Nepal: Investing in Green Inclusive Upland Agriculture Opportunities

Food and Agriculture Organization of the United Nations

Hand-in-Hand Initiative
Investment Forum | Rome, Italy | 18-19 October 2022
Overview: Nepal

18.7% Absolute Poverty
28.6% Multidimensional Poverty Index

Map of Nepal by Ecological Belt
Total land area: 147,516 Sq. Km

Food Poverty Prevalence
Source: HIHI

Stunting
Source: HIHI
Overview: Nepal’s Socio-Economic Context

- **Total Population**: 29.19 M
  - Male: 14.29 M
  - Female: 14.90 M

- **Agriculture GDP**: 24.9%
- **GDP 2020/21**: $36,178 M
- **Per Capita Income**: $1,239
- **Migration**: 81% Male
- **Unemployment**: 11.4% Male, 13.1% Female

Economic Growth Rate

- **Earthquake 2015**
- **COVID-19**
Overview: Nepal’s Agricultural Context

- 60% Population Engaged
- 0.68 ha/HH Land Holding
- $632 M AGDP per Capita
- 2.23 Agri Overall Contribution to GDP (%) at Current Price
- 3.91 Non-Agri GDP
- $293 Agri Export

### Major Agri Imports and Exports in Million USD (2020/21)

- Cereal: Import 473, Export 212
- Veg and Pulses: Import 11
- Meat and Fish Product: Import 12
- Tea Coffee: Import
- Dairy Products: Import
- Large Cardamom: Import
- Fresh/Dried Ginger: Import

Source: Economic survey 2022 * Statistical Information of Agriculture, MoALD
Overview: Policy Context

Agribusiness Promotion Policy, 2006
Government of Nepal, Ministry of Agriculture and Cooperatives
Objectives and Priorities for Agriculture Development

A self-reliant, sustainable, competitive, and inclusive agriculture sector that drives economic growth, and contributes to improved livelihoods and food and nutrition security leading to food sovereignty.

**Flagship Program:**
Value Chain Development for Key Commodities (15 value chain priorities)

**ADS Key Targets**

<table>
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<tr>
<th>Annual Growth in Agriculture:</th>
<th>Baseline (2010)</th>
<th>Target (2035)</th>
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<tbody>
<tr>
<td>4% in the short term (5 years)</td>
<td>$248 M</td>
<td>$1999 M</td>
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<tr>
<td>6% in the long terms (20 years)</td>
<td>$794 M</td>
<td>$1833 M</td>
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<td>(Baseline 2.95% during 2015/16 – 20/21)</td>
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Poverty in Rural Areas

Baseline: 27%
Target: 10%
Enabling Environment: WHY TO INVEST IN NEPAL?

- Policies facilitating export and trade of agri commodity
- Provincial Agri Business Promotion Act
- Right to Information and Good Governance Act (2006)
- Foreign Investment and Technology Transfer Act (2019)
- Treaty of Trade and Transit with India
- Open Border with India
- Intellectual Property Rights (TRIPS Agreement)

HUMAN RESOURCES

- 57% Working Age (15-59 Years) Population

LOW COST OF LABOUR

Compared to other Peer Countries

MEMBER COUNTRY OF

- SAARC
- BIMSTEC
- WTO
- MIGA
- UNESC
- UNCTAD
- BRI

AGREEMENTS AND TREATIES RELATED TO TRADE

BIPPA

with 5 Countries

- Nepal
- Germany
- India
- UK
- China

DTAA

with 11 Countries

- Nepal
- India
- Sri Lanka
- Cambodia
- Indonesia
- Bangladesh
- Mauritius
- Malaysia
- Sri Lanka
- Lao PDR
- Thailand

FINANCIAL ADVANTAGES

- UP TO 100% Ownership Allowed to Foreign Investors
- REPATRIATION Fully Allowed
- TAX HOLIDAY for Some Sectors/Locations
- COMPETITIVE CORPORATE INCOME TAX (CIT)
  - General: 25%
  - Priority Sectors (Energy, Transport Infrastructure, and Manufacturing): 20%

