



SECTORAL PROFILE

AGRICULTURE



GOVERNMENT OF NEPAL
INVESTMENT BOARD NEPAL

Technical and Financial Support

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ACRONYMS

ADS	Agriculture Development Strategy
AMIS	Agriculture Management Information System
APP	Agriculture Perspective Plan
BFI	Banking and Financial Institution
BIPPA	Bilateral Investment Promotion and Protection Agreement
CBS	Central Bureau of Statistics
CTC	Crush, Tear, Curl
DAP	Di - Ammonium Phosphate
DoC	Department of Customs
DOI	Department of Industry
EU	European Union
FAN	Floriculture Association of Nepal
FAO	Food and Agriculture Organisation
FDI	Foreign Direct Investment
FFA	Free Fatty Acid
FY	Fiscal Year
GDP	Gross Domestic Product
GoN	Government of Nepal
LDC	Least Developed Country
MAP	Medicinal and Aromatic Plants
MoALD	Ministry of Agriculture and Livestock Development
NRB	Nepal Rastra Bank
NTFP	Non-Timber Forest Products
NTIS	Nepal Trade Integration Strategy
PC	Phyto Sanitary Certificate
PPP	Public Private Partnership
SAFTA	South Asian Free Trade Agreement
spp.	Species
VAT	Value Added Tax
WHO	World Health Organisation
WTO	World Trade Organisation



1. OVERVIEW

Nepal lies in South Asia bordering China (in the North) and India on the remaining three sides. The three distinct geographical zones in Nepal are: the Terai (lower elevated plain regions), the mid hills, and the mountainous region. The topography of the hills and mountains are rugged and the altitude varies considerably within short vertical distances.

The river valleys could be around 1000 meters above sea level, while the adjoining ridge could be as high as 3,000 meters. Hence, both the climate and the vegetation vary greatly over very short distances, and this has resulted in both ecological diversity and complexity. Table 1 summarises Nepal's agricultural-topographical profile:

Table 1: Summary of geographical and biophysical profile

Geographical Profile	
Area	147,181 square km
Altitude range	59 m - 8,848.86 m
Topographical zones	Terai: Altitude 59 m -700 m (warm plain region) Mid Hill: Altitude 700 m - 3,000 m (varied microclimates) Mountain: Altitude 3,000 m - 8,848 m (high altitude zone)
Land area	Terai: 23 %, Hill: 42 %, Mountain: 35 %
Bio-physical profile	
Climate	Terai region: Tropical/ sub-tropical Hilly region: Moderate to warm temperate Mountain region: Sub-alpine/ alpine
Major crops/ livestock	
Mountains	Yak, sheep, goats, temperate fruits
Hills	Sub-tropical cereals, fruits, tea, coffee, flower, milk, goat, poultry
Terai	Cereals, tropical and sub-tropical fruits, vegetables, livestock, and milk
Biodiversity	
Flora	<ul style="list-style-type: none"> • 6,973 spp. Angiosperms • 1822 spp. Fungi • 465 spp. Lichens • 1001 spp. Algae • 1,150 spp. Bryophytes • 534 spp. Pteridophytes • 26 spp. Gymnosperms
Fauna	<ul style="list-style-type: none"> • 208 spp. Mammals • 867 spp. Birds • 123 spp. Reptiles • 55 (+-) spp. Amphibians • 230 spp. Fishes • 3,958 spp. Moths • 651 spp. Butterfly • 5,052 spp. Beetles and other insects
Land use	<ul style="list-style-type: none"> • Forest: 45%. • Cultivated land: 21%. • Irrigated land: 58%.
Economic growth rate (2022/23)	• 5.84%
Contribution to agriculture to GDP	• 24.1%
Population engaged in agriculture	• 50.4%
Land use	<ul style="list-style-type: none"> • Forest land: 45% • Cultivated land: 21% • Irrigated land: 58%

1.1 Contribution of Agriculture to GDP

Nepal's agriculture system represents an abundance of crop diversity spread across varied topographical regions and associated climatic conditions. The micro-climatic variations have made the land suitable for wild and cultivated aesthetic plants, non-timber forest products (NTFPs), medicinal herbs and essential oils.

Agriculture is the primary source of employment, income, and food, for more than 60% of the population. Most of the cultivatable lands lie in the plains. Despite being a major contributor to the nation's economy, Nepal's agriculture is still highly dependent on the annual monsoon rains. The productivity of major high value crops has increased after 2010, which has been a result of better understanding of value of diverse lands and production potential of multiple crops by private growers and the use of improved varieties, pesticides, agricultural machinery, and irrigation technology.

In fiscal year 2022/23, the contribution of crops to the agriculture GDP was 65.96% – livestock 24.01%, forestry 8.52%, and fishery 1.51% (MoALD, 2023). Contribution of agriculture to GDP is higher than other sectors (Figure 1).

Nepal needs to enhance the economic value of the agricultural system through industrial development of the sector. This can lead to higher growth of both agriculture and the manufacturing sectors. Higher GDP contribution (at current price) would improve agriculture-based income. Table 2 shows the growth rates of major industrial divisions.

1.2 Provincial agricultural profile

Koshi Province

The economy of Koshi Province is largely agriculture-based such as in farming of major cereal crops, cash crops and animal husbandry, followed by tourism. Tea, paddy, maize, wheat, potato, millet, etc. are major crops cultivated in the province. Jhapa, Morang and Sunsari districts of the Terai and Udayapur of the Inner Terai have fertile land for growing paddy, wheat, sugarcane, maize, millet, jute, etc. Koshi Province produced around 22.6% of all major cereal crops produced in Nepal in FY 2021/22. The region also produces fruits like mango, litchi, and banana. Tea is main crop in the hilly regions. Bay leaf, cardamom, and different fruits, and vegetables are also grown. Ilam, Jhapa and Tehrathum districts are major tea production areas. The hill districts of the province also produce large cardamom and *churpi* (dog-chew). Koshi Province has good productivity of cereal and pulses in line with the national average of around 3.3, 2.99 and 1.1 mt(t)/ha. for maize, wheat, and pulses (lentil and pigeon pea), respectively.

Figure 1: Contribution of agricultural sector to GDP (Current price)

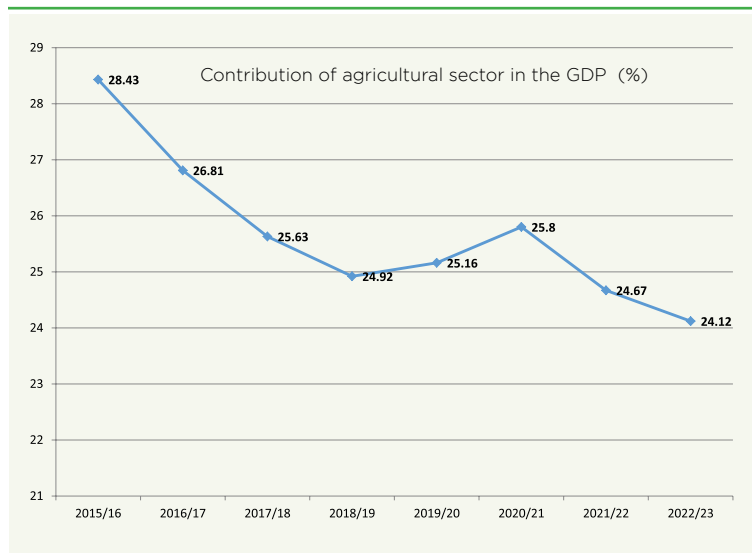


Table 2: Gross value added by industrial division (Growth rates)

Industrial classification	Year			
	2018/19	2019/20	2020/21	2021/22
Agriculture, forestry, and fishing	5.2	2.4	2.8	2.3
Manufacturing	6.5	-9.0	4.1	6.1
Electricity, gas, steam, and air conditioning supply	9.6	19.5	2.6	36.7
Construction	7.5	-4.4	5.2	9.5
Transportation and storage	8.8	-11.8	4.4	4.5
Accommodation and food service activities	9.9	-36.8	10.7	11.4
Education	6.0	3.2	3.9	4.1
Human health and social work activities	6.7	5.2	6.6	6.9

Data source: CBS, 2022

Madhesh Province

This province comprises of the Terai plains, Chure and Siwalik regions with highly fertile lands. The districts are productive zones for vegetables, summer fruits and tropical cereal crops. Rice and wheat are dominant among the cereals, and lentils are the other major crops. The province also has high productivity for fish farming. National average productivity of fish is 5.5 mt(t)ha and that of Madhesh Province is 5.8mt(t)ha (MOALD 2021/22).

