

FORWARD Nepal



Annual Report 2012/13 (2069/70)



VISION

NORTHWARD, with a pleasant and well-balanced society in which all people live in dignity and peace.

MISSION

FORWARD facilitates marginalized people to build their livelihoods through technology generation, social mobilization, advocacy and optimum utilization of available resources in a participatory approach.

GOAL

Community efforts to reduce poverty of the marginalized groups and promote and sustainable development implementations.

FORWARD Nepal is a member of NGO Federation, NGO Networking Group on Climate Change (NGONCC), National Riverbed Farming Alliance, and Network for Agro-Biodiversity Conservation, Nepal (NABIC).



**Forum for Rural Welfare and Agricultural
Reform for Development
(FORWARD Nepal)**

For further information

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FOREWORD

This annual report gives an overview of FORWARD Nepal's programs and interventions carried out in the fiscal year 2069/70 (2012/13). It highlights the activities and projects implemented by the organization, the key achievements, and the list of visitors, staff, projects and financial summary. It also highlights the challenges we faced. Few highlights of success stories from the field are also included.

With the celebration of 16th anniversary on September 1, 2012 FORWARD Nepal reached out to 341,128 direct beneficiary households through its 59 projects in 42 districts. Those projects focused towards improving food security, household incomes and resource conservation to contribute to sustainable livelihoods of rural people. A total of 103 staffs were directly employed by the organization in these programs. Our partnership with USAID/NEAT remained successful in terms of developing a package of lentil production technology for its commercialization and technology dissemination. Lentil production in the project area (11 districts of Terai) has boosted by 44 percent compared to the baseline. Low cost technologies introduced in dairy animal farming through local feed management practices and commercial promotion of dairy farming in partnership with Practical Action Nepal in Chitwan was another good example of our work. Research and analysis of agricultural

inputs sector in selected districts of Nepal which was funded by SAMARTH/National Market Development Program has given a depiction in understanding the current market dynamic of agriculture input supply chain. The capacity building of local organizations for the promotion of livelihood and food security in Makwanpur district with Plan Nepal funding has greatly contributed to commercialization of fresh vegetables in the district. In rainy season, forty percent of fresh vegetable in Kalimati vegetable market in Kathmandu are supplied from Makwanpur district through local cooperatives.

A considerable impact has been made at the community level from our on-going projects which are highlighted in the report. As a pioneer organization on Riverbed Farming (RbF), FORWARD Nepal has been continually involved in the formulation of national level RbF policy jointly with RbF alliance under the leadership of Ministry of Federal Affairs and Local Development which is about to be approved by the government. FORWARD has also been able to purchase a 5.15 kattha of land in Bharatpur Municipality, Chitwan this year for its building construction. We can say that those were some of the achievements of FORWARD Nepal over the last one year. Our efforts need to be continued for up-scaling of potential subsectors for the benefit of farmers and to contribute to national economy.

Extension of partnership with universities and institutions abroad is another remarkable step of the organization. FORWARD Nepal has entered into a partnership with Asian Institute of Technology (AIT), Thailand for "The Agricultural Learning Exchange for Asian Regional Networking (AgLEARN)" program. This AIT led project involves multinational partners including a total of 9 different partner organizations from Thailand, India, Nepal, Bangladesh and Cambodia. FORWARD Nepal expects to benefit from this project through 'South-South Collaboration for Technology Transfer'."Solar Power and Water for Life: Institutional Design with Randomized Field Experiments", a research project funded by Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan is also another initiative of partnership. This project is led by Hiroshima University, Japan while Alternative Energy Promotion Center (AEPC), Asian Institute of Technology and Management (AITM), and FORWARD Nepal are the Nepalese collaborators. Also we have extended our cooperation and partnership with some universities in Canada for bidding the projects.

It is a matter of happiness that FORWARD has become a learning home for the career advancement of young staff members. Many of our staffs have got opportunities of employment with other reputed organizations. Staffs are accepted by foreign universities for Master and PhD courses. It is also worth mentioning that two senior staff members of FORWARD have completed their PhD from HU, Japan. Among them Luni Piya has returned to FORWARD Nepal and restarted working as Program Coordinator since January 2013. This has added a new dimension to the organization portfolio. 2012/13 was a challenging year in many ways, but responding to challenges has always motivated

FORWARD Nepal into action. Partnership with multiple donors and local government has been satisfactory to reaching out to the needy community through various pro-poor oriented project activities. Our achievements have made us even more resolute and committed to confronting the multitude of challenges faced by the poor.

Looking ahead in contrast to our previous work and achievements, the challenges for NGOs like ours are never ending. Program implementation models and priority sectors of donors are complex and frequently changing. However, we have understood that those changes are for effectiveness and sustainability. Input support or subsidies to farmers in many developmental projects have now been commonly reduced. Emphasis is given more on linking farmers to technology providers and market value chain. This has added new challenges to the smallholder farmers as well as donors to work together in the community without the provision of input support. In this context, we have seen our roles on facilitation process in putting more value on technology extension, commercialization and market value chain aspects. Preferences are given to local district based partnership but local partners may not have all the expertise in the required field for the project interventions. In such circumstances we have to formulate innovative approach to work jointly with local partners and donors for greater impact of the project interventions. Besides, the preparatory work of larger projects for Nepal are set mostly in foreign countries or at INGOs or international consulting firms level and they are not timely known to NGOs. Also NGOs in Nepal have to compete with INGOs and international consulting firms in bidding projects as many INGOs are working as project implementer rather than working through local partners. Hence, making us a very competitive

NGO and extending our institutional relation with other potential donors and partners is vital and adds further challenges for the future.

FORWARD Nepal has now prepared five years' strategic program planning. Some adjustments have been made in our mission, goal, objectives, target and organizational structure to suit the present context for effectiveness and sustainability. This document will guide us in moving forward to achieving its goal and run the future programs keeping the marginalized communities in the centre for reducing their poverty through integrated and sustainable development interventions.

All the work done and achievements made during the year were the collective efforts and hard work of our staff members, partners/donors, local government officials, farming communities, board members, supporters and local/national media. For this, we would like to extend our heartfelt thanks to all of you for your support and encouragement. The editorial board and Worldwide Print Solution at Kathmandu are very much thankful for their services for the timely publication of this report.

Thank you,

Prof. Naba Raj Devkota, PhD
Chairperson
FORWARD Nepal

Netra Pratap Sen
Executive Director
FORWARD Nepal

September 1, 2013

ABBREVIATIONS AND ACRONYMS

%	Percentage
ADB/N	Agricultural Development Bank, Nepal
AFU	Agriculture and Forestry University
AI	Artificial Insemination
AICL	Agricultural Inputs Company Limited
AIT	Asian Institute of Technology
ASI	Adam Smith International
BARI	Bangladesh Agriculture Research Institute
BMZ	Federal Ministry for Economic Cooperation and Development
BS	Bikram Sambat
CARIAD	Center for Advanced Research in International Agricultural Development
CAZS	Center for Arid Zone Studies, Bangor University
CBOs	Community Based Organizations
CBSP	Community Based Seed Production
CCIC	Chamber of Commerce and Industries, Chitwan
CFUG	Community Forest User Group
CIMMYT	International Center for the Improvement of Maize and Wheat
COB	Client Oriented Breeding
CLDP	Community Livestock Development Project
CSISA	Cereal Systems Initiative for South Asia
CWN	Concern Worldwide Nepal
DAO	District Administration Office
DADO	District Agriculture Development Office
DDC	District Development Committee
DFID	Department for International Development (UK)
DFO	District Forest Office
DLS	Department of Livestock Services
DLSO	District Livestock Service Office
DoA	Department of Agriculture
DoE	Department of Environment
DPAC	District Project Advisory Committee
FAO	Food and Agriculture Organization
FFS	Farmers' Field School
FORWARD Nepal	Forum for Rural Welfare and Agricultural Reform for Development

