

PROMOTING AGRIBUSINESS INNOVATION IN NEPAL

Feasibility Assessment for an
Agribusiness Innovation Center



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Agribusiness Innovation Center in Nepal: Report

List of Abbreviations and Acronyms

ABI-ICRISAT	- Agri-Business Incubator at International Crops Research Institute for the Semi-Arid Tropics
ADB	- Asian Development Bank
ADB/N	- Agriculture Development Bank, Nepal
ADO	- Agriculture Development Office
ADS	- Agriculture Development Strategy (of Nepal Government)
AEC	- Agro Enterprise Centre
AEPZ	- Agro-Export Promotion Zone
AfT	- Aid for Trade
AGDP	- Agriculture Gross Domestic Product
AIC	- Agribusiness Innovation Center
ALFN	- Association of Livestock Farming Nepal
ANEP	- Agriculture Nutrition Extension Project
ANSAB	- Asia Network for Sustainable Agriculture and Bio-resources
APIN	- Asia Pacific Incubator Network (of <i>infoDev</i>)
APP	- Agriculture Perspective Plan
AusAid	- Australian Aid Agency
B2B	- Business to Business
BDS	- Business Development Services
BFI	- Bank and Financial Institutes
BI	- Business Incubation
BIC	- Business Incubation Center
BIIN	- Business Incubation Initiative in Nepal
BIP	- Business Incubation Program (of DCSI)
BMO	- Business Membership Organization
BMZ	- German Federal Ministry for Economic Cooperation & Development
BO2	- Business Oxygen, SME Venture Fund
CAA	- Commercial Agriculture Alliance
CAF	- Commercial Agriculture Fund
CADP	- Commercial Agriculture Development Project (Financed By ADB)
CARD	- Centre for Applied Research and Development (of IOE, TU)
CBO	- Community-based Organization
CCIs	- Chamber of Commerce and Industries
CDCU	- Central Dairy Cooperative Union
CEAPRED	- Centre for Environmental & Agriculture Policy Research, Extension and Development
CENTEV-UFV in Brazil	- Technological Centre of Regional Development of Vicosa
CEO	- Chief Executive Officer
CFUG	-Community Forestry User Groups
CIDA	- Canadian International Development Agency
CNI	- Confederation of Nepalese Industries
CODEX	- International Food Standards
COP	- Cost of Production

Agribusiness Innovation Center in Nepal: Report

CPG's	- Coffee Producers' Groups
CSIDB	- Cottage and Small Industrial Development Board
CSITC	- Cottage and Small Industry Training Centre
CTEVT	- Centre for Technical Education and Vocational Training
CV	- Curriculum Vitae
DADO	- District Agriculture Development Office
DCCIs	- District Cooperatives
DCPA	- District Coffee Producers Association
DCSI	- Department of Cottage and Small Industry, Government of Nepal
DDC	- District Development Committee
DFID	- Department for International Development (of British Gov.)
DFTQC	- Department of Food Technology and Quality Control
DLS	- Department of Livestock, Nepal
DOI	- Department of Industry, Government of Nepal
E4N	- Entrepreneurs for Nepal
EDP	- Enterprise Development Program
EIG	- Education for Income generation (USAID Program)
EU	- European Union
FAO	- Food and Agriculture Organization
FECOFUN	- Federation of Community Forestry Users - Nepal
FGD	- Focused Group Discussion
FDO	- Forestry Development Office
FMC	- Fund Management Committee
FNBK	- Nepal Beekeepers and Cooperative
FNCCI	- Federation of Nepal Chamber of Commerce and Industries
FNCSI	- Federation of National Cottage and Small Industries
FNMEG	- Federation of Nepalese Micro Enterprise Group
MORMIN	- Ministry of Foreign Affairs (of Finland)
FORWARD	- Forum for Rural Welfare and Agriculture Reform for Development
FWEAN	- Federation of Women Entrepreneurs Association of Nepal
FY	- Fiscal Year
GDP	- Gross Domestic Product
GEM	- Global Entrepreneurship Monitor
GIZ	- German Technical Cooperation (former GTZ)
GoN	- Government of Nepal
GTP	- Growth and Transformation Plan
GTZ	- German Technical Cooperation
HACCP	- Monitoring Plan and Hazard Analysis Critical Control Point
HIMALI	- High Mountain Agribusiness and Livelihood Improvement Project
HIMCOOP	- Himalayan Tea Producers Cooperatives Limited
HIN	- Heifer International—Nepal
HVAC	- Heating, Ventilating, and Air Conditioning
HVAP	- High Value Agriculture Project in Hill and Mountain Areas
IAA-IBP	- Inculcator for Agribusiness & Agroforestry, Bogor, Indonesia
ICIMOD	- International Centre for Integrated Mountain Development
ICT	- Information and Communication Technology

Agribusiness Innovation Center in Nepal: Report

IDA	- International Development Association (of the World Bank)
IDE	- International Development Enterprise
IEDI	- Industrial Enterprise Development Institute
IFAD	- International Fund for Agriculture Development
IFC	- International Finance Corporation (of The World Bank group)
IIN	- Incubator Initiative Nepal
ILO	- International Labour Organization
INCLUDE	- The Inclusive Development of the Economy Programme (GIZ)
<i>infoDev</i>	- Information for Development (of The World Bank Group)
INGO	- International Nongovernment Organization
IOE	- Institute of Engineering (of Tribhuvan University)
IP	- Intellectual Property
IPO	- Initial Public Offering
ISO	- International Organization of Standardization
IT & BPO	- Information Technology and Business Process Outsourcing
ITC	- Indian Trade Centre
ITPF	- Information Technology Professional Forum
JABAN	-Jaributi Association of Nepal
KPAs	- Key Performance Areas
KU	- Kathmandu University
KUBIC	- Kathmandu University Business Incubation Centre
KUSOM	- Kathmandu University School of Management
LCEAN	- Large Cardamom Entrepreneurs Association of Nepal
LH	- Lotus Holdings
LI-BIRD	- Local Initiatives for Biodiversity, Research and Development
LIFDC	- Low Income Food Deficit Country
MAP	- Medicinal and Aromatic Plant
MBA	- Masters in Business Administration
MC	- Marcy Croups
MCC	- Morang Chamber of Commerce
ME	- Micro-enterprise
MEDEP	- Micro Enterprise Development Program
MFIs	- Micro Finance Institutions
MMA	- Morang Merchant Association
MOAD	- Ministry of Agricultural Development
MoCS	- Ministry of Commerce and Supplies
MOEST	- Ministry of Environment, Science and Technology
MOF	- Ministry of Finance
MOLD	- Ministry of Local Development
MPCs	- Meat and Poultry Companies
MPFS	- Master Plan for Forest Sector
MSFP	- Multi Stakeholder Forestry Program
NARC	- National Agriculture Research Council
NARDF	- National Agricultural Research and Development Fund
NAST	- Nepal Academy of Science and Technology
NBA	- Nepal Bankers Association

