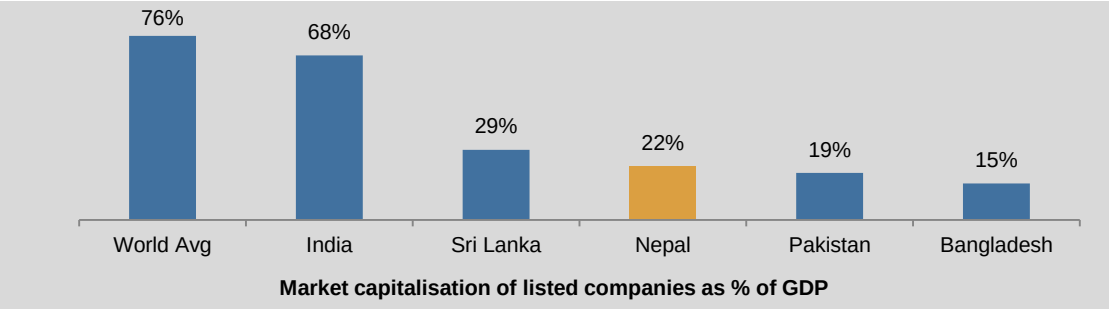
Trading in secondary markets in Nepal is a major challenge due to high trading and transaction costs, long duration of settlements and lack of reliability in the transactions.

11.4.2 Nepal Investment Market Valuation and Key Drivers

The three key parameters to measure the capital market development for Nepal have been discussed briefly below. They are a) Market Capitalisation Ratio (MCR), b) Total Value Traded Ratio (TVTR) and c) Turnover Ratio (TR)

In terms of Market Capitalisation Ratio (MCR), Nepal ranks the third best in the SAARC region after India and Sri Lanka. However the MCR in Nepal is very low in comparison to the world average and India as shown in Figure 68. A lower MCR in Nepal indicates that the stock market is yet to show its impact on the economic activities of the country.

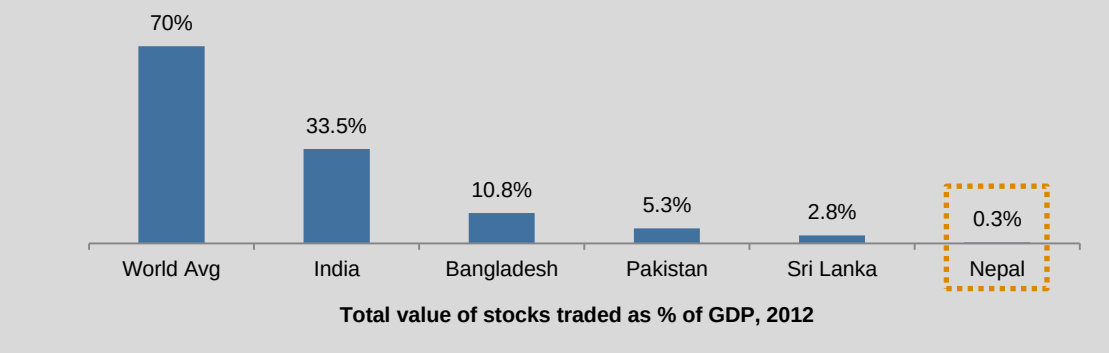
Figure 68: Market Capitalisation Ratio (MCR) for SAARC countries



Source: World Bank Development Indicators database, accessed in March 2014

Total Value Traded Ratio, as a market liquidity indicator, shows that Nepal has one of the lowest values of shares traded in the world when compared to its GDP as shown in Figure 69. This indicates the illiquidity in secondary markets in Nepal and that trading is very costly and difficult. One of the key reasons for increased cost of trading is the reliance on legacy based data systems for trading and absence of an online platform for trading.