FUGs	Forest Users Groups
FYM	Farm Yard Manure
GDP	Gross Domestic Product
GOs	Government Organizations
Ha	Hectare
HBDT	Himalayan Bio-Dynamic Development Trust
HES/P	Household Economic Security/Plan
HHs	Households
HICAST	Himalayan College of Agricultural Science and Technology
HMRP	Hill Maize Research Program
HVCs	High Value Crops
INGOs	International Non-Governmental Organizations
IAAS	Institute of Agriculture and Animal Sciences
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
ILRI	International Livestock Research Institute
IPM	Integrated Pest Management
IRD	Informal Research and Development
JT	Junior Technician
JTA	Junior Technical Assistant
Kg	Kilogram
LANN	Linking Agriculture, Nutrition and Natural Resource Management
LRPs	Local Resource Persons
LSC	Livestock Service Center
LF	Leasehold Forest
MASF	Market Access for Smallholder Farmers
MFIs	Micro Finance Institutions
MoAC	Ministry of Agriculture and Cooperatives
mt	Metric tons
MoU	Memorandum of Understanding
MPFG	Multi-purpose Farmers' Group
NARC	Nepal Agricultural Research Council
NARDF	National Agricultural Research and Development Fund
NEAT	Nepal Economic Agriculture and Trade
NFRP	Nepal Flood Recovery Program
NGLRP	National Grain Legumes Research Program
NGOs	Non-Governmental Organizations
NMDP	Nepal Market Development Program
NSCL	National Seed Company Limited
NLBC	Nepal Livestock Breeding Center
NRs.	Nepalese Rupees
NTFPs	Non-Timber Forest Products
PAC	Producers' Apex Committee
PVS	Participatory Varietal Selection
RbF	Riverbed Farming

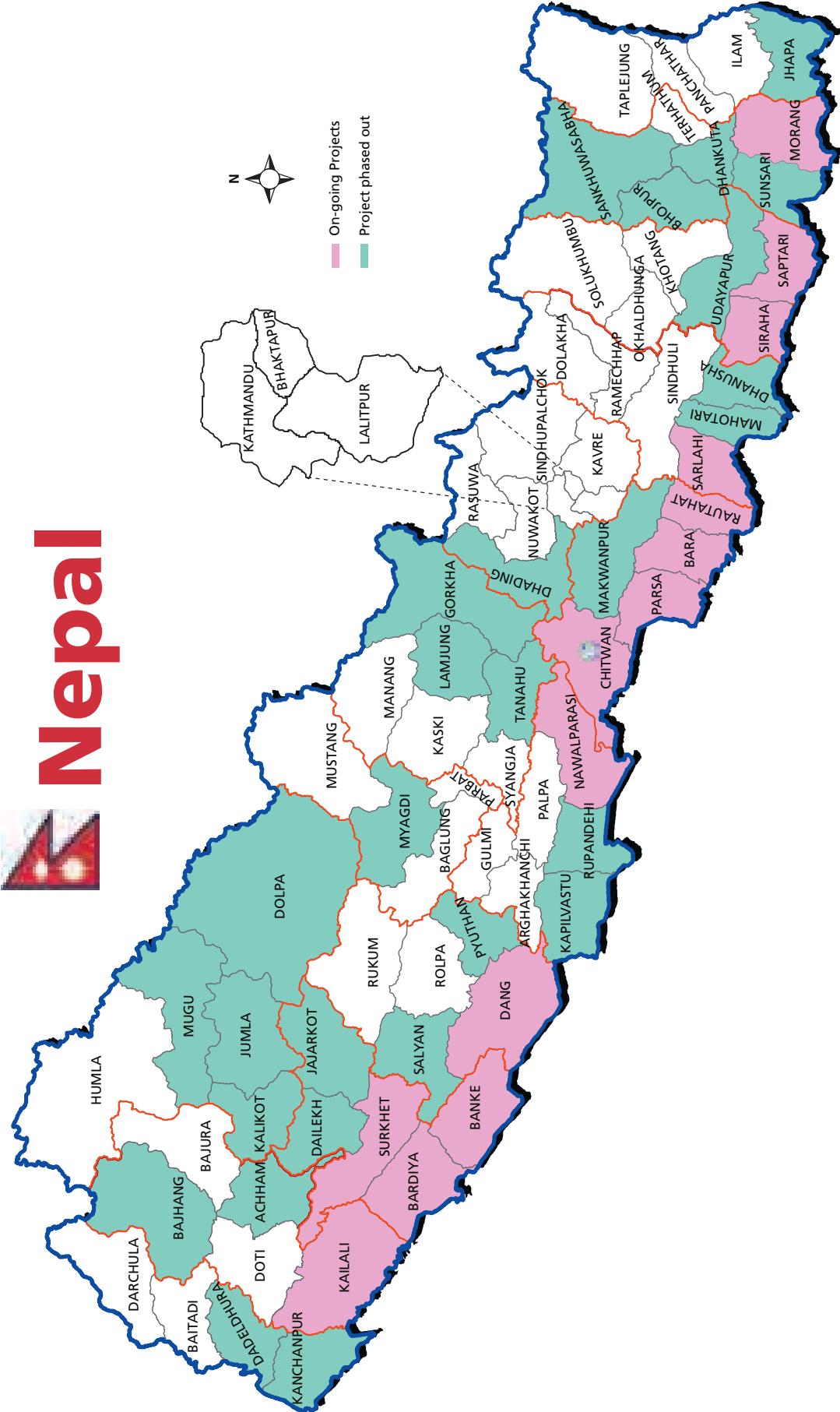
RDMA	Regional Development Mission for Asia
RRC	Rainfed Rabi Cropping
RSTL	Regional Seed Testing Laboratory
RWSC	Rural Women Service Center
SAO	Senior Administration Officer
SIFS	Sustainable Integrated Farming System
SPO	Senior Program Officer
TL	Truthfully Labeled
ToT	Training of Trainer
UK	United Kingdom
USAID	United States Agency for International Development
VADC	Village Agriculture Development Committee
VAHWs	Village Animal Health Workers
VDC	Village Development Committee
WFP	World Food Program
WHH	Welthungerhilfe
WHP	Water Harvesting Pond

UNITS

1 <i>Kattha</i>	= 333 square meters
1 <i>Ropani</i>	= 500 square meters
1 <i>ha</i>	= 20 <i>Ropani</i> = 30 <i>Kattha</i>
1 <i>Lakh</i>	= 100,000

GEOGRAPHICAL COVERAGE OF FORWARD NEPAL

Nepal



A BRIEF INTRODUCTION TO FORWARD NEPAL

FORWARD Nepal is a non-profit, service-oriented non-governmental organization established in 1997 to help disadvantaged communities. It is registered at the District Administration Office, Chitwan, and affiliated to the Social Welfare Council, Nepal. The organization aims at reducing poverty of marginalized communities through integrated and sustainable development interventions. FORWARD's program activities are focused towards improving food security, household incomes and resource conservation to contribute to sustainable livelihoods. It integrates social mobilization, agriculture, livestock, aquaculture, farm forestry, biodiversity conservation, value chain and market development in a multi-stakeholder approach in partnership with the government, non-government organizations and the private sector both at national and local levels. During the course of its 16 years of professional interventions, the organization has successfully implemented 59 projects covering 341,128 direct beneficiary households in 42 districts. Currently, the organization has 12 specialists and 7 support staffs at the center and over 83 field staffs working in different project districts.