Agribusiness Innovation Center in Nepal: Report

NBF	- Nepal Business Forum
NBI	- National Business Initiatives
NBIA	- National Business Incubation Association
NBSM	- Nepal Bureau of Standard and Metrology (GON, MOI)
NCC	- Nepal Chamber of Commerce
NCPA	- Nepal Coffee Producers Association ()
NDA	- Nepal Dairy Association
NDSP	- National Development Strategy Paper
NEAT	- Nepal Economic Agriculture and Trade (USAID Project)
NEF	- Nepal Economic Forum
NEHHPA	- Nepal Herbs and Herbal Products Association
NFOSTA	- Nepal Food Scientists and Technologist's Association
NgCCI	- Nepaljung Chamber of Commerce and Industry
NGPTA	- Nepal Ginger Producer and Traders Association
NIDC	- Nepal Industrial Development Corporation
NIMBUS	- NIMBUS Holding (Private Agriculture-based Industrial Holding)
NLBIC	- Nepal Lotus Business Incubator Centre
NMPFA	- Nepal Milk Producer Farmers Association
NNN	- Nepal NTFP Network
NPC	- National Planning Commission
NPEDC	- National Productivity and Economic Development Centre
NRB	- Nepal Rastra Bank (Central Bank of Nepal)
NRs./Rs. /NPR	- Nepalese Rupees
NTCDB	- National Tea and Coffee Development Board
NTCDB	- Nepal Tea Coffee Development Board
NTFP	- Nontimber Forest Products
NTIS	- Nepal Trade Integration Strategy
NYBF	- Nepal Youth Business Foundation
NYEF	- Nepalese Young Entrepreneurs' Forum
NYEF	- Nepal Youth Entrepreneurs Forum
ODOP	- One District One Product
OECD	- Organisation for Economic Co-operation and Development
OVOP	- One Village One Product (of AEC / FNCCI)
PA	- Practical Action
PA Nepal	- Practical Action Nepal (British NGO)
PAC	- Practical Action Consulting
PAC Nepal	- Practical Action Consulting Nepal (Consulting wing PA Nepal)
PACT	- Project for Agriculture Commercialization and Trade
PAF	- Poverty Alleviation Fund
PFA	- Prevention Food Adulteration
PPP	- Public-Private Partnership
PR	- Public Relations
R&D	- Research and Development
RECAST	- Research Centre for Applied Science and Technology
RMFDC	- Rural Micro Finance Development Corporation
ROI	- Return on Investment

Agribusiness Innovation Center in Nepal: Report

RTA	- Regional Trade Agreement
SAARC	- South Asian Association for Regional Cooperation
SABAL	- Sustainable Agri. with Bazar for Advancing the Livelihoods
SAS-N	- Society of Agriculture Scientists Nepal
SAWTEE	- South Asia Watch on Trade, Economics & Environment
SDC	- Swiss Development Corporation
SEAM-N	- Strengthening of Environmental Administration and Management at the Local Level in Nepal
SEZP	- Special Economic Zone Project
SEZs	- Special Economic Zones
SME	- Small and Medium Enterprise
SMEDP	- Small and Micro Enterprise Development Project
SMEs/MEs	- Small and Medium Enterprises / Micro-enterprises
SNV	- Netherlands Development Organization
SP	- Selling Price
SWOT	- Strength, Weakness, Opportunity & Threat
TA	- Technical Assistance
TBI	- Technology Business Incubator
TBT	- Technical Barriers for Trade
TEIs	- Tertiary Education Institutions
TOR	- Terms of References
TOT	- Trainings of Trainers
TPC	- Trade Promotion Centre
TTO	- Technology Transfer Office
TU	- Tribhuvan University
UKAid	- United Kingdom Aid (DFID)
UN	- United Nations
UNCTAD	- United Nations Conference on Trade and Development
UNDP	- United Nations Development Programme
USAID	- U. S. Agency for International Development
USD	- U. S. Dollars
USF	- Udhayami Seed Fund
VAT	- Value Added Tax
VDC	- Village Development Committee
VECDAN	- Veterinary Chemist & Druggist Association of Nepal
VIOTH	- Vaidya's Organization of Industries and Trading Houses
WB	- World Bank
WF	- World Fish
WEAN	- Women Entrepreneurs Association of Nepal
WEAN Cooperatives	- Women Entrepreneurs Association of Nepal Cooperatives
WI	- Winrock International
WUPAP	- Western Uplands Poverty Alleviation Project
WWF	- World Wildlife Fund
YES	- Young Entrepreneurs Summit
YSESEF	- Youth and Small Enterprise Self-Employment Fund

Agribusiness Innovation Center in Nepal: Report

Table of Contents

1	Executive Summary	11
1.1	Objective	11
1.2	Project Beneficiaries.....	11
1.3	Project Rationale.....	12
1.4	Poverty in Nepal.....	12
1.5	Feasibility Study Methodology	13
1.6	Proposed Areas of Focus.....	14
1.7	Services of the AIC	18
1.8	Limits of the AIC.....	20
1.9	Critical Success Factors	21
1.10	Implementation of the AIC.....	21
1.11	The Role of infoDev	25
1.12	Impacts	25
1.13	Budget Requirements	26
2	The Concept of Agribusiness Innovation Center—AIC	27
2.1	Accelerating Agribusiness Development through Innovation	27
2.2	2.2 Agribusiness Innovation Centers	27

Agribusiness Innovation Center in Nepal: Report

Executive Summary

1.1 Objective

This report examines the feasibility of an **Agribusiness Innovation Center** (AIC) in the agro-processing sector in Nepal and proposes a sustainable business model.