Figure 69: Total Value Traded Ratio (as % of GDP) in SAARC countries



Source: World Bank Development Indicators database, accessed in March 2014

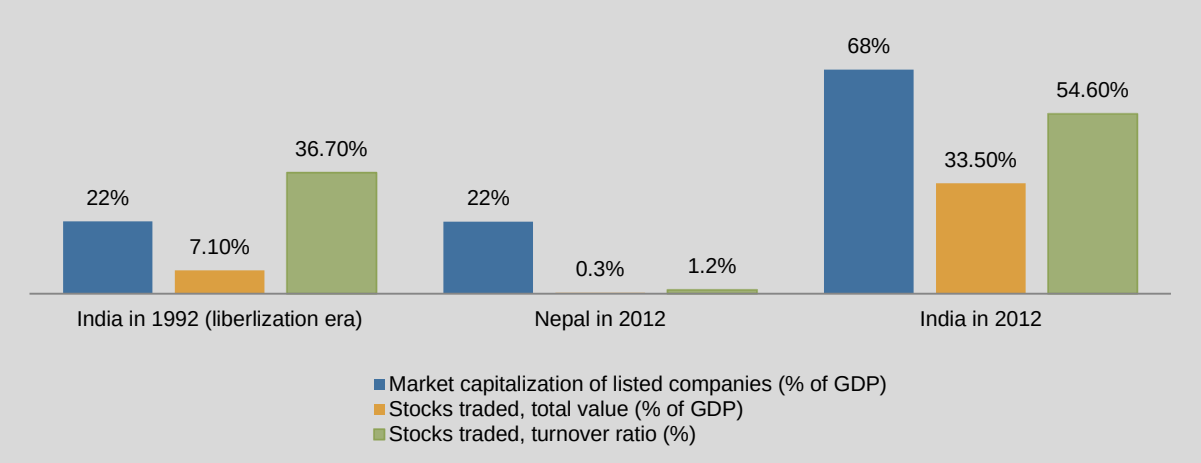
The next measure of stock market development Turnover Ratio shows that Nepal has one of the lowest total values of shares traded to the average market capitalisation as shown in Figure 70. This indicates that trading and transaction costs are high in Nepal and buying and selling of shares in secondary markets is very difficult. Of all the three parameters, there are ample opportunities for Nepal to develop its capital markets fast by increasing turnover ratio even though market capitalisation is very low.

Figure 70: Turnover Ratio in SAARC countries

Source: World Bank Development Indicators database, accessed in March 2014

A comparison with the present stock market development indicators in Nepal with the Indian stock markets just after the liberalisation era in 1991-92 shows some similarity in the two stock markets. India has come a long way on secondary capital markets in the last two decades as shown in Figure 71. Nepal could witness the same pace of growth given the requisite institutional framework and investor friendly eco-system is put in place. Allowing foreign institutional investors to trade in secondary markets in Nepal could put the country on fast track development in capital markets.

Figure 71: Comparison of capital market development in Nepal with India



Data Source: World Bank Development Indicators database, accessed in March 2014

The key drivers that would facilitate the trading volumes in the secondary markets in Nepal are - a) introduction of reliable online trading system making trading affordable b) settlement of transactions to be shortened to a few days from the present duration that could last for few weeks and c) with higher GNIs per capita and increasing literacy levels emergence of a social class that is aware of the benefits of wealth creation through the secondary markets d) an expected long-term political stability would boost the confidence of investors to invest in the capital markets.