The production of major cash crops such as oilseeds (mustard, sunflower), potato and sugarcane are higher in Madhesh compared to other provinces. The province produced 20% of all major cereal crops in FY 2020/21. The province has a sound road network and is well connected to major markets for agricultural products.

Bagmati Province

The districts in Bagmati Province are highly diverse and produce a wide range of agricultural commodities like vegetables, citrus and sub-tropical fruits. Cereal crops are found in the tropical and temperate zones. About 14% of the total provincial area has an altitude low enough to support deciduous, coniferous, and

alpine forests and woodland (mostly hills and mountains). Maize is dominant among the cereals and more soybean is produced compared to other pulse crops. The province contributes around 60% of eggs, 29% of meat and almost 5% of fish produced in Nepal. The province has areas that support the production of paddy, maize, wheat, millet, barley, buckwheat, mustard, and other oil seeds. Some of the major agricultural products are coffee, ginger, citrus and winter fruits. This province is the most populous among all seven provinces and is also an area of highest consumption. Kathmandu Valley is the main market for the agricultural produce.

Gandaki Province

Gandaki Province includes largely districts in the mid hill and mountain regions with a small strip of plains (Nawalpur District). The province has opportunities for expanding sub-tropical and temperate fruits, vegetables, and cereals and for setting up processing units. Various parts of the province are irrigated by the tributaries of the Kali Gandaki River. More than 65% of the area lies in the hilly region, some with the most famous tourist destinations of Nepal. The districts in the province produce coffee in addition to regular cereal crops and pulses. Manang and Mustang

districts are major tourism destinations and locations with significant apple production. In FY 2021/22, the province produced 9,105mt(t) of apples. However, the districts lack proper processing, packaging and transport facilities. The cereal and cash crops grown in the province are paddy, wheat, maize, coffee, oilseeds, etc. The province also produces high volumes of millet and buckwheat.

Lumbini Province

Lumbini Province occupies 15% of total area of the country and includes productive Terai districts as well as diverse mid and high hill districts. This province has opportunities for expansion of tropical, sub-tropical and temperate cereals, legumes, fruits, and vegetables.

Beside regular cereal crops and fruits, the area is highly suited for production of oil seeds such as mustard and the production is higher compared to other provinces. The area is also popular for commercial farming with various processing and packaging industries. Coffee, ginger and seasonal (tropical and subtropical) fruits and vegetables are also produced in substantial amounts. This province is a dominant production site for rice, lentils, wheat, and cash crops.

Karnali Province

The districts of Karnali Province are suited for cereal crops such as wheat and maize, the dominant cereals. This province is also suited for producing citrus fruits and apples. Nine of 10 districts in the province are hilly while Surkhet is an Inner Terai valley. Birendranagar in Surkhet is the capital of this province and is also the main market hub for agricultural produce. Both Surkhet and Salyan District are renowned for ginger production.

The province has both mountains and mid hills, and low population density.

Wheat, maize, and potato are produced along with winter fruits such as kiwi, hog plum, guava, walnut, etc. The province produced 36% of the barley crop in FY 2021/22. The high mountain regions of the province are known for high value medicinal and aromatic plants, including *Yarsagumba* (*Ophiocordyceps sinensis*). Collecting *Yarsagumba* is a main seasonal vocation of the locals in the mountain regions. Wool production in the province is highest compared to the other provinces.

Sudurpashchim Province

The province mostly comprises of Terai and hills with some districts also stretching into the mountainous zone. The Terai and hills are suitable for paddy, wheat, maize, and seasonal sub-tropical fruits such as mango, guava, banana, etc. whereas the mountainous region supports winter fruits such as kiwi, apple, hog plum, etc. This province has the potential for developing high value agriculture commodities. Two of nine districts of Sudurpashchim Province lie in the Terai and both – Kailali and Kanchanpur – are the main markets for agricultural produce.

1.3 Major products

Rice, maize, millet, wheat, barley, and buckwheat are the major staple food crops in Nepal. Similarly, oilseeds, potato, tobacco, sugarcane, jute, and cotton are important cash crops. Lentils, gram, pigeon pea, black gram, horse gram and soybean are the pulse crops grown across the country. Nepal is well known high value crops like orthodox tea, large cardamom, turmeric, and ginger.

Most Nepali farmers have their own land ranging from 0.5 to 5 hectare on average. They grow diversified crops to cope with uncertain weather and other unfavourable agronomic conditions. Rice, maize, and wheat are dominant components of



Staple food crops: Rice, maize, millet, wheat, barley, buckwheat and potato.

Major cash crops: Oilseeds, potato, tobacco, sugarcane, tea, coffee, flower, vegetables, temperate fruits, large cardamom, jute and cotton.

Pulses: Lentil, gram, pigeon pea, black gram, horse gram and soybean.

the agricultural production system. Terai regions are more suited for rice, wheat, and vegetables. Alteration in cropping season, adoption of good agronomic practices, and proper crop management can result in higher crop productivity also in the mid- and high hill regions.

The country has high comparative advantage in the production of several high-value, low-volume cash crops such as ginger, cardamom, tea, and lentils. Subsectors such as dairy processing, poultry, tea seeds and fisheries are also promising. But production is still not sufficient for meeting the requirement of the increasing population.

Agriculture in Nepal is dependent on the annual monsoon rains. In FY 2021/22 production of spices like ginger, turmeric, chillies, garlic, large cardamom, etc. increased by 2.3% over the previous year. Productivity enrichment and expansion of cultivated area can lead higher yields. The increased use of contract farming in ginger has had a significant positive impact on profits. In contract farming, farmers can count on a profit of about USD 0.19 per kilogram. Also, contract farming has helped to increase profits for lentil farmers by 22.5% for different specifications. Establishment of collection centres, processing units and brand-

ing can further enhance the economic benefits from these commodities.

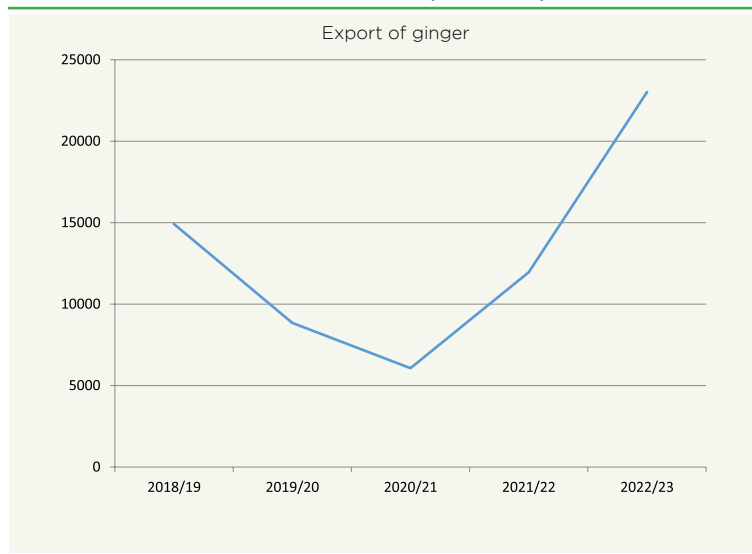
High value products

Ginger

Ginger is one of the most valued spice identified by Nepal Trade Integration Strategy (NTIS) 2023. Nepal is the fourth largest producer of ginger in the world. It is produced in over 65 of Nepal's 77 districts. Doti, Kailali, Surkhet, Salyan, Palpa, Syanja, Nawalparasi, Jhapa and Ilam are some of the major producers of ginger. In FY 2022/23, Nepal produced 29,000 mt(t) of ginger in 22,973.1 hectares of land.