The proposed AIC will foster and accelerate the growth of Nepal's agro-processing sector, thereby helping to commercialize agricultural production, increase agricultural incomes, and reduce poverty. It builds upon *infoDev's* earlier efforts to develop and expand business incubation in Nepal. Lessons gathered are from various agribusiness incubators (see the *Global Good Practices Assessment on Agribusiness Incubation*¹) and similar feasibility assessments carried out in Ethiopia, Mozambique, Senegal, and Tanzania.

The AIC will contribute toward this objective by identifying innovative growth-oriented entrepreneurs who are pursuing business opportunities based on post-harvest value addition of agricultural commodities. It will provide these entrepreneurs with a holistic service offering that accelerates their growth and increases their sustainability. In the process of doing so, the AIC will engage all stakeholders along the value chain, thus strengthening the innovation and entrepreneurship ecosystem affecting the start-up and growth of innovative agribusiness enterprises. Relatedly, the AIC will strive to have a demonstration or catalytic effect, encouraging a new generation of entrepreneurs to enter, grow, and advance the industry.

1.2 Project Beneficiaries

The AIC will have three groups of beneficiaries.

- The **direct beneficiaries** include high growth potential agribusiness entrepreneurs and small businesses.
- The **indirect beneficiaries** are smallholder farmers that supply raw materials to enterprises and tangential service providers, such as logistical support providers and packaging services, who will benefit from the increased demand for their services.
- **Associated beneficiaries** include PACT and other agencies supporting the commercialization of agriculture, whose clients involved in agro-processing will receive additional support from the AIC.

¹infoDev. 2011. *Growing Food, Products, and Businesses: Apply Business Incubation to Agribusiness SMEs*. Washington, DC: World Bank. <http://www.infodev.org/en/Publication.1139.html>

1.3 Project Rationale

Subsistence agriculture with traditional farming practices predominates in Nepal, resulting in widespread underemployment and poor use of resources. According to the Nepal Economic Survey 2011/12, only 1,766,000 hectares out of a total of 2,641,000 hectares of arable land have been irrigated.

Agricultural production (typically without any processing), accounts for nearly 26 percent of total exports, mostly to India, although the majority of Nepalese farmers are subsistence farmers, who do not export surplus production. Moreover, Nepal is a mountainous country, in which there are numerous pockets of food-deficit areas, because surpluses are more easily directed to India than to remote mountain regions within Nepal, which have transport difficulties.

The major food crops grown in Nepal are paddy, wheat, maize, barley, millet, and pulses. Sugarcane, potatoes, oil seeds, jute, tobacco, fruits, vegetables, honey, tea coffee and cotton, mushroom, and floriculture are the main high value cash crops. Animal products (including milk, meat, eggs, fish, and wool) are produced in the country also.

Nepal expects growth in the agriculture sector. In the current fiscal year (2012/13), paddy production is expected to increase by 2.3 percent and maize by 5.4 percent. Similarly, the production of wheat, millet, barley, and buckwheat is expected to increase by 5.9, 4.1, 14.9, and 13.3 percent, respectively. Despite significant livestock numbers and an expected record rise in milk production of 4.6 percent to 1,623,000 MT,² production does not meet the demand from local consumers.

1.4 Poverty in Nepal

Poverty poses a serious problem for Nepal. The Nepal Economic Survey (2011/12) conducted by Ministry of Finance estimates that 25.2 percent of the population is still living below the poverty line, defined as an average annual income of Rs. 19,261, down from 41.76 percent in 1995/96. However, there are significant differences between urban and rural areas. The urban population living below the poverty line was 21.55 percent in FY 1995/96, which fell to 9.55 percent in FY 2003/04, but which rose to 15.46 percent in FY 2009/10, according to the Nepal Living Standard Survey (III).³

Poverty in rural areas has shown gradual improvement, even though it is still higher than in urban areas. In FY 1995/96, the rural population living below the poverty line was 43.27 percent, which fell to 34.62 percent in FY 2003/04 and 27.43 percent in FY 2009/10. According to the Nepal Life Standard Survey III (2011/12), the Gini Index, which depicts

² Government of Nepal. National Economic Survey-Nepal 2011/12.

³ Nepal Living Standard Survey-II, 2003/04.

Agribusiness Innovation Center in Nepal: Report

income inequality, declined to 0.33 percent, meaning there has been a decline in income inequality.

The Food and Agriculture Organization of the United Nations (FAO)⁴ lists Nepal as a Low-Income Food-Deficit Country (LIFDC). The key contributing factors are poverty, uncontrolled urbanization, and associated use of agricultural land in accessible lowland areas for real estate development and shortages of manpower in the uplands. Furthermore, climatic factors, poor agricultural facilities, poor agricultural inputs, and malpractices, such as inappropriate cultivation patterns and pesticide use, have contributed to declining agriculture productivity.

Agricultural development is the foundation for food security and sustainable economic development in Nepal, because it is the major source of income and employment for most Nepalese and because of the key role it plays in the economy. As such, the government has made agricultural development a priority, recognizing the importance of agricultural commercialization for economic development.

1.5 Feasibility Study Methodology

Agribusiness incubation—defined as the provision of a holistic service offering to growth-potential small and medium enterprises (SMEs)—can either *focus* on one or a few subsectors or value chains, or on a broader model that assists any growth-potential agribusiness enterprises. The choice of model depends in large part on the local market conditions as assessed against the parameters outlined in the table below.

Table 1: Benefit Potential of Value Chains

Indicator	Specific Questions
Scalable Production Potential (with comparative advantage)	Are there agricultural subsectors and value chains with known comparative advantage that offer sufficient production of adequate quality within economic reach of processors, and can this be increased (if required) to facilitate beneficiation expansion?
Geographically Clustered Growth Entrepreneur Capacity	Do growth entrepreneurs exist or can they be developed or recruited to ensure the growth of beneficiation activities within a suitable geographic cluster? What do they need to access and develop opportunities? Are there gaps in these areas and can an AIC offer solutions?
Access to Finance	Does suitable and accessible funding exist or can

⁴<http://www.fao.org/countryprofiles/lifdc.asp>

Agribusiness Innovation Center in Nepal: Report

	it be facilitated, for development, research and development (R&D), commercialization, and expansion?
Clear, Ready Stakeholders (including industry leverage)	Are there strong stakeholders that are, or can be, active in supporting the value chain? Can they positively affect the likelihood of implementation?
Scalable, Accessible, and Viable Markets	Can markets be identified that are scalable, accessible, and viable now and in the future?
Infrastructure and Regulatory Constraints	Is there sufficient infrastructure available and does the regulatory environment provide incentives for entrepreneurs to take advantage of the value addition opportunity?