11.5 Miscellaneous

11.5.1 Legal Structures for Businesses in Nepal

Table 31: Legal Structures available to Businesses in Nepal

Structure	Description	Implications for financing
Sole Proprietorship	Only 1 shareholder allowed, registered with the Department of Cottage and Small-Scale Industry	Cannot issue shares or debentures and hence cannot take in equity investments
Private Limited (Pvt. Ltd.)	1 to 50 shareholders can register a Pvt. Ltd. company with the Office of the Company Registrar under the Companies Act. A company that intends to trade also needs to register with the Department of Commerce.	Can issue different types of shares and debentures with limited liability to shareholder; and hence is an appropriate structure for equity investments
Public Limited (Ltd.)	At the time of incorporation 7 shareholders can register a Ltd. company, but the actual number of shareholders should exceed 51. Also registered with the Office of the Company Registrar under the Companies Act. A company that intends to trade also needs to register with the Department of Commerce.	Can issue different types of shares and debentures with limited liability to shareholder; and hence is an appropriate structure for equity investments, and can also raise capital from public markets.
Cooperative	Minimum of 25 members can register a Cooperative under the Cooperative Act.	Can issue shares and debentures and net profits are distributed to members after retaining 25%; however dividend cannot exceed 15% of the paid up capital per share. This is a less appropriate legal structure for equity investors expecting a market rate of return.

Source: Ministry of Industries

11.5.2 Glossary of Commonly-Used Terms

Agrochemicals	Chemical-based fertilisers, pesticides, herbicides and weedicides used in farming
Agribusiness	A commercial venture incorporated as a sole proprietorship, private limited or public limited company that operates in the agricultural sector
Agri-commodity	A commodity that can be classified under crops, livestock by-products or MAPs
Agri-inputs	Agrochemicals, seeds, organic fertilisers and other additions used in pre-harvest stage of farming to improve production and yields
Backward linkages	For an agribusiness, backward linkages entail partnerships and alliances with farmers, cooperatives and others who can supply raw materials
Farmer aggregator	An organisation like a cooperative or a trading company that collects or purchases agricultural produce from several individual farmers and acts as a bulk supplier to agribusinesses and larger traders

Forward linkages	For an agribusiness, forward linkages entail partnerships and alliances with traders, wholesalers, retailers and others who can help with distribution and marketing of products
Value addition	Processes like cleaning, packaging and processing that increase the retail value of agri-commodities
Value chain	The continuum of activities leading from farming of an agri-commodity to purchase by an end-consumer is called an agri-value chain

11.5.3 Comparable Valuation Multiples of Agribusinesses from SAARC Countries

Table 32: Comparable Valuation Multiples of Agribusinesses from SAARC Countries

Sub-Sector: Seed						
India						
Company	ROE %	D/E Ratio	P/E	EV/EBITDA	EV/Sales	Market Cap (in US $)
Kaveri Seed Company Limited	46.66%	0.10	17.38	15.92	3.12	410.1
JK Agri Genetics Ltd.	-	1.60	11.14	7.99	0.94	18.5
Genera Agri Corp., Ltd.	-	-	2.55	2.43	0.31	4.43
Omega Ag-Seeds (Punjab) Ltd.	-	0.07	37.44	-	3.89	0.67
Nath Seeds Limited	-	-	64.87	17.38	0.43	0.97
Sub-Sector: Dairy						
Bangladesh						
Company	ROE %	D/E Ratio	P/E	EV/EBITDA	EV/Sales	Market Cap (in US $)
Meghna Condensed Milk Industries Limited	-	-	-	1.43	0.48	1.66
Rangpur Dairy & Food Products Limited	5.91%	0.01	30.48	18.9	3.48	17.1
India						
Company	ROE %	D/E Ratio	P/E	EV/EBITDA	EV/Sales	Market Cap (in US $)
Kwality Limited	-	-	4.82	2.28	0.13	94