Nepal's ginger is exported mainly to India and Bangladesh. In FY 2022/23, the contribution of ginger in the agricultural GDP comprised of 1.69%. Investing and establishing modern processing facilities can help Nepal export processed ginger to international markets. In the FY 2022/23, 23,013.682 tons of ginger was exported. *Sutho* (dry ginger) is the major processed product exported to countries like India, Bangladesh, Japan, and the United Arab Emirates. However, most farmers dry ginger using labour intensive methods. The lack of automated ginger peelers and mechanical dryers continue to pose major

Figure 2: Nepal's ginger exports (2018/19-2022/23)



Source: FTS (DoC), 2022/23

post-harvest, and export problems.

Most ginger produced is exported in raw (freshly harvested) form to India. There is a price difference of freshly harvested ginger vs. finely washed, semi-dried, dried (sutho). Figure 2 presents the trend in ginger exports.

Turmeric: Turmeric is produced in the hills of Nepal, and it is a crop that can be expanded even in the Terai. Turmeric has high export value and can be processed to high value-added forms such as curcumin.

There are, therefore, opportunities for introducing technology for quality post-harvest processing of ginger and turmeric, with storage facilities, to achieve higher value addition from the product.

Large cardamom: Around 16,000 hectares of land in Nepal's hills are under cardamom cultivation. The estimated annual production is 9,600 tons. Cardamom has high export potential, particularly to India. Nepal is the largest producer of large cardamom in the world and accounts for 52% of global

production. Large cardamom is widely used as a major spice in food production, as well as in perfumes, health foods, medicines, and beverages. Nepal is already exporting large volumes of dried but un-graded cardamom to India and Pakistan. It also has potential for being exported to international markets for use in cosmetics and flavours to meet the growing demand for plant-based products.

Medicinal and Aromatic Plants (MAPs)

About 85% of MAPs are collected from the mid- and far-western regions of Nepal. Around 300,000 families are directly and indirectly involved in MAPs collection in 58 districts. MAPs are exported to India, Hong Kong, Myanmar, Singapore, Japan, France, Germany, Switzerland, the Netherlands, the United States, and Canada. Owing to the diverse climatic conditions, some unique and valuable herbs, natural fungus, and medicinal plants like *yarsagumba*, *chiraito*, and *jatamashi* are found in Nepal. Herbs like *sugandhawal*, *zedoary*, cinnamon, chamomile, citronella, juniper berries, and lemongrass are used for the preparation of essential oil for export to Europe, United States, East Asia, and India. In FY 2022/23, Nepal exported 683 kgs of *yarsagumba* (fruiting body of fungus developed by ghost moth larvae). The export value was NPR. 443,191,000. The major NTFPs and MAPs of Nepal available at different altitudes are listed in Annex 2. Figure 3 depicts *yarsagumba* export from Nepal (2018/19-2022/23).

Tea and coffee

There is tremendous scope for organic tea farming in the eastern hills of Nepal, where around 18,700 hectares of land is available for the crop. The total tea production in FY 2022/23 was expected to be 26,800 metric tons. Markets for orthodox tea are Germany, Japan, and other European Union countries. Market

for CTC tea is Pakistan and the Persian Gulf states. Area under tea cultivation in Nepal could expand to 62,800 hectares in the next 15 years. The area under tea plantation increased by 10% from 17,000 hectares in FY 2021/22 to 18,700 hectares during FY 2022/23.

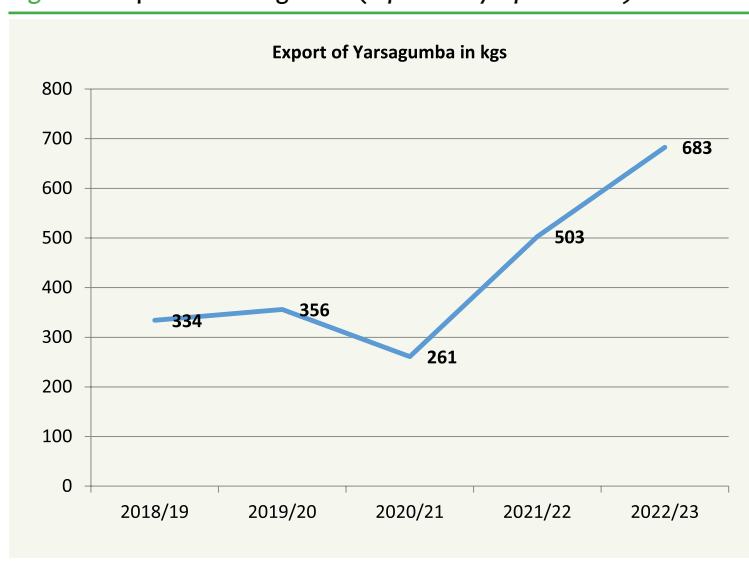
Coffee plantations in Nepal are spread across 40 hill districts and engage over 30,000 households individually or as members of coffee producing cooperatives. The potential for coffee production is high as Nepal has suitable climate, topography, soil, relative humidity, temperature, and rainfall for growing organic Arabica beans.

Area under coffee has increased by 22%, from 3,346 hectares in FY 2021/22 to 4,080 hectares in 2022/23. Nepali coffee has potential to be established as a quality brand internationally if the required quantity can be regularly supplied in specified quality. With proper branding and right certification, it would be possible to sell the Nepali coffee at premium prices in niche markets.

Honey

The annual potential for honey production is estimated to be in the range of 10,000 to 25,000 mt(t). More than 50,000 households are involved in beekeeping. The major honey producing districts are Chitwan, Nawalparasi,

Figure 3: Export of Yarsagumba (*Ophiocordyceps sinensis*)



Source: FTS 2022/23

Rupandehi, Kapilbastu, Dang, Sarlahi, Sunsari, Mahotari, Makwanpur, Banke, Bardia, and Kanchanpur. Honey production in Nepal can be enhanced with new processing technology to reduce losses incurred while using traditional methods (3 to 8% is lost during processing). Natural honey contributes 0.1692% of Nepal's GDP. There are 249,010 hives in Nepal which produce 4300 mt(t) of honey. One major challenge facing the business is quality assurance, which when addressed through proper pasture management and internationally accredited certification, can make it ready for global markets.

Major crops: Topographical zones



Mountain

Potato, kiwi, apple, apricot, buckwheat, barley, millet, hog plum



Hill

Maize, ginger, citrus fruits, oilseeds, coffee, wheat, potato, tea, large cardamom, kiwi, vegetables, barley, hog plum



Terai

Paddy, wheat, sugarcane, maize, jute, mango, banana mustard, sunflower, sugarcane, lentil, vegetables, potato, cotton

Agricultural products with high comparative advantage



Spices

Ginger: 4th largest producer globally

Large cardamom:

World's largest producer, 52% of global production

Turmeric: High medicinal value



Medicinal and aromatic plants:

Availability of rare and high-value plant species such as *Chiraito* and *Jatamasi*



Tea and coffee:

Established international market for quality products and room for expansion



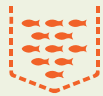
Honey:

Opportunity to expand production of multi flora honey; high demand in both national and international markets



Vegetables:

Important primary produce that can provide quick returns. Nepal is almost self-reliant in fresh vegetables, some also exported



Livestock and fish:

Opportunities to produce various breeds/species of livestock and freshwater fish species



Floriculture/ ornamental plants:

Large plant diversity with scope for exploration



Organic product:

High hill and mountain regions are suited for organic and niche products

Vegetables and potato

Vegetable cultivation in Nepal relies on traditional methods and inefficient technologies. The area under vegetable cultivation is estimated to be 289,839 hectares. Vegetable production and export is a potential area for investment, as the sector can be enhanced with improved knowhow and technology. Private sector interest has increased in vegetable and potato farming in recent years. The

country has become almost self-reliant in fresh (green) vegetables. There are opportunities to enhance and strengthen the entire value chain from production to export, including processing, storage, transport, and marketing, etc. There are also opportunities for supplying to hospitality and the food processing industries in the country. Technological enhancements in farm operations and the value chain can help to reduce

the high (10-20%) post-harvest losses. New cold storages and transport arrangements are also required for facilitating exports.