A significant part of the feasibility assessment entailed analyzing the Nepalese market against these parameters, building upon earlier incubator feasibility studies for Nepal, using a methodology that involved a combination of desk research to review literature on agribusiness in Nepal, consulting with stakeholders and agribusiness entrepreneurs, and learning from *infoDev*'s initial work in agribusiness in Sub-Saharan Africa. Individual meetings were held with 67 public and private stakeholders and entrepreneurs. The inception workshop involved 25 people and the stakeholder consultation workshop involved more than 70 people from multiple organizations. The work was undertaken in the second half of 2012.

1.6 Proposed Areas of Focus

Table 2: Key Value Chains with Potential for Enterprise Growth

Coffee:

Despite high prices fetched by Nepali coffee in the international market, export volumes have not increased significantly. As per the National Tea Coffee Development Board (NTCDB), production of coffee in the fiscal year 2011/12 was 153 tons⁵, of which 279,762 kilograms were exported. In the same period, 31,326 kilograms were imported. The government of Nepal is keen on developing a Nepali coffee brand in the country and has approved the Nepali Coffee Logo (brand) and awarded rights to three traders that meet the set standards. Fourteen coffee processors are the members of NTCDB-Nepal, the apex body for the coffee sector. Development organizations working for promotion and commercialization of coffee in Nepal are Project for Agriculture Commercialization and Trade (PACT), International Development Enterprise (iDE), Winrock International (WI), Education for Income Generation (EIG), Local Initiatives for Biodiversity, Research and Development (Li-Bird), Agro Enterprise Centre (AEC), Agriculture Development Office (ADO), U.S. Agency for International Development (USAID).

Fish:

From water surface area of 26,036 hectares, 26,941 tons of fish are produced per annum. With huge unmet and growing domestic demand for fish and related products,

⁵ "Ton" in this document refers to metric tons. Its abbreviation is "t."

Agribusiness Innovation Center in Nepal: Report

commercialization of this sector has potential for growth and for import substitution. Although the exact number is not known, a large number of farmers are engaged in fish production, particularly in the southern plains of the country and the subsector offers potential for growth and improvement in rural livelihoods. The major organizations, projects and donors working in the sector are PACT, EIG, Forum for Rural Welfare and Agriculture Reform for Development (Forward), Centre for Environmental & Agriculture Policy Research, Extension and Development (CEAPRED), Agriculture Nutrition Extension Project (ANEP), iDE, ADO, USAID, and World Fish (WF).

Floriculture:

There is a growing demand for cut flowers in the country. By FY 2010/11, 86 flower showrooms had been established in the country and more than 600 nurseries have been established. About 635 firms and individuals are directly engaged in this subsector out of which only 467 are members⁶ with Floriculture Association of Nepal FAN. The sector currently displays a growth rate of 10 to 15 percent annually.

Ginger:

Nepal is the fifth largest producer and the 15th largest exporter of ginger in the world, producing 216,289 tons from 19,081 hectares. The market for ginger is expanding with increasing use by ayurveda pharmaceutical industries in Nepal and India. More than 80 percent of the total production is exported to India, the only export destination of fresh and dried ginger produced in Nepal. Initiatives such as the Ginger and Spice Development Program have commenced, providing technical services to farmers through Department of Agriculture with the government of Nepal emphasizing ginger as a priority for commercialization. Forty-three entrepreneurs, including producers, exporters and processors, were identified by the NEAT activity (USAID funded Project) in the mid-western and eastern regions. The main projects, donors, and nongovernmental organizations (NGOs) in this sector are Micro Enterprise Development Program (MEDEP), Commercial Agriculture Development Project (CADP), PACT, German Technical Cooperation (GiZ), NEAT, PA, EIG, Marcy Croups (MC), AEC, ADO, and USAID.

Honey:

Nepal has the potential to produce more than 10,000 tons of honey per year. However, the total production of honey at present is estimated to be about 1,500 tons per year. Nepali honey could benefit from international market demand, if appropriate measures are taken and programs are available to strengthen the sector. One of the leading honey companies calculates that if honey consumption increased by 0.1 kilogram per capita then total demand for honey in the domestic market would be about 2,500 tons per year. At present, there are eight major honey processing and exporting companies in the country. Some of the key donor organizations/projects working in the honey value chain are MEDEP, PACT, GiZ, International Centre for Integrated Mountain Development (ICIMOD), AEC, ADO, USAID, and World Bank through various projects.

Large Cardamom:

Nepal is the world's largest producer of large cardamom, with annual production exceeding 5.2 thousand tons, which is expected to increase annually. Cardamom is produced and processed by over 70,000 households in the East of Nepal. It ranks consistently in the top 12 export commodities of the country and contributes on average an annual \$20 million⁷ to the national economy, including \$12 million in export earnings. During the study, four processing

⁶FAN, March 2013 updated data.

⁷ All dollar amounts are U.S. dollars unless otherwise indicated.

Agribusiness Innovation Center in Nepal: Report

industries were identified. Projects and organizations such as CADP, PACT, NEAT, ADO, Netherlands Development Organization (SNV), USAID, and NTCDB are the major working entities in this subsector.

Meat:

With a total number of 9,991,520 sheep and goats reared in the country, Nepal produces 55,531 tons of meat annually. There are 17 large meat processors in the country, who produce a variety of meat products, including sausage, salami, chicken cuts, and "momo." Demand for meat has been increasing, as a result of the growth in population, urbanization, growing income levels, and a desire to shift consumption to quality animal products. A large number of projects and organizations are engaged in strengthening the sector: PACT, High Mountain Agribusiness and Livelihood Improvement Project (HIMALI), Western uplands Poverty Alleviation Project (WUPAP), Education for Income Generation (EIG), Practical Action (PA), Forward, Li-Bird, AEC, ADO and Heifer International-Nepal (HIN).