Milkfood Ltd.	1.99%	-	57.56	2.33	0.11	7.08
Sri Lanka						
Company	ROE %	D/E Ratio	P/E	EV/EBIT DA	EV/Sales	Market Cap (in US $)
Lanka Milk Foods (CWE) PLC	13.21%	0.09	10.99	13.05	0.89	32.2
Sub-Sector: Fruit Processing						
India						
Company	ROE %	D/E Ratio	P/E	EV/EBIT DA	EV/Sales	Market Cap (in US $)
ANS Industries Limited	-	-	19.5	10	2.55	1.97
Freshtrop Fruits Limited	12.16%	0.21	7.04	3.64	0.33	4.58
Sub-Sector: MAPs						
India						
Company	ROE %	D/E Ratio	P/E	EV/EBIT DA	EV/Sales	Market Cap (in US $)
Source Natural Foods and Herbal Supplements Limited	-	1.03	16.62	13.69	2.06	1.08
Allied Herbals Limited	-	0.02	-	-	-	1.06
Safal Herbs Limited	-	-	16266.7	-	171.23	48.8
Sub-Sector: Spices						
India						
Company	ROE %	D/E Ratio	P/E	EV/EBIT DA	EV/Sales	Market Cap (in US $)
Madhur Industries Ltd	-	-	85.38	-	0.72	1.11
Chordia Food Products Limited	8.53%	0.29	4.06	4	0.5	1.82
NHC Foods Limited	14.78%	0.75	9.53	4.86	0.17	2.83
ADF Foods Limited	13.68%	0.23	7.07	4.7	0.64	18.3
Pakistan						

Company	ROE %	D/E Ratio	P/E	EV/EBITDA	EV/Sales	Market Cap (in US $)
Quice Food Industries Limited	-	-	8.15	5.81	1.53	2.95
National Foods Limited	46.08%	0.59	31.76	20.09	2.62	216.6
Sub-Sector: Tea & Coffee						
Bangladesh						
Company	ROE %	D/E Ratio	P/E	EV/EBITDA	EV/Sales	Market Cap (in US $)
National Tea Company Ltd.	-	0.43	-	-	-	69.6
India						
Company	ROE %	D/E Ratio	P/E	EV/EBITDA	EV/Sales	Market Cap (in US $)
Warren Tea	-	0.01	-	-	-	56
Dhunseri Petrochem & Tea Limited	49.60%	-	3.82	2.03	0.16	70.6
Jay Shree Tea & Industries Ltd.	-	-	5.32	2.07	0.33	43.5
Joonktollee Tea & Industries Limited	-	-	6.65	3.85	0.5	7.85
Peria Karamalai Tea & Produce Co. Ltd.	-	-	23.92	24.22	0.89	6.34
Terai Tea Company Limited	1.59%	0.78	133.75	15.56	1.04	10.7
Asian Tea & Exports Ltd.	-	-	6.61	1.36	0.07	1.85
Diana Tea Company Limited	0.44%	0.27	5.87	9.77	0.74	2.86
Kanco Tea & Industries Limited	11.61%	0.28	2.92	2.82	0.54	2.57
Tyroon Tea Co. Ltd.	-	0.01	3.72	3.48	0.39	1.79
Ledo Tea Company Ltd.	0.28%	0.92	1190	19.72	0.81	1.19
Norben Tea & Exports Ltd.	-	0.14	10	5.18	1.54	1.01
Arcuttipore Tea Co Ltd	-	1.94	-	105.36	1.45	0.4
Tata Coffee Ltd.	11.50%	1.19	13.82	8.01	1.48	295.7
Sri Lanka						

Company	ROE %	D/E Ratio	P/E	EV/EBIT DA	EV/Sales	Market Cap (in US $)
Ceylon Tea Services PLC	14.22%	0.00	9.3	7.73	1.52	105.1
Bogawantalawa Tea Estates Plc	25.19%	1.36	2.13	6.53	0.57	5.89
Tea Smallholder Factories PLC	8.07%	0.09	11.57	7.03	0.44	7.82
Talawakelle Tea Estates PLC.	24.07%	0.53	2.49	2.96	0.4	4.36

11.6 References and Field Research Data

The organisations interviewed during the course of this study have been listed in Table 33.