Floriculture and aesthetic plants

According to the Floriculture Association of Nepal, this sub-sector contributes 0.06% of GDP and employs more than 44,000 people. The floriculture market in Nepal has been expanding. High cost of production, lack of improved technology, and inadequate resources have constrained the floriculture business, which has tremendous scope for expansion. The demand for flowers soars during the festival season, and the supply gap is filled by imports from India. Nepal imports cut flowers mainly from Thailand, Italy, and India. The export of floriculture products to these markets is possible, upon the submission of the phytosanitary certificate issued in Nepal. In FY 2022/23, Nepal exported fresh flowers to Australia, Kuwait, Qatar, United Kingdom, and United States. Investments in large scale cold storages including flower storage, green house-based propagation units for ornamental plants, and transport vehicles can prepare the sub-sector for better serving both the domestic and international markets.

Livestock and fish

The livestock sector contributes around 10% of GDP. Livestock rearing, management and processing are involved in production of meat, milk, and milk products. Fifty per cent of the fodder for livestock comes from forest and grazing lands. Much of agriculture and livestock husbandry in Nepal used to be done by small holding farmers. Today there are commercial agriculture farms, livestock husbandry and fish farming operations in peri-urban areas and villages with market access. There has been increase in cow farming for dairy, and pig raising for meat. This has been facilitated by the availability of concentrated feed and represents the shift that is taking place from subsistence to commercial farming. Nepal has a competitive edge in livestock and the fish subsectors owing to its location, water resources, and abundant labour supply. Establishing large scale farms, meat and milk processing and storage centres can further enhance their production and trade.

Fruits

Sub tropical and temperate fruits have higher production potential throughout the country and new fruit species are being successfully grown in recent years. Apple, kiwi, citrus, avocado and other high value horticultural crops can be grown commercially.

Major livestock



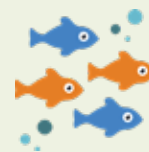
Mountains

Yak, sheep, goat



Hills

Cow, buffalo, goat, pig, poultry, rainbow trout



Terai

Cow, buffalo, goat, pig, fish, poultry





2. INVESTMENT OPPORTUNITIES

Value chain improvement is important to attain the commercialisation in agriculture desired by the Agriculture Development Strategy (ADS). A review of the export-import database shows that Nepal imports multiple maize and wheat-based food products, while it exports small volumes of cereals (raw grains). This points to the need for food processing industries in the country. The same situation applies to fine rice, special food extracts, cheese, cold stored fruits, canned food products, etc. Industries producing agricultural/livestock inputs like fertilizer, seed, feed, etc., and infrastructure (road, irrigation, greenhouses) are crucial for ensuring higher productivity. Some potential agro-based industries for private investment are discussed in the following paragraphs.

2.1 Areas of investment

2.1.1 Agro processing industries

Nepal has been exporting primary products owing to lack of proper storage and fine milling/packaging facilities. Ironically the refined products are imported at higher prices. This situation can be changed with adequate capacity for quality grain storage, warehouses with milling and packaging services, and storage and processing of vegetables, fruits, and cash crops.

2.1.2 High quality edible oil industry

Quality processing options

- Produce high quality edible vegetable oils (sunflower, rapeseed, and

soybean)

- As per the Codex standard, voluntary industry standard for Free Fatty Acid (FFA) content in refined edible oil is $\leq 0.05\%$ (based on oil weight). In the food industry, frying oils with FFA content exceeding 2% are either discarded or fresh oil is added to lower the FFA content.
- Monitoring and maintaining edible oil quality are of paramount importance to ensure safety of the product for consumption.

2.1.3 Processing of NTFPs

Establishing an integrated herbal processing plant is a project on the list of IBN. There is a growing global demand for ayurvedic medicines and NTIS 2023 has also recognised MAPs as having export potential. The integrated plant could cover:

- **Herbal medicines and essential oils:** Based on the availability of herbal species and potential of processing for herbal medicine and essential oils.
- **Aromatic products processed up to the high value stage:** Developed to the end-product or up to the ready-to-use raw material stage for international products.
- **Cosmetic products:** Processing of available plant species to the high value end product stage.
- **Botanical pesticides:** Potential wild flora processing for making botanical pesticides, herbicides, and biological pesticides.
- **Other potential products:** Any other NTFP or herbal species' processing

unit based on abundance, possibility of propagation and market demand.

2.1.4 Agro-based infrastructure and irrigation projects

Physical infrastructure such as irrigation canals, roads and electrical power are prerequisites for agricultural development. According to the Department of Irrigation, only 2.6 million of the country's 14.7-billion-hectares area is under irrigation, and only 1.8 million hectares are irrigable. More than three-fourths of the irrigable land lies in the Terai region. Mid hill areas can be irrigated using electricity powered lift irrigation techniques.

Generally, governments provide facilities as public service, and private investments seek returns from services provided. Therefore, integrating irrigation with other projects (multiple use water system) such as hydroelectricity, drinking water supply, large scale water parks, etc. can generate revenue for the private sector and result in irrigation services. Given the wide availability of water bodies in the hills there is opportunity to invest on solar/ electric powered pump water distribution systems for various uses, including irrigation.

2.1.5 Integrated agro-processing zone (Industrial zone)

There is prospect of integrating a wide range of agricultural products from different parts of the country at centralised storage, processing, and distribution points at feasible locations.

■ **Standard technologies** for processing and processed products (FAO/WHO - Codex standard)

Varied products:

- **Grain legumes:** Silo storage, fine rice, maize grit & flour, corn flakes, wheat (pasta, flour, etc.), pulses, soybean food and feed, by-products, etc. Oat,

barley, buckwheat-food processing, and brewing.

- **Fruits and vines:** Cold storage and fresh supply, jam and jelly, nectar and fresh juice, wine, and syrups.
- **Vegetables:** Grading, collection storage and regular supply and processing (frozen to canned/bottled products, soup powder, etc.)
- **Oilseed crops:** Oil processing and refining plant with high standard (Mustard, sunflower and rapeseed), target olive oil plant for long run.
- **Ginger and spices:** Ginger oil, spices (flours and pastes).
- **Livestock:** Slaughterhouse connected with meat processing centre (Products: fresh and chilled cut meats, frozen meat products, bacon, sausage, and salami, etc.). Cheese and dairy processing plant.
- **Sugar industry:** Sugarcane other sugar producing plants' processing and processing of imported raw materials.
- **Tea/ coffee processing and standardisation**
- **Fish storage (frozen & fresh chilled), and products:** fillet, pickle, dry fish, etc.
- **Others:** Feed industry, compost fertilizer plants and tea/coffee processing (at potential sites with standardisation and certification).

2.1.6 Agro-machinery and tools

Use of modern tools and techniques can support commercial agriculture. Nepal has diversified field orientations and farms sizes, and therefore tools of diverse types and sizes are required to generate anticipated outcomes. Establishment of assembly plants for agricultural machinery, equipment and tools can encourage farmers to engage in more efficient production and management of products. The entire agricultural value chain processes and systems such as land reclamation, seeding/plan-

tation, crop management, harvesting, post-harvest processing, etc. can be mechanised. The following is a list of desired machinery and tools:

- **Production tools and machinery:** Land management, pre- and post-sowing/plantation land reform, tillage, seeding/plantation, fertiliser/ herbicides/ soil pesticide sprayers/ tanks, irrigation pumps, etc.
- **Crop management tools and machinery:** Weeding, pesticide/ foliar nutrient spray, training & pruning and other intercultural operations.
- **Harvesting and threshing tools and machinery:** Cereals, legumes, fruits, cash crops and others for harvesting, threshing, cleaning, etc.
- **Post-harvest processing tools and machinery:** Storage bins/silos, grain/ pulse mills, oil press mill, transportation containers, etc.
- **Multiple options:** Provision machineries for custom hiring, replacement, and maintenance services, etc.