Program Thematic Areas

FORWARD is committed to promoting sustainable livelihoods for resource-poor communities through prudent

management of available resources. It has identified multiple thematic areas for interventions pertaining to the livelihood systems. The interventions are tailored to the specific needs and priorities of the target communities. The intervention process essentially integrates holistic perspectives and multi-stakeholders efforts from local to national level. The integration of key interventions both in horizontal and vertical dimensions has brought about positive socio-economic impacts on the communities. The host of interventions that fall under five program thematic areas are summarized below:

i) Food Security and Sustainable Livelihoods

- Food crops
- High value commodities (cash crops, fisheries, and livestock)
- Farm forestry and Non Timber Forest Products (NTFPs)
- Small infrastructures (irrigation, collection centers, storage and resource centers)
- Farm mechanization

ii) Business Promotion and Market Development

- Enterprise development
- Installation of small processing plants
- Value addition
- Market networking

iii) Participatory Research and Development

- Participatory innovation and technology development
- Development studies and technology dissemination

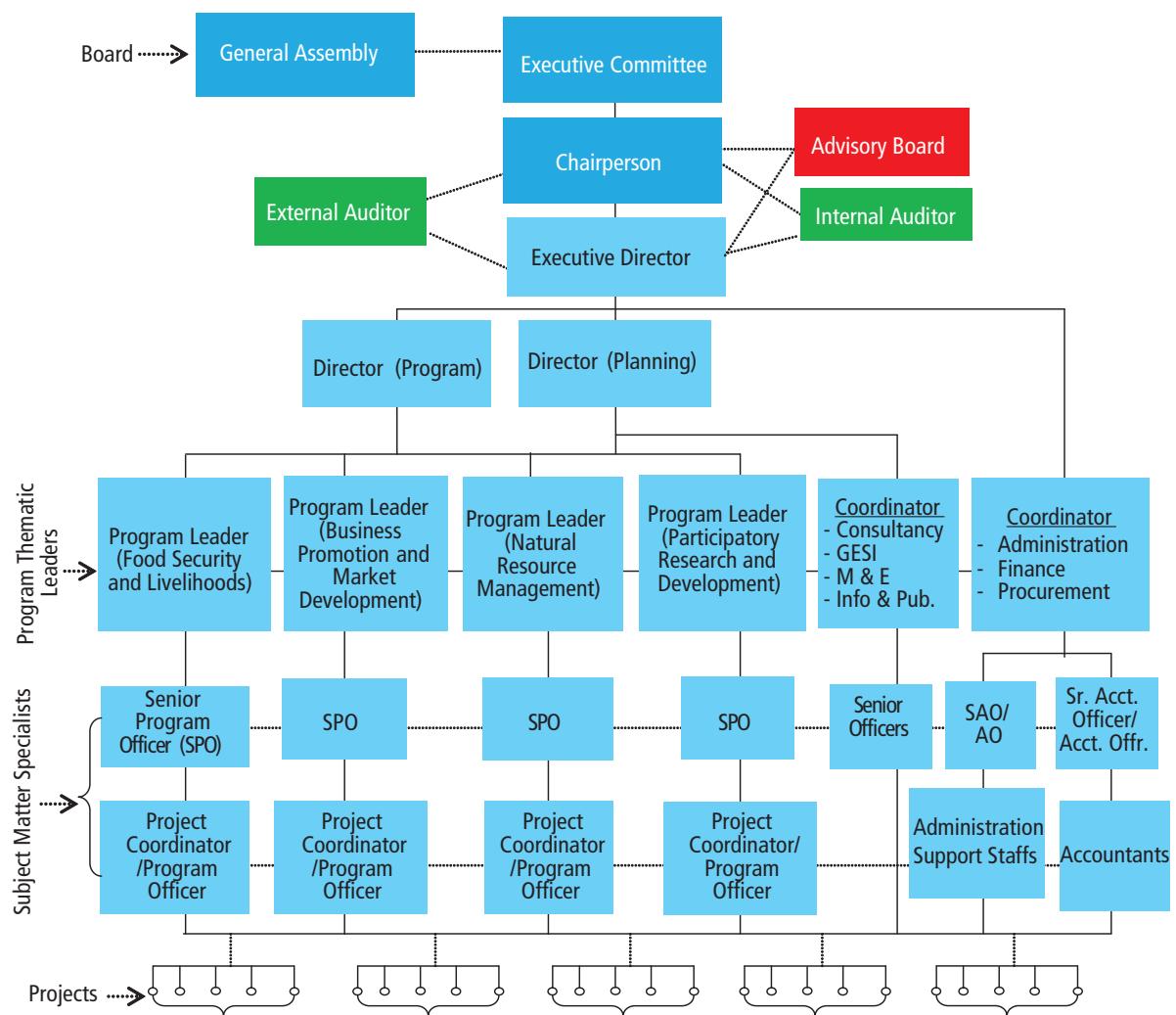
- iv) Natural Resource Management
 - Biodiversity conservation and optimum utilization
 - Environment friendly and climate change resilient technology
 - Disaster risk reduction and emergency response
 - Ecosystem health
 - Promotion of alternative energy

 - v) Cross-cutting themes
 - Gender and social inclusion
 - Capacity building
 - Participatory monitoring and evaluation
 - Climate change
 - Advocacy and policy lobbying
 - Institutionalization
- Strategies/Approaches**
- Devise a value chain approach for selected sub-sectors within agriculture, livestock, forestry, and other natural resource management.
 - Actively engage target communities through social mobilization in research, capacity building and development interventions to ensure in the place of ensuring the realization of their stakes and ownerships for their own development.
 - Utilize and promote local knowledge and skills in devising resource management solutions through participatory action research and development approach.
 - Address gender and social inclusion issues by ensuring participation of disadvantaged members of the community at every step of the development programs.
 - Facilitate employment opportunities through vocational trainings and income generation activities targeted for youths.
 - Develop and institutionalize local resource persons, local resource centers, and community based organizations for the sustainability of the systems developed.
 - Facilitate learning and sharing platform as appropriate to likeminded institutions and individuals for working with the deprived communities.
 - Seek collaboration with various stakeholders including governmental and non-governmental organizations, academia, corporate and funding agencies at local, national and international levels as appropriate for sharing knowledge, skills, experiences and other resources.

Governance

The Executive Committee or Board elected by the General Assembly provides overall policy direction and guidance to the organization. All the Board members are volunteers who contribute to strategic re-orientation and revision of policies. The chairperson and founder members collectively provide patronage to the organization. The Executive Committee delegates its authority to the Executive Director to hold the responsibility for implementing policy decisions and day-to-day management of the organization while the Directors lead their team of multidisciplinary specialists for overall execution of their respective programs run by the organization. Moreover projects are managed by the Project Leader/ Coordinators while the center oversees its credibility and accountability.

ORGANIZATIONAL STRUCTURE



PROGRAM HIGHLIGHTS

During the year 2012/13, FORWARD implemented 11 projects in 23 districts of the country. This section describes the projects and key activities implemented and the progress made during the reporting period.