Milk and Dairy:

Livestock is one of the essential activities for Nepali farmers, important for manure, milk, meat, and religious purposes. The total milk production of the country is about 1.5 million tons. The annual growth of internal consumption of milk is about 8 percent, but production is increasing at only 3 percent. The major milk products of the country are milk powder, buttermilk, curdled milk, cream, cheese, ghee, ice cream, and other sweet products. The Nepal Dairy Association is the apex body for milk processors with 76 members. According to the study conducted by FAO, Nepal in 2010 reported the following dairies: three large, six medium, 26 small, and 215 cottage-industry level. Some of the major organization working in the milk and dairy subsector are MEDEP, PACT, GiZ, Market Access for Smallholder Farmers (MASF), iDE, PA, Forward, AEC, Department of Livestock, Nepal (DLS), USAID and Department for International Development (DFID).

NTFP and Essential Oils:

With its unique geography, Nepal is rich in biological resources and possesses a diverse variety of nontimber forest products (NTFPs). About 2,171,522 kilograms of NTFP products are collected, with revenues of more than \$245,000. There are 108 processors in the NTFP value chain range from small to large, but only 31 of them are under Nepal Herbs and Herbal Products Association (NEHHPA). The small processors produce cosmetic products and essential oils and supply them to the local market; whereas, the large producers mainly export unprocessed commodities. Essential oil and related products and the most important types of products processed, including dementholized oil, eucalyptus oil, mentha arvensis oil, anthopogon oil, artemisia oil, juniper berry oil, spikenard oil, valerian oil, wintergreen oil, Zanthoxylum oil, and massage oil. Other products include handmade paper, morel, herbs, ayurveda herbal teas, organic teas, sorbet (juice) herbal drinks, ayurveda cream, cosmetics, neem soaps, and mentha products. However, Nepal exports about 90 percent of NTFPs in raw form, mostly to India where it is processed into essential oils and used in manufacturing medicines and cosmetic products. Key organizations working in the NTFP sector are MEDEP, PACT, HVAP, WUPAP, GiZ, EIG, iDE, PA, ICIMOD, Forward, ANSAB, AEC, JABAN, Forestry Development Office (FDO), Federation of Community Forestry Users - Nepal (FECOFUN), USAID, DFID and World Wildlife Fund (WWF).

Potato:

The state of potato production in the country is 2,508,044 tons with a productivity of 13,735 kilograms per hectares. Potatoes are cultivated in all zones of the country. Demand for potato is increasing in Nepal and Nepali potato seeds have a high demand in Bangladesh and India, to where a limited amount is exported at the moment. Although clear records on

Agribusiness Innovation Center in Nepal: Report

potato processors are not available, a total of 136 snack and vegetable processing companies of different levels are registered in Department of Food Technology and Quality Control (DFTQC), which may be processing potato related items. The major projects and donors working in this subsector are CADP, PACT, MC, ADO, and EU.

Tea:

Nepal produces 115,432 tons of green leaves of tea, including 3.2 million kilograms of Orthodox Tea, of which 15 percent is exported and of which 85 percent is sold in Kolkata. World tea consumption is increasing, as is the market for organic, fair trade, and value added products, such as specialty, blended, and flavored teas, for which the flavor and aroma of Nepalese tea is an advantage. The Himalayan Tea Producers Cooperative Limited (HIMCOOP) has 19 processing factories and major donor projects. Programs working in this sector are CADP, PACT, NEAT, ADO, SNV, GiZ, USAID, and NTCDB.

Agribusiness Innovation Center in Nepal: Report

The analysis discovered the following:

- a. No one value chain represents a sufficient quantity of growth-oriented entrepreneurs to warrant a focused incubation model. Therefore, a broader model that works across subsectors and value chains is proposed.
- b. While the market opportunities outlined in Figure 2 are promising, even these value chains face significant challenges, which many donors and Nepalese government agencies have recognized and are now working to overcome value chain bottlenecks. The timing for the AIC is thus opportune to complement this work by addressing the business-level impediments faced by agro-processors.
- c. The analysis identified some interesting cross-cutting market opportunities in the areas of branding, certification and compliance, packaging, recycling, dryer innovation, traceability, and logistics. Therefore, the AIC should encourage and enable the start-up and growth of innovative enterprises in these areas.
- d. The AIC will target existing agro-processing enterprises to accelerate and realize their growth potential, while leaving room for some start-up support. This is being done because of the challenging operating environment and the desire to achieve results quickly.
- e. Across the dominant value chains of Nepal, the resonating challenge experienced by most existing entrepreneurs is the development of domestic, regional, and international markets. Food processing entrepreneurs struggle to understand the opportunities in both domestic and international markets, distribution options, the industry standards associated with each target demographic, and the logistical constraints, all of which the AIC needs to address.

1.7 Services of the AIC

Traditionally support to entrepreneurs in Nepal has been characterized by support for micro-enterprise development and training, with almost no tangible support for growing firms past the micro stage. Things are changing with agribusiness commercialization services, through such programs as the matching grant program from PACT and similar CADP and CAA programs. Nonetheless, a gap still exists, encapsulated with three quotes from *infoDev*'s earlier stakeholder consultations:

"Lack of mentorship...everyone craves advice and mentoring and no one gets it."

"Business helping business in a dynamic environment is what is needed."

"Too much training about business from people who have never done business."

Agribusiness Innovation Center in Nepal: Report

Without exception, agribusiness entrepreneurs and participants in focus groups were enthusiastic about the need for business incubation. Most agribusiness entrepreneurs need help with marketing, accessing new markets, networking, branding, and compliance, along with finance. They commonly stress the need for a dynamic environment that engenders trust, courage, fairness, and motivation, without bureaucratic hassles.

The needs of entrepreneurs, along with value chain analysis, underpin the AIC service offering as outlined in the table below:

Table 3: Nepal AIC Service Offering

Technical Knowledge	Advisory Services Networking	Innovation Acceleration Platform	Access to Facilities	Access to Finance
<ul style="list-style-type: none"> •Market Research and Intelligence •Business Training •Technical Training •Industry Seminars 	<ul style="list-style-type: none"> •Advisory and Coaching •Mentors •Value Chain Partner Facilitation •Networking Events 	<ul style="list-style-type: none"> •Competitions •Ideation and Prototyping Events •Acceleration Events •Collobaration Platforms 	<ul style="list-style-type: none"> •Compliance & Certification •Early Processiong Space •Working Space / Hot Desking •Product Showcasing 	<ul style="list-style-type: none"> •Investment Facilitation •Linking to Matching Grants •Connecting to Risk Capital Funds •Brokerage for Growth Funding

As illustrated in the table, the AIC will provide entrepreneurs with a comprehensive service offering that will facilitate access to markets, advice, finance, and facilities. The AIC will add value to the PACT service offering by providing tailor-made services addressing the needs of Nepalese agribusiness SMEs, furthering the matching grants offered by PACT, and as a service that will continue beyond PACT, based on revenues from the companies assisted.