SUPPORTIVE CONSTITUTIONAL AND LEGAL PROVISIONS

PRIVATE-SECTOR FRIENDLY LAWS AND POLICIES

- Encouraging Foreign Investments, Prioritizing Private-Sector, and Guaranteeing Property Rights, among others
- Project Development Agreement - PDA (for PPP Projects)
- Project Investment Agreement - PIA (for Private Projects)
- Provision of Non-Nationalization and National Treatment

PRIVATE-SECTOR FRIENDLY LAWS AND POLICIES

- Treaty of Trade and Transit with India
- Open Border with India
- Intellectual Property Rights (TRIPS Agreement)

STRATEGIC ADVANTAGES

- Located Between
- Duty Free and Open Border
- B2B+ Products
- 77 Items Duty Free Till 2025
- Duty Free Quota Free (EBT)

Source: Nepal Investment Board
ADS and NTIS priority commodities have high export potential

Scope for value addition, branding and market diversification

High rate of return

Potential for high income generation from marginal and slopy land

Environment friendly (Carbon sequestration, soil erosion control)

Enhance employment in upland rural areas (youth and women engagement)

The Government of Nepal has prioritized the following commodities for Hand in Hand Initiatives to accelerate agricultural transformation and sustainable rural development resulting in minimizing the poverty and contributing to GDP.

Rationale for Prioritizing the Commodities

- Ginger
- Timmur (Sichuan Pepper)
- Highland Potato
- Large Cardamom

Hand in Hand Initiatives (HIHI)

Stochastic Frontier Analysis (SFA)

Priority investment areas

- Ginger
- Highland Potato
- Large Cardamom
- Timmur

SFA typology

- Critical with moderate opportunities
- Medium priority with high agricultural opportunities
- Low priority with high agricultural opportunities
- High priority
- Medium priority with moderate agricultural opportunities
- Low priority

Disclaimer: 2019 Nepal administrative boundary

Source: HIHI
Investment Plan: Highland Table Potato

**Rationale for Investment:**
- Seasonal comparative advantage compared to low lying areas and Indo-Gangatic plain
- 42.8% out of 3.81 M farm holding HH grow potatoes
- Profitable than other cereal crops
- Increasing demand, Potential for commercial production
- Take advantage of seed technology for increasing productivity
- Highlands are suitable for growing high quality virus free seed potatoes

**Target Districts:** Dolakha, Sindhupalchok, Rasuwa, Ramechhap

**Scope for Key Investments**
- Improve input supplies and production technology
- Tissue culture and screen house facilities to produce virus free seed potato
- Seed potato production and distribution enterprise
- Irrigation and storage infrastructures
- Area expansion (unused and underutilized land)
- Improved post harvest technologies and marketing

Source: HIHI
Investment Plan: Highland Table Potato

**Beneficiaries:** 6720
**Indirect Beneficiaries:** 33600
**Area:** 3360 ha
**Higher income for potato farmers**

**Outreach and social benefits**

**Investment:** $8.8 M

**Risk Mitigation:**

- **Virus diseases**
- **Unavailability of healthy planting materials**
- **Farmers are not able to certify the potato seeds**

**Virus free potato seed**
- Capacity building, hill irrigation systems and technology
- Assurance of quality, diversify markets

**Return to Investment (USD)**

- **FNPV**
  - **FNPV@10%**
    - 5.4 M
    - 6.5 M
  - **FNPV@8%**
    - 11.1 M
    - 14.1 M

**IRR:**
- **33.94% in 10 years and 37.27% in 20 years**
Investment Plan: Large Cardamom

**Rationale for Investment:**
- World’s top producer, 8000MT produced, worth $37M exported
- Higher scope for value addition and export, Widely used culinary items
- Oil has high demand for medicinal purposes in global markets
- Cultivated in slopy/unused land
- Highly profitable
- Higher demand for quality planting material, area expansion
- Technological and adoption gaps in drying and storage
- Increased income generation opportunities