Table 1: Summary of FORWARD implemented projects, 2012/13

S.N.	Projects	Districts	Project Duration	Budget (2012/13) (NRs.)	Funding source
1	Household Economic Security (HES) Program in Morang District	Morang	2007-2013	2,462,318	Plan Nepal
2	Capacity Building of Local Organizations to Implement Sustainable Agro-based Livelihood Program in Makwanpur District	Makwanpur	2007-2012	1,096,042	Plan Nepal
3	Commercial Promotion of Lentil Sub-sector in 11 Terai Districts of Nepal	Siraha, Saptari, Sarlahi, Rautahat, Bara, Parsa, Nawalparasi, Banke, Kailali, Dang, Kanchanpur	2011-2013	46,215,139	USAID/ Chemonics/ NEAT
4	Improving Food Security through Community Based Seed Production Initiatives in Surkhet District	Surkhet	2011-2013	735,000	CIMMYT/HMRP
5	Kitchen Gardening and Nutrition Program in Kailali, Kanchanpur and Dadeldhura Districts	Kailali, Kanchanpur and Dadeldhura	2011-2012	372,534	NFRP/USAID/ FINTRAC
6	Riverbed Vegetable Farming	Banke	2011-2013	738,849	Helvetas
7	Sustainable Integrated Farming Systems (SIFS)	Chitwan	2012-2014	10,235,000	WHH/ BMZ
8	Research and Analysis of Agricultural Inputs Sector in Selected Districts of Nepal	Rupandehi, Palpa, Syangja, Jhapa, Ilam and Morang	March to May, 2013	2,178,884	SAMARTH-NMDP/UKaid/ ASI
9	Nepal Market Development Program (NMDP) - Dairy Sub Sector	Chitwan and Nawalparasi	2013-2014	625,000	SAMARTH-NMDP/UKaid/ ASI
10	Improving Livelihoods of Smallholder Dairy Farmers through Feed Management in Kailali District	Kailali	2012-2014	841,849	ILRI/CSISA Phase II
11	Enhancing Productivity and Market Linkages- Improving the Livelihoods and Food Security of Smallholders in Asia	Surkhet, Banke and Chitwan	2013-2015	1,875,000	USAID/ RDMA

HOUSEHOLD ECONOMIC SECURITY (HES) PROGRAM, MORANG

Designed in a child-centered development framework, the HES program focuses on poverty alleviation and livelihood improvement of the target communities through technology transfer, institutional development and natural resources management interventions. Agriculture is the major livelihood domain of almost all resource poor families in the project area. Cooperatives, Village Development Committees (VDCs), Producers' Apex Committee (PAC) and producers' groups were facilitated to identify sustainable resource management opportunities for household economic security of the target community.

With Plan Nepal's funding, FORWARD has been implementing livelihood improvement interventions since 1998 in various VDCs of Morang district. The project has covered more than 29,000 HHs in different phases over the years. The communities in ten previously phased out VDCs were provided with distant technical support; ten more VDCs towards maturation phase received general services; and 16 VDCs on promotional phase were supported directly through different project interventions pertaining to sustainability of livelihood promotion initiatives through institutionalization and integration of PAC with HES sub-committee on one hand and increased entrepreneurship amongst youth, landless and marginal communities on the other.

Agriculture, Forest and Environment sub-committees formed by 26 VDCs, producers' groups and PACs were facilitated on i) identification of locally available resources, ii) development of targeted programs to the marginal groups, iii) program prioritization, iv) program approval from VDC council, v) development of linkage and coordination with other stakeholders, and vi) lobbying to other service providers to support on the plan of the respective VDCs. HES sub-committees facilitated to register agricultural cooperatives in the respective VDCs for ease of inputs acquisition and marketing of farm products. The VDCs allocated NRs. 3.1 million to implement their HES plan last year.



Farm Forestry at Rangeli VDC, Morang

Similarly, District Producers' Apex Committee (DPAC) was registered in District Administration Office (DAO) Morang for lobbying on behalf of the farmer's right, resource tapping and activity implementation in the district. Moreover, facilitation was provided to 12 cooperatives for registering in ten VDCs during the reporting year. Cooperative management training helped on efficient operation, transparency and dynamism of those newly registered cooperative leaders.

The programs extended improved technical services to the poor farmers. Farming support was provided for leasehold vegetable production, agro-forestry and community forestry, whereas semi-commercial vegetable farming was established as a profit oriented farming business. Farmers succeeded in income generation that improved their affordability for children education, healthcare, nutrition/ food security, daily living expenses and collection of assets.

Leasehold vegetable farming practiced in an area of 3.4 ha by 48 households remained a lucrative business. Farmers produced 95,640 kg vegetables with aggregate gross income of

NRs. 1,938,652. Gross income per household (HH) was NRs. 40,388.

Similarly, agro-forestry farming practice was promoted in 5.3 ha area managed by 80 farm households. Multi-tier farming of timber/ forest trees and seasonal crops (like vegetables and spices) on the ground helped increase the income of the farmers. Farmers produced 110,960 kg fresh vegetables and spices during the last one year with aggregate gross income of NRs. 2,086,341. Average annual gross income per HH was NRs. 26,079. Similarly, agro-forestry is growing as promising system in the project area and farmers' now have better access to services from District Forest Office (DFO) and District Agriculture Development Office (DADO).

HES program in Morang also supported community fish farming to the farmers from Nocha and Amahibariyati VDCs. The existing five ponds of total 1.73 ha water surface area were managed by 68 farm families in coordination with DADO Morang. Supports were provided for dike maintenance, fingerling stocking, pond composting/ fertilization and fish feeds. The farmers were able to harvest 6,442 kg fish with the gross

Leasehold farming, Morang



income of NRs. 1,126,080 which is equivalent to an average income of NRs. 16,560 per HH.

Group level training on seed production was provided to 389 HHs organized into 11 groups. Concepts of seed quality, seed plot techniques, seed processing and storage technology were introduced to the trainees. Seed production of broad-leaf mustard, four-season bean, brinjal and lady's finger was initiated by farmers from this year.

The project supported 100 vegetable growers for commercial farming. Previously, those farmers were growing vegetables in agro-forestry and leasehold blocks. Farmers were supported through regular field visits, proper guidance and package based

orientation. Thus, farmers produced 335,239 kg fresh vegetables in an aggregate with the total income of NRs. 6,557,823. This commercialization initiative enabled farmers in building assets like land, goats, construction of houses etc. and increased access to health, education and also nutrition facilities.

Livestock health campaign was organized for two days in Kadmaha livestock service center, with the support of DLSO Morang. Treatment for liverfluke and worms, vaccination against PPR and Black Quarter, and cure for infertility of livestock were conducted during the campaign. A total of 432 animals owned by more than 121 HHs were benefitted by this activity.

CAPACITY BUILDING OF LOCAL ORGANIZATIONS TO IMPLEMENT SUSTAINABLE AGRO-BASED LIVELIHOOD PROGRAM IN MAKWANPUR DISTRICT

Introduction

“Capacity Building of Local Organizations to Implement Sustainable Agro-Based Livelihood Program” in Makwanpur District is a Plan Nepal funded and FORWARD implemented program. This project started from 2002 and continued until this year. Being the last year of the project, activities were planned for sustainable transfer of the project’s good practices to local institutions. In the previous years, the project was implemented in 28 VDCs of the district in close coordination and collaboration with Village Development Committee (VDC), District Development Committee (DDC), District Agriculture Development Office (DADO) and District Livestock Services office (DLSO). The project had established local resource centers (LRCs) and mobilized local resource persons (LRPs) for the sustainability of the project activities. In last phase, household economic security plan (HESP) was developed with direct involvement of the government, Community based organizations (CBOs) and VDCs. The project was launched as piloting program in four VDCs of the district namely Manahari, Namtar, Palung and Chitlang. These VDCs are taken as model demonstrations. DADO Makwanpur will take initiative to establish and

strengthen Village Agriculture Development Committee (VADC) in the remaining VDCs of the district. The project goal is to reduce food insecurity and increase income through agro-based livelihood programs in Makwanpur district. It has two major objectives

- Develop strong institutional base at VDC level by capacitating VADC and execution of livelihood activities to pro-poor households at VDC level through coordination of stakeholders as per the VADC guidelines.
- Capacity building of LRP and LRCs at VDC level to deliver services and inputs to farmers’ level.