The services revolve around the following:

- Agribusiness market development
 - Market access and information
 - Branding and labeling
 - Certification and compliance (nutritional analysis plus)
 - High-value niche markets
- Technology
 - Suitable technology for post harvesting and processing
 - Product design and testing
 - Packaging technology
- Finance

Agribusiness Innovation Center in Nepal: Report

- Assessing readiness
- Seed capital / matching grants
- Finance for growth
- Management support
 - Infrastructure—office space, product showcasing, and early processing
 - Human resources management
 - Accounting, legal, compliance, and networking

The AIC will provide support to incubatees in partnership with relevant stakeholders, avoiding duplication by complementing and leveraging their services and addressing service level gaps. It will focus its support services toward expanding domestic and international market opportunities for companies operating in value chains with potential. It will emphasize supporting the activities of PACT and its clients. The AIC will work with similar organizations and their clients, such as the CAA, the AEC, donor programs, and micro-enterprise development providers.

1.8 Limits of the AIC

Awareness and preincubation services (involving workshops and advice to prospective AIC clients prior to the rigorous selection process) will largely be at no or only minimal cost. Once clients are selected, they will pay for the business support, which will be tailored to their unique needs on a case-by-case basis, by way of success sharing arrangements, whereby they pay for the support out of increased sales, increased business value and investment in the business, and payment for use of office and other infrastructure services.

The AIC will not directly meet these barriers to the growth of agribusiness enterprises: the development of the primary agriculture sector, a system of supply chain facilities, storage facilities, transport logistics, and a reliable energy supply.

The AIC will seek to overcome these particular challenges by working with allied organizations, such as Federation of Nepal Chamber of Commerce and Industries (FNCCI), Federation of National Cottage and Small Industries (FNCSI), AEC and government agencies. In addition, partnerships will be developed with the many donor programs that are focused on value-chain development, thereby leveraging their work.

Agribusiness Innovation Center in Nepal: Report

1.9 Critical Success Factors

As revealed in *Growing Food, Products and Businesses*⁸, there are a number of critical success factors for an intervention of this kind: 1) helping clients manage risk; 2) understanding the details of the value chain; 3) maintaining a broader goal of demonstrating innovative business propositions so as to stimulate broader sector take-up; 4) adapting the focus and business model of the incubator; 5) proactively identifying and promoting higher value market opportunities; and 6) designing and operating the business incubator in line with good practice, including ensuring a strong selection process that identifies and cultivates innovative, growth-oriented entrepreneurs, and developing strong partnerships with the public and private sector.

The AIC needs the following to fulfill these success factors: 1) staff with extensive experience in the agribusiness sector and in particular in market development, 2) a strong capital structure, and 3) a governance framework that allows the management to operate the AIC in a businesslike manner.

1.10 Implementation of the AIC

Institutional Framework

infoDev with its knowledge and lessons from similar initiatives elsewhere will provide guidance to local implementers. The AIC is intended to be an autonomous self-sustaining entity, which will be locally owned and operated as a business in a new nonprofit-sharing structure, under private sector leadership and with public sector sponsorship from PACT and the Ministry of Agricultural Development (MoAD). The tailor-made agribusiness service offering requires a key stakeholder partnership (Public Private Partnership [PPP]) with additional mechanisms to involve stakeholders as advisors and service providers. Key government partners include the MOAD (PACT), Ministry of Industry (MOI; DCSI), NARC, and DFTQC, in addition to agribusiness entrepreneurs and private sector organizations. PACT, supported by *infoDev*, will lead the process to select an implementing institution or consortium and assist with operational funding and funding for technical assistance. The implementation agency will then need to manage the AIC so it becomes an autonomous and independent self-sustaining organization.

Location

The AIC will operate nationally, with a hub in Kathmandu, the largest urban center and market in Nepal, and satellites, leveraging partners' facilities and services, in Nepalgunj in the West, a regional center for NFTP industries, and Biratnagar in the east, a hub for

⁸ Global assessment carried out by *infoDev* to understand the impact and lessons from agribusiness incubators and innovation centers available at: <http://www.infodev.org/en/Article.800.html>.

Agribusiness Innovation Center in Nepal: Report

horticulture. From these sites, outreach services will be provided to support entrepreneurs in their own locations, as well as supporting entrepreneurs who locate in the AIC facilities, or drop in to make use of the services.

The AIC hub in Kathmandu must be based in an area that is conducive for business, close to regulators of food products, and with proximity to agribusiness entrepreneurs, business mentors, and knowledge centers (R&D). The AIC satellite center locations need proximity to a critical mass of agribusiness entrepreneurs, access to logistics, and access to procurement of raw materials, processing, and packaging infrastructure. The AIC will commence with the hub in Kathmandu followed by satellites in the east at Biratnagar and in the west at Nepalgunj in Year 2, after the hub has is established.

Agribusiness Innovation Center in Nepal: Report

Business Model

The AIC aims for financial self-sufficiency with a number of payment options addressing the needs of agribusinesses at different stages of development. The AIC revenue model includes success sharing, finance facilitation, and fees from services.

The success sharing model will align incentives of management with clients, by way of payment arrangements, whereby entrepreneurs only pay if they either increase their sales or the company value, or by securing external finance, with AIC assistance. Options include a 5 to 7 percent royalty on an increase in gross sales for three to four years or AIC equity in the client company ranging from 5 to 7 percent and success fees for helping secure finance.

Success sharing will only suit some companies. Others will prefer to pay service fees for their incubation or training. The AIC will have offices and other facilities such as meeting rooms, hot desks, office facilities, and a processing facility within its network for use by clients, for which rent and user pay charges will be levied.

Expectations of Sustainability

The model seeks to achieve 100 percent financial sustainability within four years. After the initial ramp up period, costs are in the order of \$970,000 per annum, in the following categories:

Table 4: Nepalese AIC Annual Expenses When Established

Expenses	
Personnel—Administrative	152,600
Client Services	399,000
Overheads	116,900
Building Services	161,640
Provision for Doubtful Debt	97,593
Depreciation	46,427
Total Expenses	974,160

The cost recovery model is justified by the capacity and willingness of the target enterprises to pay to the AIC for services.