**Target Districts:**
Ilam, Terathum, Taplejung

**Scope for Key Investments**
- Improve input supplies and production technology
- Tissue culture and screen house facilities to produce virus free planting material
- Value addition, market diversification and export enterprises
- Drying and storage facilities
- Area expansion (unused and underutilized land)
- Improved post harvest technologies and marketing

Source: HIHI
Investment Plan: Large Cardamom

- **Beneficiaries**: 20100
- **Indirect Beneficiaries**: 100500
- **Area**: 6700 ha
- Higher income for farmers

**Investment**

- **Investment**: $26.2 M

**Mitigation**

- Virus-free planting materials
- Capacity building
- Standard quality brand, diversify markets

**Risks**

- Disease outbreak (Virus)
- Price fluctuations

**Return to Investment (USD)**

- FNPV
- **IRR**: 15.98% in 10 years and 20.69% in 20 years

- **FNPV@10%**
  - 10 years: 5.4 M
  - 20 years: 8.1 M

- **FNPV@8%**
  - 10 years: 16.0 M
  - 20 years: 22.4 M
Investment Plan: Timmur (Sichuan Pepper)

**Rationale for investment:**

- Highly profitable NTFP ($3/kg; essential oil $28/lit)
- Found in wild and also grown at the altitude of 1,000 to 2,500 M
- Productive use of degraded forests, private marginal land
- High demand for essential oil (EO) in international market for medicine and cosmetics (India, China, US and Europe)
- Potential to increase area, yield: 975 MT; yield 3.5 kg per plant;
- High potential to grow in farmland and area expansion

**Target Districts:** Dailekh, Rukum, Pyuthan, Salyan

**Scope for Key Investments**

- Improve input supplies and production technology
- Tissue culture and screen house facilities to produce quality planting material
- Value addition, market diversification and export enterprises
- Drying and storage facilities
- Area expansion (unused and underutilized land)
- Improved post harvest technologies and marketing

Source: HIH
Investment Plan: Timmur (Sichuan Pepper)

- **Beneficiaries:** 25000
- **Indirect Beneficiaries:** 125000
- **Area:** 2500 ha
- **Higher income for farmers**

**Investment**
- **Investment:** $48.2 M

**Risks**
- Unavailability of high yielding cultivar saplings
- Price fluctuations

**Mitigation**
- Capacity building to produce high yielding cultivar saplings,
- Value addition to produce oil when fresh Timmur price drops

**Outreach and social benefits**

**Return to Investment (USD)**
- **FNPV**
- **IRR:**
  - **34.70% in 10 years and 37.39% in 20 years**
Investment Plan: Ginger

**Rationale for investment:**

- Grown in hills, slopy lands of poor/women farmers, High value crop with high domestic/global demand
- Potential to increase current level of production **279,206 tons**
- Nepal ranks **4th largest** in the world for ginger production
- Profitable against cereal crops
- Production system versatility and climate resilience
- Opportunity to promote new varieties with different characters and quality specifications
- Value addition and other Infrastructure constraints

**Target Districts:**
Salyan, Pyuthan, Rukum, Dailekh, Surkhet, Doti

**Scope for Key Investments**

- Expansion of production areas and increased yields, Organic ginger export opportunity
- Expansion of processed ginger for export
- Special products- essential oils
- Post harvest quality aggregation
- Drying and processing facilities
- Essential oils extraction lab
- Certification, and product diversification
- Warehouse and storage infrastructure
Investment Plan: Ginger

**Beneficiaries**: 8400
**Indirect Beneficiaries**: 42000
**Area**: 2100 ha
**Higher income for farmers**

**Investment**
$34.9 M

**Outreach and social benefits**

**Risks**
- Rhizome rot
- Sale rhizomes with soil
- Fibrous varieties not preferred
- Price fluctuates

**Mitigation**
- Disease free planting materials and crop rotations
- Washing facilities for rhizome
- Fibrous varieties processed
- Standard quality brand