Table 33: List of primary interviews

Organisation	Sector
Government Bodies and International Organisations	
National Dairy Development Board	Dairy
Stuty Maskey, Multi Stakeholder Forestry Programme (MSFP)	Non-Timber forest produce
SEBON (Securities Board of Nepal)	Sector agnostic
International Finance Corporation	Sector agnostic
Banks and Financial Agencies	
Laxmi Bank	Sector agnostic
Excelling Investment	Sector agnostic
Nabil Invest	Sector agnostic
Non-Governmental Organisations	
Practical Action	Sector agnostic
Private Sector Organisations	
R&D Innovation	Agriculture Research
Organic Village	Herbs and Spices
Nepal Krishi Company	Agriculture general
Pancharatna Feed Pvt Ltd,	Poultry Feeds

Organisation	Sector
ICRA Nepal	Credit Rating Agency
CG Seeds	Seeds
Fleur Himalayan Ltd.	Herbs and Spices
Shree Nagar	Poultry Feed
Kriti Capital	Financial Advisory Services for all sectors
Logistics Association of Nepal	Logistics Services
Rakura Tea	Tea
Kalimati Fruits Market	Fruits

The references used in this study are as follows:

1. Agriculture Development Strategy (ADS) Nepal website, accessed in March 2014
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33. World Bank Development Indicators database, accessed in March 2014
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The survey questionnaires used in this study are as follows:

Agriculture Companies Survey Questionnaire - Generic

Section A. Understanding private sector activity in agriculture

1. Rank the following subsectors from 1 to 8 based on:
    a. Growth potential (with 1 having greatest growth potential and 8 least)
    b. Profit margins (with 1 having highest profit margins and 8 least)
    c. Organised activity (with 1 having most organised activity and 8 least)
    d. Competition from foreign firms (with 1 have most competition and 8 least)

Sub-Sectors	**Rank for Growth Potential (1-8)**	**Rank for profit margins (1-8)**	**Rank for organised activity (1-8)**	**Rank for competition (1-8)**
Seeds				
Poultry feed				
Herbs (medicinal and aromatic plants)				
Vegetables and fruits				
Tea and coffee				
Dairy				
Spices				
Cereals and pulses				
Processed foods				

2. Please select the approximate range of profit margins for companies in each of the following sub-sectors as per your assessment.

Sub-Sectors	**Less than 5%**	**5 to 10%**	**10 to 15%**	**15% to 20%**	**More than 20%**
Seeds	☐	☐	☐	☐	☐
Poultry feed	☐	☐	☐	☐	☐
Herbs (medicinal and aromatic plants)	☐	☐	☐	☐	☐
Vegetables and fruits	☐	☐	☐	☐	☐
Tea and coffee	☐	☐	☐	☐	☐
Dairy	☐	☐	☐	☐	☐
Spices	☐	☐	☐	☐	☐
Cereals and pulses	☐	☐	☐	☐	☐
Processed foods	☐	☐	☐	☐	☐

3. Please mention the approximate annual turnover, production capacity and utilisation of production capacity for companies operating in the following sub-sectors

Sub-Sectors	Approx. annual turnover	Production capacity	% utilisation of production capacity
Seeds			
Poultry feed			
Herbs (medicinal and aromatic plants)			
Vegetables and fruits			
Tea and coffee			
Dairy			
Spices			
Cereals and pulses			
Processed foods			

4. How is the overall policy and regulatory environment? In what ways does it support growth of businesses and in what ways does it negatively impact growth. Please select any of the following that apply

Impact of regulation/policy	Applies to agri-business in Nepal (select all that apply)
a) High upfront setup costs due to licences	☐
b) Difficulty in acquiring land	☐
c) Agri-products compete with subsidised products in the market	☐
d) Regulation requiring banks to lend at lower interest rates to agri-businesses	☐
Any others? – Please explain	

Section B. Understanding Barriers to Growth of Private Agri-Sector Companies

5. Rate the following challenges as “high”, “medium” or “low” based on the degree to which they act as barriers to growth (with “high” ranking indicating a critical growth barrier and “low” a less important growth barrier).