VADC coordination meeting, Makwanpur

Activities conducted during the last year include finalization and handover of VADC guidelines to concerned authorities, technical training to LRP s, refreshers training to Village Animal Health Workers (VAHWs), district level stakeholders orientation to institutionalize VADC guidelines, VDC level workshop to reform VADC, orientation to VADCs, facilitation to VADC meeting and formation/reformation/registration of PAC. The other activities were organization of stakeholders meeting at VDC level, CBOs orientation for VADC roles and responsibilities, refresher training to nursery owners, proposal and report writing training, phase out meeting at VDC level and at district level.

Major achievements during the 10 years of project implementation:

- Commercial pockets of vegetable production has been developed within the district; like Agra, Gogane, Fakhel, Kulekhani, Sisneri, Markhu, Namtar, Bhainse, Bhimphedi (Jurikhet) and so on. Farmers of Makwanpur district alone produce about 40% of the rainy season vegetable requirements of the Kathmandu valley.
- Good market linkage has been developed for vegetable producers in Chuniya of Bhainse, Markhu, Bajrabarahi, Chitlang and Fakhel area.
- Capacity of local institutions enhanced, like those of Rural Women Service Center (RWSC), VADC, cooperatives and producers' groups in different localities.
- Off season vegetable production increased due to expansion of irrigation facility in 1,779 ha area owned by 1,335 HHs through 242 Rain Water Harvesting Ponds (RWHP) in dry season.
- Ninety-three LRP s developed in rural area for technology dissemination in agriculture sector.
- Forty-nine VAHWs developed in rural area for livestock related technology dissemination.
- Promotion of vegetable cultivation technology in poly-house (like tomato for rainy season).
- New crops like ground apple and kiwi fruit introduced in the program area.
- Fourteen multipurpose nurseries established through the project are supplying off-season vegetable seedlings and fruit saplings.
- Seventeen VADCs are functional for planning of agriculture related activities and fund raising process (15% of VDC budget allocated in agriculture sector).
- Qualitative achievement in knowledge and skill of improved cultivation practices of crops, vegetables, fruits, and Non Timber Forest Products (NTFP) have increased among the community members of the district.
- Twenty Agrovets promoted by the project are providing production inputs in the rural area.
- Collection centers constructed by the project support are providing services for collective marketing of the products.

COMMERCIAL PROMOTION OF LENTIL SUBSECTOR IN 11 TERAI DISTRICTS OF NEPAL

To enhance the production and productivity of lentil through commercial farming and improving linkages among value chain actors so as to promote lentil farming as a viable commercial enterprise, the project NEAT-GRA-001-STN was implemented from September 2011 to June 2013 by FORWARD Nepal with financial support from USAID/NEAT. A total of 17,537 households from 71 VDCs and two municipalities of 11 Terai districts viz. Sirha, Saptari, Sarlahi, Rautahat, Bara, Parsa, Nawalparasi, Dang, Banke, Bardia and Kailali were covered by the project in two crop cycles. In the first crop cycle, 12,444 HHs were the direct beneficiaries who received lentil seeds and technical supports. In the second cycle, additional 5,293 HHs were included as beneficiaries. Gender disaggregated data shows 34 percent women beneficiaries, although the proportion varied among districts mainly due to the differences in the composition of the population (Figure 1). Social inclusion aspect was taken due care in the selection of beneficiaries; socially disadvantaged groups (DAGs) comprising Dalits, Muslims, and Madhesis accounted for 87% of total beneficiaries covered by the project (Figure 2).

Major Accomplishments

Cropping System

Baseline study of beneficiary households (n=704) showed 26% area under relay sole, 15% area relay mixed, 35% area mixed post-rice and 24% under post-rice sole cropping in the project VDCs. Proportion of area under relay lentil was higher in Bara, Parsa, Sarlahi, Sirha, and Bardia districts. There was not much difference in the average yield (range 24-26 kg/kattha) of lentil in relay or post-rice system.

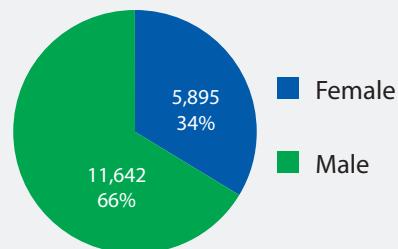


Figure 1

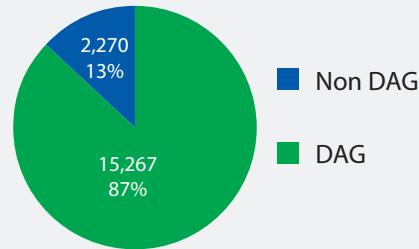


Figure 2

Figure: Percent beneficiaries by gender (Figure 1) and social inclusion (Figure 2)

Cost of Production

Study on economics of lentil production among 507 beneficiary HHs in the project districts revealed that cost of production was the highest (NRs. 660.25 per kattha) in post-rice mixed lentil system followed by post rice sole (NRs. 584.75), sole relay (NRs. 440.51) and mixed relay (NRs. 436.93). The cost of field preparation and additional labor used in management of other component crops under post-rice sole and mixed cropping were the reasons for higher cost in these systems. Based on the total costs involved in production and total revenue from the system, the benefit cost ratio was the highest (3.41:1) for relay mixed cropping followed by relay sole (2.30:1), post-rice mixed (1.98:1) and post-rice sole (1.43:1). Relay cropping provided the highest profits per unit land area.

Stemphylium Blight Disease Management

Foliar spray of fungicide Dithane M 45 at the rate of 2 mg/liter of water was effective in reducing lentil yield loss due to Stemphylium blight disease (Figure 3). The average lentil yield from crops receiving fungicide spray was 20 percent higher than those without receiving any spray. Due to changing weather conditions and unusual rains during late winter months, the increase in severity of the disease has been observed in recent years and farmers should use this information for proper crop management.

Weed Management

For the management of broad leaved weeds like Bethe (*Chenopodium album*) in post-rice sown lentils, demonstration of pre-emergence application of Pendimethalin was conducted in all the clusters. Data on weed counts per unit area and seed yields has shown a significant effect of herbicide application in suppressing weed population and minimizing the yield losses due to weeds. Average yield of crops grown in herbicide treated plots was 918 kg/ha while that from the control was only 628 kg/ha (Figure 4).