**Return to Investment (USD)**

FNPV
- FNPV@10%
  - 20.3 M
  - 38.5 M

FNPV@8%
- 23.7 M
- 47.7 M

**IRR**
- 50.96% in 10 years and
- 53.02% in 20 years
## Highland Table Potato

**Products:**
- Off season high land fresh table potato, seed potato, hybrid true potato seed, organic potato

**Country and destination market:**
- Domestic market (low lying) and urban center, Neighboring states of India (Bihar, UP, West Bengal) and Bangladesh

**Major Exporters:**
- Arihant Commercial Pvt. Ltd.
- Ioons Traders
- Global Trading Company Pvt. Ltd.

## Large Cardamom

**Products:**
- Dried cardamom, cardamom powder, essential oil, mixed spices, mouth fresheners

**Country and destination market:**
- Existing market India and high scope for export to middle east, Pakistan and Bangladesh

**Major Exporters:**
- Bhandari Traders and Supplier
- Everest Large Cardamom Industries
- Nima Himali Traders

## Ginger

**Products:**
- Organic ginger product, essential oil, dried ginger, mixed spices, ginger candy, fresh ginger, ginger pickles

**Country and destination market:**
- India for fresh ginger, Middle east, US, Germany, Bangladesh and EU countries for processed ginger products

**Major Exporters:**
- Organic Mountain Flavour Pvt. Ltd.
- Illam Ginger Export Pvt. Ltd.
- C.G. Biotech Pvt. Ltd.

## Timmur

**Products:**
- Primary processed dried Timmur grain, Timmur powder, mixed spices, essential oil

**Country and destination market:**
- Germany, France, US and domestic market

**Major Exporters:**
- Methi Associates Pvt. Ltd.
- P&K Enterprises
- Saugat Koseli Ghar
Nepal Investment Plan

**SUMMARY**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Investment</th>
<th>Overall Average IRR</th>
<th>Direct Beneficiaries</th>
<th>Indirect Beneficiaries</th>
<th>Income Increase Per Capita</th>
<th>Emission Reduction Per ha/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$ 118.1 M</td>
<td>37.09%</td>
<td>60,220</td>
<td>301,100</td>
<td>US$ 389</td>
<td>MT -7.69</td>
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**KEY INVESTMENTS**

1. **Intervention**
   - **Highland table potato production and marketing**
     - **Cost (USD)**: 8.8 M
     - **IRR (%)**: 37.27%
     - **NPV**: 11.1 M
     - **Sustainability Benefits**
       - Beneficiaries: 6,720
       - Indirect Beneficiaries: 33,600
       - Income increase per capita: $514
       - Emission reduction per ha/year:
         - MT -0.07 | ≥ 20 yrs: -4,822.22

2. **Intervention**
   - **Large cardamom production and marketing**
     - **Cost (USD)**: 26.2 M
     - **IRR (%)**: 20.69%
     - **NPV**: 16.0 M
     - **Sustainability Benefits**
       - Beneficiaries: 20,100
       - Indirect Beneficiaries: 100,500
       - Income increase per capita: $319
       - Emission reduction per ha/year:
         - MT -3.35 | ≥ 20 yrs: -449,593.05

3. **Intervention**
   - **Timmur production, processing and marketing**
     - **Cost (USD)**: 48.2 M
     - **IRR (%)**: 37.39%
     - **NPV**: 45.0 M
     - **Sustainability Benefits**
       - Beneficiaries: 25,000
       - Indirect Beneficiaries: 125,000
       - Income increase per capita: $450
       - Emission reduction per ha/year:
         - MT -3.53 | ≥ 20 yrs: -176,929.55

4. **Intervention**
   - **Ginger production, processing and marketing**
     - **Cost (USD)**: 34.9 M
     - **IRR (%)**: 53.02%
     - **NPV**: 38.5 M
     - **Sustainability Benefits**
       - Beneficiaries: 8,400
       - Indirect Beneficiaries: 42,000
       - Income increase per capita: $277
       - Emission reduction per ha/year:
         - MT -0.74 | ≥ 20 yrs: -31,235.29

Note: NPV@10%, 20-year project cycle, spill over beneficiaries not included