The agribusiness entrepreneur focus group discussions found that some prefer to pay at full cost and others preferred payment by way of either a small percentage of equity, or with a royalty levied on the increase in their sales for a period. The consultative workshop outcomes showed preference for payment in terms of a share of revenues and consultation fees.

This implies the AIC should offer options. Businesses at different stages will have various capacity and potential. For instance, an existing business may find it very complicated

Agribusiness Innovation Center in Nepal: Report

to give up equity, but may be prepared to pay for services at full cost at the time, or enter into a royalty agreement. A newer business may be in a position to give up some equity, but may not have the funds to pay for support.

Noting further refinement of the flexible model, the revenue projected for the first six years, excluding grants, is summarized in the table below.

Table 5: AIC Revenue Generation Scheme for the First Six Years of Implementation

Year	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
Income						
Rent	5,375	10,750	16,125	16,125	16,125	16,125
Incubation Fee	62,497	124,994	187,491	187,491	187,491	187,491
Royalty	187,212	456,273	749,966	749,966	749,966	749,966
Finance Brokerage	22,350	22,350	22,350	22,350	22,350	22,350
Total Income	277,435	614,367	975,932	975,932	975,932	975,932

With four main revenue options, the model has flexibility, for review and adaptation as the AIC is implemented. Despite positive responses in the agribusiness entrepreneur survey, payment for services is not the norm in Nepal and paradigms need to change. Benefits may need to be demonstrated with carefully selected clients in the first year to show the advantages.

Selecting Clients

The AIC will particularly emphasize networking, engaging, and working collaboratively with PACT, CAA, chambers of commerce, private stakeholders' associations and private business development service providers in order to not only identify, but also select and support AIC client enterprises. A detailed selection process will need to be prepared in order to select the enterprises. A number of points are pertinent:

1. Enterprises will need to have a growth focus.
2. Entrepreneurs will need to demonstrate strong entrepreneurial traits, including leadership and innovation.
3. Enterprises will have a track record indicating success and will demonstrate competitive advantages in some ways.
4. The market potential of enterprises will need to be positive to allow for growth activities.
5. The enterprise will not need external financing and be fundable.

Selection will follow a process of application, assessment, review, and capacity building. Finally, a selection panel will assess the merits of each enterprise. This panel will

Agribusiness Innovation Center in Nepal: Report

include representation from a financial institution, for which Business Oxygen⁹ is recommended, as well as a professional with sufficient market knowledge in the specific product market to assess the market potential of the product.

Successful enterprises will be required to formally and legally commit to the conditions of service, including payment regimes and conditions.

The initial focus of the selection will be on existing firms to help them grow, although not to the exclusion of new businesses, which will become a more important target in future years. New businesses will piggyback on the experience of pre-incubation programs to develop competitive and viable business propositions. This approach will enable the AIC to more quickly create a set of “demonstration clients” to show the tangible benefits to other future clients and that payment for services is worthwhile for the entrepreneur.

1.11 The Role of *infoDev*

At the planning and implementation stage, *infoDev* views its role as providing the technical guidance to plan, resource, and operate the AIC successfully. *InfoDev* will draw on its decade-long experience in setting up business incubators and innovation centers, its agribusiness incubation training program, and its international network of innovation and entrepreneurship professionals across 107 countries. With a strong commitment to building local institutional capacity, *infoDev* will harness its experience to guide the board and the AIC manager through important milestones, such as developing a governance framework, client selection processes, service design and execution, marketing, and monitoring and evaluation. In order to ensure sustainability and adequate local capacity, *infoDev* typically remains engaged for a three to five-year period, gradually scaling down its support as the capacity of the local team and partners increases.

1.12 Impacts

Once the AIC is up and running, it is projected that 10 new agribusinesses will be supported per annum with a total of 30 clients under incubation at any one time once the AIC is fully established. With 100 clients over a 10-year period, 50 graduates, and with 30 percent revenue growth per annum, preliminary modeling indicates that over a 10-year period the AIC will create 3,024 direct jobs and 8,649 indirect jobs in 100 companies with an increased turnover of more than \$27 million and payment of \$2 million in taxes

⁹A \$14 million SME venture fund, Business Oxygen, has just been launched with the support of the IFC and the World Bank, in partnership with a local private bank, the Bank of Kathmandu, and Beed Management of Nepal.

Agribusiness Innovation Center in Nepal: Report

Smallholder farmers produce most of Nepal's primary production. The initiative is expected to significantly affect the incomes of small-holder farmers, the suppliers to agribusinesses (in terms of reliability), steady prices, and increased sales. Young people comprise the bulk of Nepal's new entrepreneurs and the AIC will directly benefit those involved in agro-processing.

1.13 Budget Requirements

The AIC is designed to become 100 percent financially sustainable after four years defined as covering the ongoing operating expenses of the AIC, including depreciation, through earned revenues. A flexible revenue model is proposed in which sustainability may be enhanced once various revenue options are tested. An initial investment of **\$4 million** will be needed as start-up capital in order to achieve this objective.

The financing required to initiate the AIC will be provided for the first four years, with income generated during this period being banked. The front-loading of the external investment allows the management to focus on the development of the AIC. It also allows the model to be changed, if it becomes clear after two years that the income generation targets are not likely to be met, or that one revenue option is preferred to another, or a flexible combination is required. This approach allows changes to be made before the AIC has to generate income in later years.

The income generating component for the initiative is a mix of royalty fees on turnover, equity, pay-as-you-go fees (incubation fee) and finance brokerage fees. This accommodates a mixed portfolio of clients at varying stages of development.

2 The Concept of Agribusiness Innovation Center—AIC

2.1 Accelerating Agribusiness Development through Innovation

According to the World Bank, “the potential of agricultural growth to reduce poverty is four times greater than the potential of growth from other sectors.” The 2008 World Development Report outlined how investments in agribusiness produce significant multiplier effects through their forward and backward linkages, generating demand for agricultural products and associated inputs and services and creating on and off-farm employment. Interventions that can unleash this potential can have a tremendous impact on poverty.

Many developing countries have not turned their vast comparative advantage in agriculture into a competitive advantage in value-added processed products. They have subsequently lost out on income generation and job creation opportunities that this value addition opportunity offers. Tanzania, for example, exports raw cashew nuts and imports processed cashew nuts. Senegal's retailers stock only a handful of locally manufactured food products—preferring imported products, despite Senegal's extensive horticulture industry and rich culinary traditions.