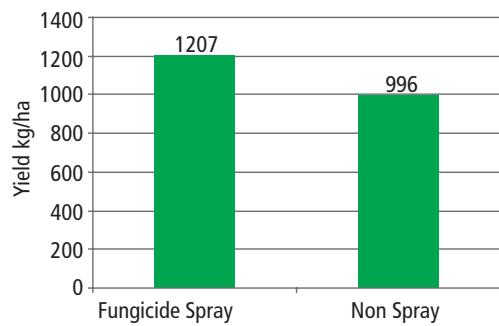


Figure 3: Effect of Dithane M45 spray on lentil yield

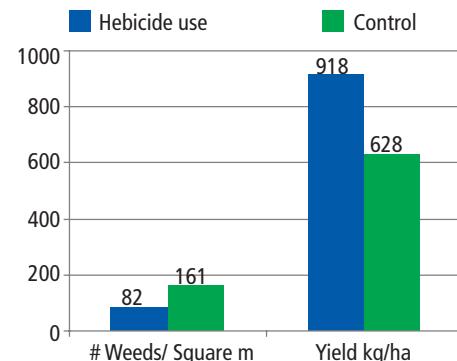


Figure 4: Effect of herbicides on weeds and lentil yields

Demonstration of Technology Package

Results from 1,842 demonstrations of technology package consisting of improved varieties, rhizobium inoculation, seed priming and basal application of fertilizer di-ammonium phosphate (DAP) conducted in project districts were very encouraging with 49 percent yield increment of demonstration plots over the base figure.



Lentil Field monitoring at Banke

Project Impacts on Household Production and Income

As a result of technology adoption, the average lentil productivity increased by 18 percent, total household production by 44 percent and area by 25 percent over the baseline figure. Value chain and market interventions led to an increase in the sale of lentil from 142 kg/HH in the baseline to 174 kg/HH after the project. The average HH income from the sale of lentil was just doubled after project intervention due to the increase in the volume of sale as a result of production increases, value addition and rise in market price of lentil (Table 2).

Supports for Micro Irrigation

Micro irrigation supports were provided to install 69 diesel/ electric pumps, 2 submersible pumps, construction of 3 shallow tube-wells, and repair/maintenance of existing irrigation channel on cost share basis. These supports have created additional irrigation facility to 582 hectares of land of 995 HHs in the project districts.

Seed Production through CBSP Approach

About 85 metric tons of truthfully labeled (TL) seeds of lentil varieties were produced and marketed through 15 CBSP groups. Storage facility of CBSP groups was upgraded through provision of 218 seeds bins of 250 kg capacity on cost share basis.

Collection Center Supports

Supports were provided for the establishment of 7 collection centers; one each in Saptari, Sirha,



Collection centre at Baijapur, Banke

Nawalparasi, Dang and Banke, and 2 in Kailali districts. These centers have been active in collection and marketing of lentil grain and seeds.

Collective Marketing

Approximately 65 percent producer groups used collective marketing system through farmers groups and cooperatives. A total of 7,343 households have marketed 1,060 mt lentils representing 35 % of total produce of 2,013 mt through collective marketing. Value addition through grading/ processing resulted in an extra income of NRs. 5.83 per kg lentil to the growers. Collective marketing approach enhanced bargaining power of farmers, and they were able to get NRs. 3 extra per kg than what they could have got through individual marketing.

It is concluded that in addition to the delivery of technology packages to farmers, improvements in value chains and marketing play crucial roles in enhancing farm level profitability and commercial farming of lentil.

Table 2: Changes in lentil household area, production, and income of lentil growers due to project intervention

Description	Area Kattha/HH	Productivity Kg/kattha	Production kg/HH	Sale kg/HH	Sale price NRs/kg	Income NRs/HH
Baseline n=3,631	10	23	227	142	47	6,717
Endline (n=1,442)	13	27	327	174	77	13,561
% Change over base line	30	17	44	22	63	101

IMPROVING FOOD SECURITY THROUGH COMMUNITY BASED SEED PRODUCTION INITIATIVES IN SURKHET DISTRICT

Introduction

This developmental research project was started in 2012 with the financial support of CIMMYT/HMRP and is being implemented in nine VDCs (Kunathari, Satakhani, Chinchhu, Lekhparajul, Lakegaun, Pokharikanda, Jarbutta, Harihpur, and Naranga) of Surkhet district.

Objective

The project aims to increase household income and food security of resource poor hill farmers through increased productivity and production of maize. As primary beneficiaries, the project targets disadvantaged and marginal people including Dalits, Janajatis and women who are not food self-sufficient.

The program has integrated seed production through Community Based Seed Production (CBSP) groups, Informal Research and Development (IRD) kit distribution, Participatory Varietal Selection (PVS) (mother and baby trials) and intercropping trials involving maize. Strengthening technical and entrepreneurship skill of CBSP groups for the production and marketing of maize seeds with improved market linkage was an important activity of the project. As of June 2013, there have been 1,060 direct beneficiaries from IRD, seed

production, PVS and intercropping trials. To make farmers aware of new maize varieties and associated technologies, 974 IRD kits of new and high yielding varieties (Arun-1, Poshilo Makai, Deuti, and Manakamana-3) were distributed to farmers around the CBSP groups. Two CBSP groups with 79 members were formed and they are being supported to produce quality maize seed. These groups have planted 492 kg seeds of Manakama-3, Arun-2 and Deuti varieties on a total of 20 ha of land. For quality assurance, CBSP groups are linked with the Regional Seed Testing Laboratory (RSTL) for field inspection. Cash support of NRs. 500,000 has been provided to the cooperative at Kunathari for the construction of store house. Additionally seed money of



Cooperative building at Kunathari, Surkhet

NRs. 50,000 has been provided to the cooperative for seed business. Two orientation trainings to CBSP groups at Satakhani and Kunathari have been provided before the sowing of the crop.

Three farmers of Chinchhu and Lekhgaun VDCs planted mother trials and 125 farmers have planted baby trials. Seven farmers have participated in intercropping trials conducted in Kunathari, Jarbutta, Chinchhu and Lekhparajul VDCs. Cowpea, cucumber and ginger were intercropped with maize. Regular monitoring and on-site technical support was provided in all the project activities by project staffs.

Results

- The area and production under the CBSPs increased by 1.5 and 2 folds compared to 2011.
- Farmers ranked Poshilo Makai, Manakamana and Deuti as preferred varieties but there is large variation in production on early and late planting.
- Based on the crop cut survey, the highest production was obtained in Deuti.

- Some 20 compost pits were constructed for FYM improvement.
- CBSP marketed 2 tons of seed of Manakamana-3 outside the district this year; but due to early harvesting and low production, farmers are uninterested to sell.

Outputs and Outcomes

- Availability and accessibility of improved maize seed increased in the district.
- Food security situation of the households involved in the project improved.
- Market linkage developed for seed marketing.
- Cooperatives/CBSPs have developed coordination among other related stakeholders like RSTL, DADO, seed company and Agrovets.
- The managerial capacity of Cooperatives/CBSPs has improved and they are becoming more transparent and accountable.
- Level of awareness about seed quality increased through regular meetings and interaction at field level.

RIVERBED FARMING AND MARKETING IN BANKE DISTRICT

Introduction

FORWARD Nepal has a long experience of riverbed farming (RbF). Initially RbF program was implemented in Morang district from 1998/99 in partnership with Plan Nepal. With its success, the program was later scaled out to Banke and other districts. Over time, many governmental and non-governmental organizations have adopted and up-scaled the technology throughout the Terai region. This activity is suitable for disaster affected, landless and land-poor communities residing near to rivers. HELVETAS Swiss Inter-corporation Nepal started riverbed farming program in western Nepal and FORWARD Nepal has been entrusted with the program in

Banke district since 2011. Different crops like watermelon, muskmelon, cucumber, bottle gourd, bitter gourd, balsam gourd, sweet potato, chilly, tomato and asparagus beans were cultivated in the riverbeds and riverbanks in about 84 ha of land in ten village development committees (VDCs) of Banke district. Aggregate production of 673 tons from 679 participating farmers resulted in a gross income of NRs. 12,107,305, in addition to home consumption.