2.1.7 Chemical/organic fertiliser industry

In FY 2022/23, the total demand for fertiliser was 520,000 mt(t). Of the demand 310,000 mt(t) was for urea, 190,000 mt(t) for DAP and 20,000 mt(t) for potash. The existing supply of the chemical fertiliser stands at 178,032 mt(t). Nepal does not have a chemical fertiliser manufacturing facility. A comparative desk study for the establishment of a fertiliser plant in 2021, showed that the production of urea with natural gas technology was more feasible than the water electrolysis method. The study report on establishment and operation of chemical fertiliser factories has recommended establishing a factory based on natural gas technology as it was the most common type, and also one that was also financially viable. Although there are some small producers,

they lack market sophistication and the technical and financial ability to take advantage of the opportunity to supply to meet the large unmet demand.

The integrated agricultural development model encourages production of organic fertilisers through appropriate management of resources and waste disposal. For example, livestock farming (for milk purpose and fattening for meat), slaughterhouses and dairy processing industries can be integrated to produce raw manure and processed wastes for use as fertiliser. This approach also provides an opportunity of using the barren lands in rural areas through management of systematic flow of byproducts (fertilisers, feed, breeds, seeds, etc.). The manufacture and use of organic fertiliser at the local level is critical for sustainable agriculture.

2.2 Smart practices in agriculture

2.2.1 Agro & food laboratory and propagation units

Such units can integrate the processes like soil testing, crop disease diagnosis, vegetative and tissue culture-based propagation, food quality tests, certification, etc. Adoption of tissue culture and vegetative propagations of fruits, vegetables and cash crops can result in availability of large volumes of planting materials developed in controlled environments that can be supplied to growers at subsidised prices. The establishment of large-scale mushroom spawn unit is one example.

2.2.2 Aquaponics, hydroponics and precision agriculture

Existing natural water sources in the country can be used to develop controlled aquaponics and hydroponics systems for plant multiplication and

production of high value commodities. Agriculture Management Information System (AMIS) provides software and media based real-time information on the value chain processes, crop calendars and husbandry of livestock and fish farming. The precision farming technology can be applied in the long run when the basic level advancements have been made in the agricultural system. Such practices can help in the production of various agricultural commodities at high productivity levels.

2.2.3 Climate smart technologies

Climate-smart agriculture can help farmers to increase food production, become more resilient to climate change and reduce greenhouse gas emissions. Establishing climate smart villages is an approach of mitigating climate-related risks for sustainable agriculture. The approach needs to be adopted primarily in the commercial production pockets at both rural and peri-urban areas to protect the environment while producing food for sale in nearby markets.

2.3 Production possibilities

Cultivated lands are mainly concentrated in the Terai (plain) region. The middle hills have high potential for diversified agricultural production, with proper management of time and space. Rural

communities (in the high hill, mid hill, and the Terai) have been withdrawing from farming owing to several issues including low efficiency of agricultural production and marketing enterprises, increased dependency on imported food items, and large number of youths seeking foreign employment. In some parts of Nepal, agricultural lands have remained fallow owing to labour shortages caused by migration to urban areas.

Commercial agricultural production using scientific approaches have also begun in many parts of the country. There are opportunities for using productive barren lands and uncultivated agricultural lands for large-scale farms.

In 2021, the total area with irrigation infrastructure was 1,369,000 hectares. Total area under irrigation has been growing at an average rate of 5.53% since 1972 when it was 117,000 hectares. During the same period, agricultural land area increased from 38,220 sq. km in 1972 to 41,210 sq. km in 2021 (World Bank, 2021).

Productivity of major crops has also increased after 2010 as illustrated by Table 3. The increase has resulted from use of improved technology and adoption of scientific practices. As, Nepal's crop yield levels are far lower than the standard, there is opportunity to maximise agricultural yield in the coming years.

Productivity growth rate of fresh vegetables has declined over the years while the area under production and number of producers have increased significantly indicating a move towards becoming self-reliant in fresh vegetables. With improved productivity, Nepal can be self-sufficient in the production of fresh vegetables.

Table 3: Productivity growth rate of major crops

Crops	2000 to 2010	2011 to 2020
Rice	0.17	1.94
Maize	2.3	2.13
Wheat	1.34	2.19
Millet	0.15	0.82
Lentil	0.12	2.97
Potato	3.26	1.92
Sugarcane	1.19	1.46
Oilseeds	1.13	4.14
Fresh/green Vegetables	2.14	0.83

Source: Joshi et al (2021). Growth and instability analysis of major crops in Nepal. *Journal of Agriculture and Food Research*.

Table 4: Major crops (based on production volume and prospects)

Province	Terai	Hill	Mountain
Koshi	Paddy, wheat, sugarcane, maize, jute, mango, banana, etc.	Tea, cardamom, ginger, kiwi, vegetables.	Potato, kiwi, apple, millet.
Madhesh	Rice, wheat, mustard, sunflower, sugarcane, lentil, vegetables, etc.	NA	NA
Bagmati	Paddy, maize, wheat, mustard.	Maize, vegetables, ginger and citrus fruits, kiwi.	Millet, potato.
Gandaki	Paddy, wheat, maize, banana, mango.	Maize, vegetables, citrus, oilseeds.	Apple, buckwheat, apricot.
Lumbini	Paddy, mustard, wheat, maize, sugarcane, vegetables, potato, lentils, and cotton.	Ginger, vegetables, coffee, maize.	NA
Karnali	NA	Wheat, potato, ginger, and vegetables.	Apple, millet.
Sudurpashchim	Paddy, wheat, maize, sugarcane.	Maize, guava, vegetables.	Kiwi, apple, hog plum.

Some agricultural commodities that have been successful and have scope for expansion are listed in Table 4.

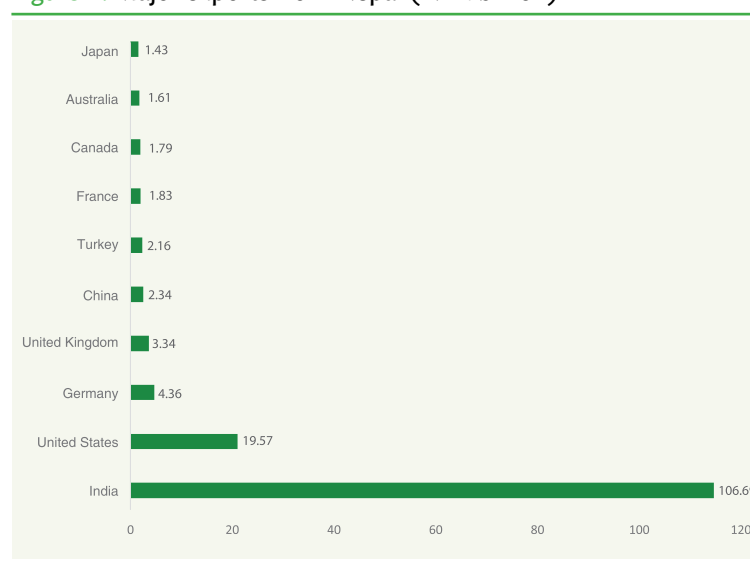
2.4 Market opportunities

As a member of the WTO, Nepal offers one of the lowest import duties in the region. Nepal has Double Taxation Avoidance Agreements with 11 countries and Bilateral Investment Promotion and Protection Agreement (BIPPA) with six countries. The WTO rules grant transit rights to members and provides a degree of certainty in market access.

Much of Nepal's trade takes place with India and China. India is the largest trading partner both in terms of imports and exports. Nepal's exports reach 128 countries and territories, but almost 95.56% of the export was destined for 15 countries in FY 2022/23. The export value has increased for all countries except India and Turkey.