Challenges	High	Medium	Low
Access to Finance	☐	☐	☐
Access to markets	☐	☐	☐
Access to technology	☐	☐	☐
Access to talented employees	☐	☐	☐
Taxation	☐	☐	☐
Regulation	☐	☐	☐
Infrastructure: road, electricity, transport	☐	☐	☐
Corruption	☐	☐	☐

Challenges	High	Medium	Low
Any other challenges you would like to mention?			

Section C. Understanding access and use of capital

6. Which type of capital do agri-sector companies prefer and why? Please rate “high”, “medium”, and “low” (with “high” ranking indicating most preferred and “low” least preferred).

Capital Type	High	Medium	Low
Debt (bank loans, NBFC loans, venture debt)	☐	☐	☐
Domestic Equity (raising money from local investors by selling a stake in your company)	☐	☐	☐
Foreign Equity (raising money from international investors by selling a stake in your company)	☐	☐	☐

Why?

(Please explain your preference for debt/ domestic equity/ foreign equity briefly)

7. Which of the following do you see as the most important contribution by an equity investor? Please rate “high”, “medium”, and “low” (with “high” ranking indicating most important and “low” least important).

Contribution by equity investor	High	Medium	Low
Add expertise to your company	☐	☐	☐
Build new market linkages for your company	☐	☐	☐
Add financial value only	☐	☐	☐
Help to unlock capital for you by divesting or diluting company	☐	☐	☐
Help in accessing international growth opportunities	☐	☐	☐

8. Which of these following financing needs do agri-companies prefer to use debt for and which do they prefer to use equity for? Please tick in the appropriate column

Financing need	Prefer debt	Prefer equity	No Preference
Purchase fixed assets (land, building, machinery)	☐	☐	☐
Extend to new markets	☐	☐	☐
Extend to new geographies	☐	☐	☐
Short term operational expenses (salaries, rent etc.)	☐	☐	☐

9. What is the growth rate that agri-companies can potentially achieve in the next 3-4 years? Please select any one of the following.

Growth Rates	Potential growth rates for agri-sector companies in next 3-4 years
10-15%	☐
15-20%	☐
More than 20%	☐

Agriculture Companies Survey Questionnaire – Sub-sector Specific

3. Rate the [specific sub-sector] as "high", "medium", "low" for each of the following parameters

Parameters	High	Medium	Low	Comments (if any)
Growth potential	☐	☐	☐	
Profit margins	☐	☐	☐	
Organised activity	☐	☐	☐	
Competition from foreign firms	☐	☐	☐	
Demand from domestic market in Nepal	☐	☐	☐	
Demand from international markets	☐	☐	☐	

4. Please select the approximate range of profit margins for [specific sub-sector] companies as per your assessment

Less than 5%	5 to 10%	10 to 15%	15% to 20%	More than 20%
☐	☐	☐	☐	☐

3. Please mention the approximate annual turnover, production capacity and utilisation of production capacity for a typical company in [specific sub-sector]

Approx. annual turnover	Production capacity	% utilisation of production capacity

4. Please mention the top 3 companies in [specific sub-sector] by turnover and capacity? How many medium to large [specific sub-sector] companies operate in Nepal?

Top 3 Herbs companies	
1)	
2)	
3)	
Approximate number of [specific sub-sector] companies in Nepal	

6. How is the overall policy and regulatory environment? In what ways does it support growth of businesses and in what ways does it negatively impact growth. Please select any of the following that apply

Impact of regulation/policy	Applies to [specific sub-sector] in Nepal (select all that apply)

a) High upfront setup costs due to licences	☐
b) Difficulty in acquiring land	☐
c) Competition with subsidised products in the market	☐
d) Regulation requiring banks to lend at lower interest rates to agri-businesses	☐
Any others? – Please explain	