Objective

Landless and land-poor are enabled to cultivate dry riverbeds effectively and sell produce with profits in markets through a localized support system.

Specific Objectives

- An estimated 1,000 landless and land-poor households engage in riverbed farming under leasehold contracts with local authorities in Banke district.
- Around 1,000 landless and land-poor riverbed farmers access wholesale markets for fresh produce during off-season through collection and marketing centers.
- Village and District Development Committees are supporting riverbed farming for landless and land-poor groups actively by participating in project monitoring with some financial assistance.



River bed Farming in Banke district



Watermelon in dry sand, Banke

Target Working District: Banke

Working VDCs: Kanchanpur, Baijapur, Binauna, Fattepur, Kamdi, Bankatti, Betahani, Holiya, Udarapur and Sonpur.

Target group: Socially and economically disadvantaged groups, landless (less than 5 Kattha registered land), and land-poor HHs (less than 8 kattha registered land).



Ram Bilash Mallaha caring his watermelon

SUCCESS CASE

Money, Rice and Wheat Grow in Sand

Ram Bilash Mallaha is a landless farmer of Holiya VDC Ward 4 of Banke District. He has a family of 14 members to provide for. He has been participating in RbF Program implemented by FORWARD Nepal to support the landless and natural disaster victims since 2011 (2068 BS). Before joining the group, Mallaha was engaged in door to door marketing of vegetables, which he used to bring from Rupediya (India) and sell in the village. Though he was involved in door to door marketing, he could not provide enough food to his family members. But his life became easier after being involved in RbF. Though he is landless, he was inspired and motivated by the program, and he took four *katthas* of land in lease for the vegetable farming. He pays NRs. 1,600 per year for the land.

He was happy when he was able to save 22,000 in the starting year. Being motivated by that success, Mallaha additionally leased 10 *kattha* of land near his house at NRs. 400 per *kattha* annually. He grows watermelon, muskmelon, bottle gourd, pumpkin, cucumber, etc. in his land and is able to sell the products equivalent to 45 thousands. Besides, he exchanges his vegetables with wheat and rice. He has exchanged 1,600 kg of wheat and 340 kg of rice with his vegetables, and he still has surplus vegetables for sale, expecting an income of about NRs. 20 thousands from it. Altogether, he is able to get income of NRs. 113,000 in one year. Now Mallaha is providing education to his children and he is not worried for his daily expenditure. Besides, he has deposited 35 thousands in bank, and is planning to buy additional land for his family. Also he is taking advice with technicians for the expansion of RbF.

Mallaha expresses his happiness for being successful in RbF and thanks HELVETAS/ FORWARD Nepal for showing him the right way of income generation. He suggests all the farmers to be involved in RbF to generate income.

SUSTAINABLE INTEGRATED FARMING SYSTEM (SIFS) IN SOUTH ASIA

SIFS project is funded by the Federal Ministry for Economic Cooperation and Development (BMZ) and co-funded by Welthungerhilfe (WHH) Germany. The project is implemented by six partners in three South Asian countries including Nepal, India and Bangladesh to promote SIFS amongst the people living in remote and least developed areas of the countries. FORWARD Nepal and Himalayan Bio-Dynamic Development Trust (HBDT) have been executing the project in Nepal since November 2011 in Shaktikhor and Siddhi VDCs of Chitwan district covering 1,433 HHs, after adding 459 HHs in the first quarter of 2013. The project has prioritized marginalized communities of Chepangs, Tamangs and poor households of the rural area. Farmers' groups, Community Forest Users' Groups (CFUG), Leasehold Forest Users' Groups, seed producers groups, farmers' cooperatives, market management committees etc. are the beneficiary members of the SIFS project in Nepal.

The project targets the most vulnerable groups to achieve the goal of poverty reduction and increased food security thereby contributing to Millennium Development Goal 1. Beneficiaries of SIFS project have initiated self-reliant sustainable farming practices as a means of ensuring food security and increased income level to some extent. Moreover, SIFS project accorded high priority to demand-driven, community-led initiatives and strengthening



Farm design and community micro-planning session

community based institutions to address issues along the value chain in produce marketing. As an output of the project intervention, more than 50% of the targeted beneficiaries have succeeded in producing some marketable surplus that accounted for about 10% rise in the household income.

The project adopts different approaches like participatory planning, monitoring and decision making; linking agriculture into natural resources and nutrition; group/ institutions management and capacity building; organic and bio-dynamic farming; strengthening local resource centers (LRCs); development and institutionalization of local resource persons (LRPs); public private partnership for sustainability

and intensive implementation of project activities in cluster approach. Additionally, farmers are being empowered on self-sustained SIFS model by continuous interaction, trainings, demonstrations and market support. Project interventions are going on in action and reflection basis.

Project beneficiaries are selected by interactive workshop among the stakeholders during stakeholder's orientation at the VDC level after which the farmers' groups are formed in the selective clusters. After the group formation under SIFS project, the first step includes micro-planning based on agricultural seasonal calendar and scarcity calendar where farmers identify their resources and analyze the underlying resource constraints and opportunities to enhance farm production and income. The micro-plan defines the objective of the producers' group and identifies the area of project support for a year, which can also be revised during execution, if needed. The project interventions comprise agriculture, livestock and forest components in an integrated way with sustainable technology transfer to the beneficiaries. The project currently covers 65 groups comprising 569 female and 864 male members.

Ethnically the target population is composed of 820 Chepangs, 368 Tamangs and other ethnic minorities, 88 Dalit households and 157 others households in the groups.

Over the last year, the project conducted community micro-planning sessions to new groups and re-planning sessions in previously formed groups with identification of locally available natural resources and constraints to farming and product marketing. Similarly, 127 slots of SIFS training to farmers were conducted by introducing the SIFS modality and training on improved farming technology as per the micro-plan of the groups, identified knowledge gap and on farmers' demand. Farmers were supported with off-season tomato seed; fingerlings for kitchen fishery; elephant foot yam and Pidar seedlings; pigeon pea seeds; Dhaincha seeds for green manuring; quality protein maize seed (Poshilo variety); soybean seed; Ginger rhizome; mushroom spawn; veterinary campaign; winter and summer season vegetable seeds, and trainings for foliar fertilizer and bio-pesticide preparation. Input support to farmers was executed after the technology training sessions. The output of winter vegetable production support to farmers is presented in Table 3.