Nepal has the potential to increase its exports by around 12 times.² Produc-

tivity enrichment and expansion of agricultural commodities prioritised by the NTIS 2023 can lead to significant economic transformation due to higher value addition. Nepal exported goods worth NPR 157.14 billion in FY 2021/22. Among the commodities exported, only 28 products were accounted as

Figure 4: Major exports from Nepal (NPR billion)


Source: DOC, 2023

² World Bank Report, 2021

Table 5: Top five agricultural exports

Product	Value (Rs. billion)		% Share in total export	
	2020/21	2021/22	2020/21	2021/22
Refined palm oil	41.06	20.51	20.53	13.05
Refined soya bean oil	48.12	8.48	24.06	5.39
Cardamom	4.81	8.28	2.41	5.27
Fruit juice	6.08	6.64	3.04	4.22
Jute, woven fabric	6.05	4.77	3.02	3.04

Source: DOC, 2023

having an export value of more than NPR one billion. Agricultural products viz. refined palm oil, refined soya bean oil, cardamom, fruit juice and jute, woven fabrics from plant material contributed more than 30 % of total export.

The export volume could be increased and diversified if Nepal enforces national standards and seeks organic certification of export potential products from international bodies. For example, there is no mechanism of exporting certified Nepali tea overseas, even though the product is of high quality. Star hotels and restaurants in Pokhara

and Kathmandu use llam tea as special tea. Some tea producers have obtained organic certification from IMO (German Certification group) through Indian agents.

Nepali traders have been importing crude palm oil from other countries with minimal tariffs and have been re-exporting the refined product to India with no tariffs (as per SAFTA provision and existing bilateral agreement). This also applies to soybean oil. The export of oils fluctuates with revisions in import policy in India particularly the duties on raw materials and finished products.

Table 6: Export and import of major agricultural/ food commodities (2021/22)

Description	2078/79 (2021/22) Unit Million NPR.	
	Import	Export
Cereals (Edible cereal grains and for livestock feed purpose).	56625.35	6.95
Trees and other plants, bulbs, roots, cut flowers and ornamental foliage.	283.56	5.38
Vegetables and certain roots & tubers.	31872.48	745.97
Fruit and nuts, edible peel of citrus fruit or melons.	20563.13	64.94
Coffee, tea, mate, and spices.	8770.37	14073.78
Products of the milling industry, malt, starches, inulin, wheat gluten.	2926.00	498.94
Medicinal plants; straw and fodder	24277.82	1912.96
Sugars and sugar confectionery.	5028.47	150.48
Food industries residues, and wastes for animal feed	20083.11	6829.36

Source: DOC (2023)

Soybean can be successfully grown in Nepal, and it also has export potential.

Even though rice, wheat, maize, and pulses are major food crops, Nepal imports associated end-products made from these crops. There is also import dependency on various agricultural commodities due to lack of proper storage facilities, processing, nutrient extraction, grading, and branding. As result, raw materials are being exported, and the refined goods are being imported at higher prices.

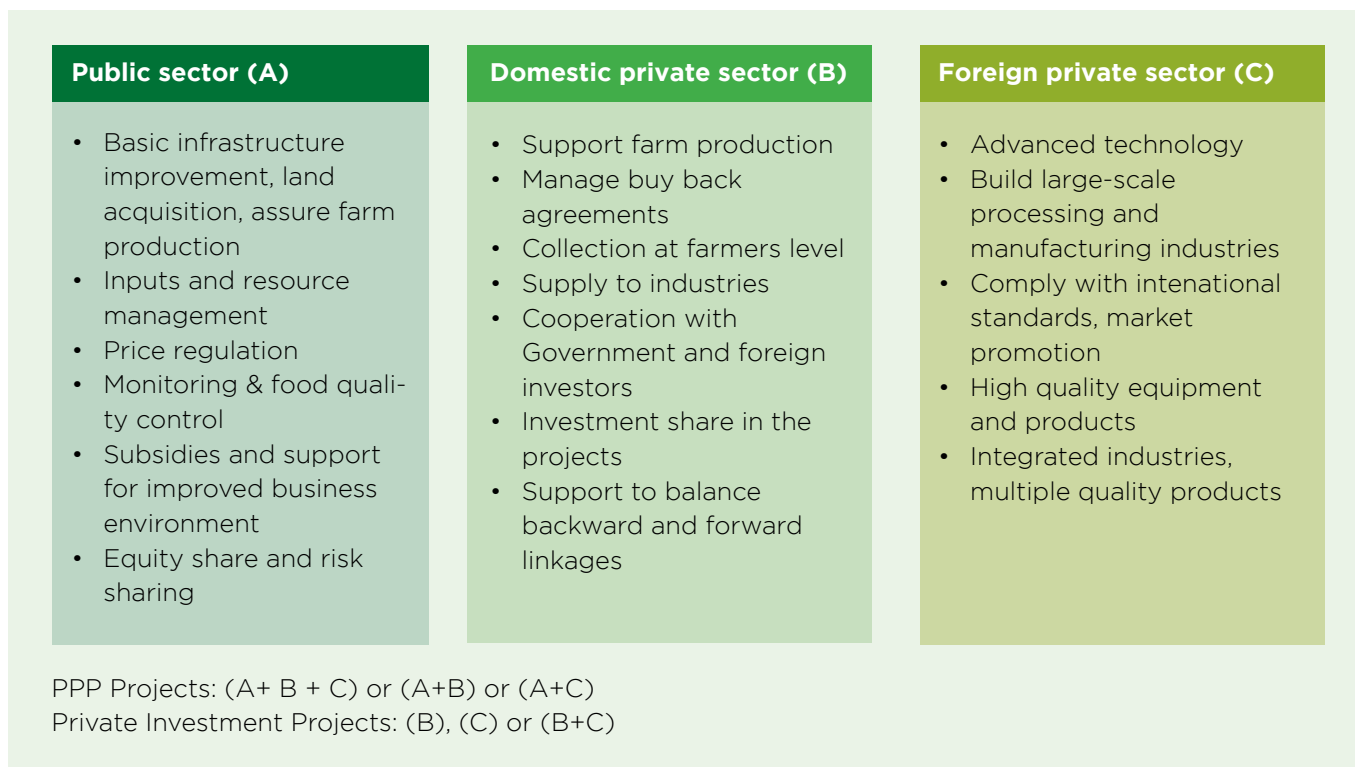
2.5 PPP potential in agriculture

PPP could promote private investment and improve growth in the agriculture sector. Government and private sector,

including foreign investors, can form partnerships in the following ways:

- 1. Government of Nepal:** Subsidies, quality standard determination, price determination and subsidies, assurance of Good Agriculture Practice (GAP) at farm (production) level.
- 2. Foreign Investors and Nepali partners:** Good Manufacturing Practice (GMP) at processing level, technology transfer, certification, hygiene, and compliance with national and international standards. Domestic private partners are crucial for production intensification support, seed and other inputs management and ensuring inclusive/ participatory approaches in the agricultural value chain system.

Figure 5: Possible PPP investment approaches in agriculture







3. SUPPORT SYSTEM

3.1 Policies

The Government of Nepal (GON) has made extensive efforts for developing Nepal's agricultural sector. Nepal's new constitution has emphasised efficient use of lands, which require amendments in land use policy to increase the agricultural productivity and the production. The Agriculture Development Strategy (2015-2035) guides the agriculture sector. The ADS has emphasised proper management, commercialisation, industrialisation, diversification, and modernisation of the sector. Some of the sectoral priorities are discussed in the following paragraphs.

Agriculture Policy (2061)

The policy emphasises improving the living standard of people through sustainable agricultural development by transforming the subsistence agricultural system into a commercial and competitive system. The policy has prioritised: a) Enhancement of local production and productivity, and b) development of commercial and competitive agricultural systems.

Agriculture Development Strategy (2015-2035)

The ADS emphasises not only production (of crops, livestock, fisheries and forests) but also processing, trade and other services (storage, transportation, logistics, finance, marketing, research, and extension).