Reaching such development goals as job creation and inclusive growth in agriculture will require a greater focus on supporting growth-oriented entrepreneurs engaged in downstream business activities (such as processing) to develop competitive enterprises to link effectively into productive value chains.

InfoDev seeks to advance new approaches to accelerating the growth of innovative, technology-enabled agro-processing enterprises, while creating powerful demonstration cases that illustrate how engagement of farmer associations, industry, financiers, and government in creating innovation and market-driven shared value can catalyze the green growth of an inclusive and job creating, competitive agro-processing sector.

2.2 2.2 Agribusiness Innovation Centers

InfoDev is piloting the concept of an AIC as a mechanism to increase the competitiveness and growth of pioneering innovative growth-oriented small or medium agro-processing enterprises that have the potential to become an industry leaders. These SMEs would translate product, process and business model innovation into improved products and larger market share in existing markets or entry into new markets and development of new products for existing or new markets.

Agribusiness Innovation Center in Nepal: Report

The AICs are unique from the perspective of their target clientele, their business model, and the holistic service offering. Although the AICs are tailored to the specific needs and characteristics of the target market, they generally provide the following services:

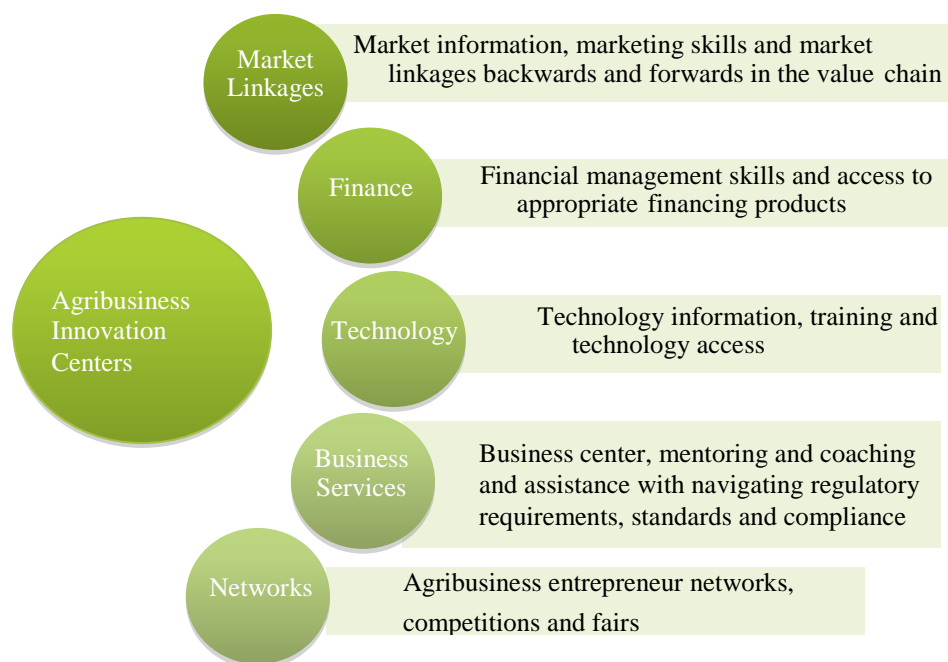


Figure 1: AIC Services

Over the past decade, *infoDev* has accumulated a range of lessons about enabling the start-up and growth of high growth potential enterprises in developing countries. Its recent global assessment: *Growing Food, Products and Businesses*,¹⁰ revealed a number of critical success factors for an intervention similar to an AIC (the conclusions of the global study are available online):

- Help clients manage risk: Agribusiness is inherently risky, because of its reliance on farming (which is susceptible to such environmental risks as flood, drought, and pests) and perishable products. Critical to the success of an AIC is to help agro-processors manage these risks above and beyond the business

Results from Agribusiness Incubation

🇨🇱 Fundación Chile:

Initial investment: \$50 million

Entrepreneurs' sales: \$425 million

🇮🇩 IAA-IPB, Indonesia:

Initial investment: \$300,000

Entrepreneurs' sales: \$8 million

¹⁰The global assessment carried out by *infoDev* to understand the impact and lessons from agribusiness incubators and innovation center is available at <http://www.infodev.org/en/Article.800.html>.

Agribusiness Innovation Center in Nepal: Report

challenges that any enterprise faces in any industry.

- Understand the characteristics of the value chain: The agribusiness value chain can be long with critical dependencies between each element in the chain. The AIC must understand the state and dynamics of the value chain to assist the agro-processing enterprise in being successful. The World Bank has found in its review of agribusiness investments that a strong focus on a few crosscutting issues, locations, or value chains with an established comparative advantage and strong market prospects provides an opportunity to “pilot difficult reforms, demonstrate success, and learn from those efforts in scaling up the program.” *infoDev* has, therefore, sought to pro-actively identify a few initial focus areas for each AIC.
- Proactively identify and promote higher value market opportunities: The agribusiness sector is complex and plagued by information asymmetries that often prevent enterprises from recognizing high-value business opportunities. An important role of the AIC is to help the enterprise gain access to relevant market information.
- Maintain a broader goal of demonstrating innovative business propositions: The desired catalytic effect of an intervention of an AIC does not necessarily happen without a deliberate, tangible effort. Specific programs must be designed for this purpose.
- Design and operate business incubation in line with good practice.
- Business incubation good practices include the following, regardless of sector:
 - Ensuring a strong selection process that identifies and cultivates innovative, growth-oriented entrepreneurs.
 - Developing strong partnerships with the public and private sector.
 - Locating the AIC in a geographic location that is attractive to the target clientele. The World Bank’s review of agribusiness investments collaborates this lesson: “Locations with revealed competitive advantage and proven investor demand should be preferred over attempts to initiate new industries in new areas.”
 - Ensuring that the AIC manager and service provider have entrepreneurial, and preferably industry, knowledge and that these staff members have incentives that align with the desired outcomes and impacts of the AIC.
 - Obtaining a strong capital structure.
 - Putting in place a governance framework that allows the management to operate the AIC in a businesslike manner.
 - Continuously adapting the focus and business model of the incubator in line with evolving market conditions.

infoDev has sought to address each of these factors in the design of the AICs.