The ADS has recommended spending NPR. 50 billion (USD 500 million) annually for 10 years on the planned actions, where it anticipates 11% contribution

from the private sector and international donors. The major goals of the ADS are:

- Accelerate investment in science and technology. Invest in the knowledge triangle – research, education, and extension.
- Ensure broad-based and inclusive agricultural growth. Invest in programmes to moderate social and geographic inequalities.
- Integrate smallholder farmers with competitive value chains for meeting the requirements of the growing urban populations in Nepal and for export.
- Promote infrastructure and agro enterprises to reenergize the rural economy.

Nepal Trade Integration Strategy 2023 (NTIS)

- The Nepal Trade Integration Strategy 2023 has identified goods and services with export potential using two broad criteria: (i) export performance, and (ii) inclusive and sustainable development. Five of the 17 priority products identified by the strategy are agricultural products: large cardamom, ginger, tea, jute, and pulses. Other agricultural products identified by NTIS as emerging are spices, coffee, fruits, and vegetables. The strategy has identified MAPs, honey and *churpi* (dog chew) and products with export potential.

National Seed Vision

National Seed Vision 2013-2025 is a seed sector development strategy prepared

by the Seed Quality Control Centre. It has been prepared to address the long-standing need at the request of National Seed Board, Ministry of Agriculture and Livestock Development (MoALD), with financial assistance from Swiss Agency for Development and Cooperation (SDC). The Seed Vision aims at increasing crop productivity, raising income and generating employment through self-sufficiency, import substitution, and export of quality seeds. The strategy envisages doubling the number of location-specific competitive varieties to be released by 2025. Seed production and marketing will be organised through structured and efficient systems. The Seed Vision is expected to also contribute to ensuring food security of poor, women, and disadvantaged groups.

The four strategic and one overarching direction for achieving stipulated targets in the Seed Vision are:

- Strengthen varietal development, release and maintenance breeding, and using diverse gene-pool both from local and exotic sources.
- Support public, community, and private enterprises in seed multiplication, processing, and conditioning through efficient seed quality services.
- Enhance marketing skills of seed entrepreneurs and invest in seed related infrastructure.
- Promote the use of quality seeds by diversifying farmer's choice including use of local genetic resources, and
- Create an enabling environment by developing efficient and effective public, community, and private seed related organisations with a healthy business culture.

Prime Minister's Agriculture Modernisation Project (PM-AMP)

Under the PM-AMP, MoALD has envisaged pockets, blocks, zones, and super zones for agriculture products to address the fragmentation of arable land, which is a major barrier to commercialising and modernising agriculture. The project has established 2,776 Small Commercial Agricultural Production Centres (Pocket), 336 Commercial Agricultural Production Centres (Block), 106 Commercial Agricultural Production and Processing Centres (Zone) and 16 Large Commercial Agricultural Production and Industrial Centres (Super Zone). It has provisions for grants under different titles required for agricultural production including fertiliser, seed, and irrigation equipment, construction of pond for fishery, and crop and animal insurance. In addition, grants have also been mobilised for undertaking interventions through the local level in various agriculture projects under public-private partnership, including infrastructure development for agricultural marketing. PM-AMP is implementing a web-based Agriculture Result Monitoring Information System (ARMIS) with the objectives of managing real time data of project related activities and achievements. ARMIS is an online cloud-based software system developed to monitor and manage all project implementation units under PM-AMP for effective workflow and result monitoring. Some of the key strategies adopted by PM-AMP project include:

- Scientific classification and utilisation of land.
- Implementation of modern agricultural technologies.
- Development of infrastructure for processing and marketing.

- Mechanisation in agriculture.
- Modernisation of agriculture research, education, and dissemination.
- Implementation of advancement based on output/outcome.
- Improvement in quality control and food hygiene.
- Implementation of climate smart agriculture practice.

3.2 Laws

Industrial Enterprise Act, 2020

- The registration, renewal and regulation of all industries which do not fall under the jurisdiction of DOI fall under the jurisdiction of provincial governments (applicable for domestic private investors in agriculture).
- **Section 24(2.a):** Manufacturing industries will enjoy income tax exemption of 20% from the prevailing rate.
- **Section 25:** Capital goods, and those used in quality control, can be imported at reduced tariff rates.
- **Section 34:** GON guarantees that no industry will be nationalised.
- **Section 37:** GON facilitates the start-up of the business activities through the One Stop Service Centre to minimise hassles.

Foreign Investment and Technology Transfer Act, 2019

- Technology transfer means any transfer of technology to be made under an agreement between an industry and a foreign investor on the following matters:
 - (1) Patent, design, trademark, goodwill, technological specificity, formula, process,
 - (2) User's license, technological know-how sharing or use of technological knowledge (franchise),
- **Section 4:** Foreign investment may be made individually or jointly: A foreign investor may make foreign investment individually or jointly or by establishing an industry in collaboration with a Nepali citizen.
- **Section 17:** Foreign Investment Approving Body: The Department of Industry shall approve the foreign investment not exceeding six billion Rupees and the Investment Board under the Investment Board Act, 2011 (2068) shall approve foreign investment exceeding six billion Rupees.
- **Annex 1:** FDI is permitted in agriculture for exporting over 75% of the farm produce.

3.3 Taxes and incentives

The following tax and other incentives are available for industries/investments in agriculture-related ventures.

Incentives and subsidy provision	
Income Tax	<ul style="list-style-type: none"> ■ Income generated by the primary agro-producers other than a firm, company or partnership engaged in agriculture within the land limit prescribed by the Land Act, 1965 is exempt from income tax. Similarly, income earned by agriculture cooperatives engaged in silk farming, fruit farming, fruit producing and refining, animal husbandry, dairy industries, poultry farming, bee keeping, fishery, tea, coffee, medicinal herbs farming and processing, vegetable seed producing, rubber farming, agro-forestry, cold storage for vegetables, animal fodder, pesticides, fertilisers, and agricultural tools is exempt from income tax and dividend tax. ■ 70% exemption of applicable tax rate for industry based on the agriculture sector that provides direct employment to at least 100 Nepali nationals during a whole year. ■ Exemption of dividend tax in case of special industry, industry based on agriculture and tourism sectors which capitalises its profit (issues bonus shares) for the purpose of expansion of capacity of industry. ■ 40 % tax exemption for fruit-based brandy, wine, cider-producing industries established in underdeveloped areas specified by the Government.
Value Added Tax	<ul style="list-style-type: none"> ■ No value added tax is levied on primary and basic agricultural goods. ■ VAT exemption facility for agro-based cold storages. ■ VAT exemption for spare parts imported by jute industries on recommendation of DoI. ■ 25% VAT square off facility for all-purpose flour industries. ■ 40% VAT square off facility for mustard oil and vanaspati ghee producing industries, dairy industries and tea producing and refining industries. ■ 90% VAT square off facility for sugar producing industries. ■ Exemption of VAT in the premium paid for agriculture and livestock insurance.
Custom duty concessions	<ul style="list-style-type: none"> ■ Fertilisers ■ Raw jute imported by jute industries. ■ Import of partially oriented yarn (POY) and all kinds of manmade staple fibre by industry registered under VAT.
Others	<ul style="list-style-type: none"> ■ Interest on loans extended for commercial vegetable, poultry, mushroom and herbs farming, fishery, dairy business, establishment of storage facilities, meat business and slaughterhouses not to exceed 6%. ■ 50% interest subsidy on loans acquired for the purpose of carrying out commercial farming on 10 hectares of land in hilly region and 20 hectares in the Terai region. ■ 75% interest subsidy on loans extended by cooperatives operated by small and marginalised farmers. ■ 100% interest payment for a period of five years for any private company or cooperatives obtaining loans to establish and operate cold storage and food storage facilities as per the Government directives.



ANNEXES

Annex 1: Relevant Agencies and Organizations

OFFICE OF THE PRIME MINISTER AND COUNCIL OF MINISTERS

Singh Durbar, Kathmandu, Nepal
Tel: +977-1-4211000, 4211025
Email: info@nepal.gov.np
Website: www.opmcm.gov.np

MINISTRY OF INDUSTRY, COMMERCE & SUPPLIES

Singh Durbar, Kathmandu, Nepal
Tel: +977-1-4211889, 4211991
Fax: +977-1-4211877
Email: info@mole.gov.np
Website: www.mole.gov.np

MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT

Singh durbar, Kathmandu, Nepal
Tel: +977-1-4211661, 4211641
Fax: +977-1-4211954
Email: info@moste.gov.np
Website: www.moste.gov.np

MINISTRY OF AGRICULTURE AND LIVESTOCK DEVELOPMENT

Singh durbar, Kathmandu, Nepal
Tel: +977-1-4211905, 4211950
Fax: +977-1-4211935
Email: info@moald.gov.np
Website: www.moald.gov.np

MINISTRY OF FORESTS AND SOIL CONSERVATION

Tel: +977-1-4211567
Fax: +977-1-4211868
Email: info@mfsc.gov.np
Website: www.mfsc.gov.np

INVESTMENT BOARD NEPAL

Office of the Investment Board
ICC Complex, New Baneshwor,
Kathmandu, Nepal
Tel: +977-1-4475277, 4475278
Fax: +977-1-4475281
Email: info@ibn.gov.np
Website: www.ibn.gov.np

NATIONAL PLANNING COMMISSION SECRETARIAT (NPCS)

Singh Durbar, Kathmandu
Phone: +977-1-4211136
Fax: +977-1- 4211700
Email: npc@npc.gov.np
Website: www.npc.gov.np

NEPAL RASTRA BANK

Central Office, Baluwatar
Kathmandu, Nepal
Tel: +977-1-4410158, 4410201
Fax: +977-1-4410159
Email: nrbtcu@nrb.org.np Website:
www.nrb.org.np

NEPAL AGRICULTURAL RESEARCH COUNCIL (NARC)

Singh Durbar, Kathmandu
Tel: 977-1-4256837, 4262650
Fax: 977-1-4262500
Email: ednarc@ntc.net.np
Website: www.narc.gov.np/narc

NATIONAL TEA AND COFFEE DEVELOPMENT BOARD

New Baneshwor, Kathmandu
Tel: 977-1-4495792, 4499786
Fax: 977-1-4497941
Email: ntcdbboard@wlink.com.np
Website: www.teacoffee.gov.np

DEPARTMENT OF INDUSTRY

Tripureshwor, Kathmandu
Tel: +977-1-4261203, 4261302
Fax: +977-1-4261112
Email: info@doind.gov.np
Website: www.doind.gov.np

OFFICE OF THE COMPANY REGISTRAR

Tripureshwor, Kathmandu, Nepal
Tel: +977-1-4259948, 4263089
Fax: +977-1-4259961
Email: info@ocr.gov.np
Website: www.ocr.gov.np

DEPARTMENT OF IMMIGRATION

Kalikasthan, Dillibazar
Tel: +977-1-4429659
Fax: +977-1-4433935
Email: mail@nepalimmigration.gov.np
Website: www.nepalimmigration.gov.np

DEPARTMENT OF AGRICULTURE

Hariharbhawan, Lalitpur
Tel: +977-1-5521323, 5521356
Email: info@doanepal.gov.np
Website: www.doanepal.gov.np

DEPARTMENT OF CUSTOMS

Tripureshwor, Kathmandu
Tel: +977-1-4259861
Fax: +977-1-4259808
Email: csd@customs.gov.np
Website: www.customs.gov.np

INLAND REVENUE DEPARTMENT

Lazimpat, Kathmandu
Tel: +977-1-4415802, 4410340
Fax: +977-1-4411788
Email: mail@ird.gov.np
Website: www.ird.gov.np

DEPARTMENT OF LABOUR

Minbhawan, Baneshwor
Tel: +977-1-4107194
Fax: +977-1-4107288
Email: info@dol.gov.np
Website: www.dol.gov.np

**DEPARTMENT OF FOOD TECHNOLOGY
AND QUALITY CONTROL**

Babarmahal, Kathmandu
Tel: +977-1-4262369/ 4262741
Fax: +977-1-4262337
Email: info@dftqc.gov.np
Website: www.dftqc.gov.np

**FEDERATION OF NEPALESE CHAMBERS OF
COMMERCE AND INDUSTRY (FNCCI)**

Pachali Shahid Shukra FNCCI Milan
Marg, Teku,
Kathmandu
Tel: +977-1-4262061, 4262218
Fax: +977-1-4261022
Email: fncci@mos.com.np
Website: www.fncci.org

**CONFEDERATION OF NEPALESE
INDUSTRIES (CNI)**

Trade Tower, 5th Floor Thapathali
Kathmandu
Tel: +977-1-5111122, 5111123
Fax: +977-1-5111122
Email: cni@wlink.com.np
Website: www.cnind.org
Annex 2: Major NTPFs and MAPS of
different geographic regions in Nepal

Annex 2: Major NTPFs and MAPS of different geographic regions in Nepal

Altitude	Common name /Local name	Scientific name
1. Tropical (up to 1000m)	Kurilo	<i>Asparagus racemosus</i>
	Tulsi	<i>Ocimum tenuiflorum</i>
	Bel	<i>Aegle marmelos Correa</i>
	Harro	<i>Terminalia chebula</i>
	Barro	<i>Terminalia belerica</i>
	Amala	<i>Phyllanthus emblica</i>
	Sikakai	<i>Acacia concinna</i>
	Tendu	<i>Diospyros melanoxylon</i>
	Sarpagandha	<i>Rauvolfia serpentina</i>
	Neem	<i>Azadirachta indica</i>
	Haldu	<i>Adina cordifolia</i>
	Jackfruit	<i>Artocarpus heterophyllus</i>
	Babul	<i>Vachellia nilotica</i>
	Amaltus	<i>Cassia fistula</i>
	Lokta	<i>Daphne bholua</i>
	Argeli	<i>Edgeworthia gardneri</i>
	Chiraito	<i>Swertia chirayita</i>
	Wintergreen	<i>Gaultheria procumbens</i>
	Timur	<i>Zanthoxylum armatum</i>
Pipla	<i>Piper longum</i>	
2. Sub-tropical (1000 to 2000m)	Tejpat	<i>Cinnamomum tamala</i>
	Dalchini	<i>Cinnamomum verum</i>
	Kurilo	<i>Asparagus officinalis</i>
	Rudraksha	<i>Elaeocarpus angustifolius</i>
	Ritha	<i>Sapindus mukorossi</i>
	Majitho	<i>Rubia cordifolia</i>
	Gurjo	<i>Tinospora cordifolia</i>
	Pushpa	<i>Catharanthus roseus</i>
	Bhyakur	<i>Dioscorea species</i>
	Bajradanti	<i>Barleria prionitis</i>
	Sugandhwal	<i>Valeriana jatamansi</i>
	Sugadhkokila	<i>Cinnamomum glaucescens</i>
	Vasa	<i>Justicia adhatoda</i>
	Atis	<i>Annona squamosa</i>
	Chiraito	<i>Swertia chirayita</i>
3. Himalayan and trans- Himalayan		

a. Temperate (2000 to 3000 m)	Nirmasi	Delphinium species
	Chutro	Berberis aristata
	Tilpushpi	Digitalis purpurea.
	Chiraito	Swertia chirayita
	Morels	Morchella esculenta
	Padamchal	Rheum australe
b. Sub-alpine (3000 to 4000 m)	Satuwa	Paris polyphylla
	Sunpati	Rhododendron anthopogon
	Juniper	Juniperus communis
	Lichens	Siphula coriacea
	Laghupatra	Podophyllum hexandrum
	Lauthsalla	Taxus wallichiana
	Panchaunle	
c. Alpine (above4000 m)	Kutki	Picrorhiza kurroa
	Jatamansi	Nardostachys jatamansi
	Yarshagumba	Cordyceps sinensis
	Panch Aaule	Dactylorhiza hatagirea



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