Kitchen garden of a farmer in Shaktikhор

Table 3: Area, production, consumption, quantity of produce sold and income earned from winter season vegetable production in 2012

Crop Species	Area (ha)	Production (Kg)	Consumption (Kg)	Quantity Sold (Kg)	Income (NRs.)
Cabbage	2.926	15,110	8,455	6,656	50,160
Cauliflower	3.186	12,600	9,080	3,520	80,400
Radish	0.858	14,644	12,395	2,248	68,160
Onion	1.076	15,695	13,228	2,468	37,410
Carrot	0.586	5,635	4,707	928	48,375
Coriander	13.166	3,221	2,405	816	32,200
Spinach	0.33	2,571	1,735	836	27,000
Fenugreek	0.195	1,700	1,025	675	24,000
Pea	0.95	2,836	1,196	1,640	54,000
Cress	0.09	1,600	1,280	320	22,400
Four season bean	0.496	7,960	4,864	3,096	60,600
Tomato	1.9	28,500	17,100	11,400	171,000
Hot Pepper	0.76	3,420	2,052	1,368	61,560
Total	26.519	115,492	79,522	35,970	737,265

The project also supported for the formation of VDC level loose network called 'market management committee' which is an amalgamation of farmers and traders. The market management committee started market promotion activities to the respective VDCs for seasonal crops, livestock and forest products. Similarly, Praja Multi-Purpose Cooperative Limited was supported for various trainings, visits, marketing tools and publications for the promotion of locally available products. Model farmers and resource farmers were provided with technical support in each VDC. Curriculum for Farmers' Field School (FFS) was developed in coordination with DADO and training of trainers (ToT) was conducted to resource farmers for farmer to farmer extension. All the model farmers have their own independent farm design tailored to their need and resources. They have started to manage their farm resources while also providing training to other farmers. Utilization of cattle urine, foliar fertilizer and compost making, kitchen garden, kitchen fishery, improved cattle/

goat shed, plantation of different fruit/ cereal crop, establishment of commercial vegetable blocks, fodder and forage plantation can be observed in the field of model farmers. The resource farmers were also trained on leadership development training.

SIFS project also supported farmers for seed multiplication of four season bean on Community Based Seed Production (CBSP) approach. Farmers were trained on farming technology after which the project supported 41 kg breeder's seed of the bean and 6 metal bins to those farmers. A total of 25 farmers produced 340 kg of four season bean seed which they re-planted or sold to the market. Similarly, resource center for fruits, NTFP, timber and livestock (pig and poultry) is established for the supply of plants and breeds to local farmers and outside areas.

The beneficiary farmers also received additional trainings and orientations of i) internal control system, ii) nursery management, and iii) livestock feeding management that increased awareness

to the producers and also identified the gaps for project intervention. Meanwhile, the project also provided supported on conversion material (Bio-Dynamic Preparation 500 - 507) to promote bio-dynamic farming in 104 ha of leasehold forest and private lands; with the scope of producing Demeter certified products to sell in the international market. Around 400 ha of farm have also supported for Demeter certification. Other activities conducted during the last year of project implementation consist of one slot of market management training, one event of farmers' tour and an event of visit to European market to identify market potential of farm products. The SIFS project has also promoted micro-irrigation techniques that suit the local conditions. Five water harvesting tanks (plastic ponds),

one concrete pond, a treadle pump, 15 sets of drip irrigation materials, garden pipes, sprinklers and watering can were supported to the farmers. This helped farmers to irrigate more than 10 ha of land through which they have initiated crop intensification in the project area. Co-ordination and networking with local and district level N/GOs and marketing team is the regular approach for quality output and marketing of the farm products. District Project Advisory Committee (DPAC), local level GO and NGOs, social leaders and allied CBOs are positive on the results of the SIFS project. Similarly, farmers are growing crops in more systematic way to increase farm production/ productivity and are successful in achieving higher level of returns from the farm.



SUCCESS STORY

Mr. Aitaram Chepang - A Model Farmer and A Source of Inspiration

Mr. Aitaram Chepang is a farmer residing just 17 Kilometer away from the Country's east-west highway in Shaktikhor VDC, Chitwan District of Nepal. He belongs to an indigenous ethnic group of Nepal. Mr. Chepang is a hard working 40-years old farmer having six members in his family and a small piece of farm land. His family depends fully on crops and livestock grown on 0.2 ha of farm land including his homestead (non-registered land) for food, income and employment. As a typical small farmer, the family also derives some forest products from the nearby forest. Mr. Chepang needs additional expenses for the education for his three children, family healthcare and others. Sudden mishap on weather, epidemics of disease and pest, and reduced trend of farm production distort the survival of the Chepang family. So, the Chepang family was facing lots of difficulties on living and seeking ideas, technology and support for the sustainable livelihood options.

Meanwhile, the project 'Sustainable Integrated Farming System (SIFS) in South Asia' approached the area where Mr. Aitaram Chepang was also a member of Dhanbari Multi-Purpose Farmers' Group (MPFG). In the initial phase, farmers of the village were not interested to join the group but based on the sharing of the project, faith of the implementing organization and the need of the farmers, Mr. Chepang motivated other farmers to participate in the group.

Before joining the group, Mr. Aaitaram Chepang used to grow maize, millet, buckwheat, and wheat in his land adopting traditional practices, and the produce was not sufficient for his family consumption. Mr. Chepang never thought that vegetable farming would be the best option for increasing the economic status of the smallholder farmers but he realized this after joining the MPFG. The project supported capacity building training to the MPFG on nursery management, foliar fertilizer/ pesticide preparation, kitchen fishery, improved livestock shed construction, vermicompost preparation, goat farming, seasonal and off- season vegetable production, fruit farming etc. Those trainings inspired Mr. Chepang to initiate vegetable farming where project also supported on improved varieties of vegetable seeds and technical backstopping.

Off season tomato farming remained the most lucrative to the farmer. Mr. Chepang transplanted tomato seedlings in one *Kattha* (0.034 ha) of land and adopted organic farming practices. He regularly consulted Field Technicians for technical advice and problems. The Chepang family started harvesting good quantity of fresh tomato after two

months which Mr. Chepang never had expected. Besides home consumption, Mr. Chepang was able to earn NRs. 24,000 from the sale of 800 kg tomato in the local and the nearby market centers within one production season. Local traders also preferred the farm products and collectors came themselves to Mr. Chepang's house to buy tomato. Mr. Aaitaram Chepang produced 20 kg seed of four season bean, in addition to tomato with technical backstopping and foundation seed support from the project in one *kattha* of land.

Mr. Chepang started to save some money in the MPFG group, after fulfilling the food and education expenses over the season. Not only that, the MPFG also acknowledged him as a Model Farmer in the group. Being a source of inspiration, Mr. Chepang shares his experiences to his group members/ visitors to the area. Farmers' groups from nearby areas visit Mr. Chepang's model farm for live schooling of farming system. Mr. Chepang plans to extend the area of vegetable production, as per the farm design. He thanks SIFS project for changing his way of life and acknowledges the tireless support from the project staffs.

RESEARCH AND ANALYSIS OF AGRICULTURAL INPUTS SECTOR IN SELECTED DISTRICTS OF NEPAL

1. Introduction

This research is a component of a larger program called Samarth-NMDP (Nepal Market Development Program), funded by UKaid and implemented by Adam Smith International in Nepal. The study was conducted during March – May, 2013. Samarth-NMDP has already started its pilot interventions based on vegetables, ginger, dairy, pig, and fisheries. Most of the Samarth-NMDP interventions focus on input supply systems within the specific agricultural sub-sectors. Detailed information pertaining to the agricultural inputs market in the intervention districts is a must for Samarth-NMDP to ensure that the development interventions that are undertaken truly address the actual needs of the targeted beneficiaries. This research is expected to strengthen Samarth-NMDP's current interventions and provide a platform for designing future interventions. The overall objective of this study was to provide a clear understanding of the structure and dynamics of agricultural inputs sector in the selected districts. Specifically, this study provides information on the supply chain of major agricultural inputs; identifies the major private players for each input market; highlights the existing challenges for the private players in the agricultural inputs market; briefly sketches the role of government and parastatal agencies in improving the access of smallholders to the agricultural

inputs; and makes recommendations on possible interventions that can be made by Samarth-NMDP to realize its goal of reducing poverty of poor and disadvantaged people within key sub-sectors in agriculture and rural markets.

This study was carried out in six districts of Nepal viz. Morang, Jhapa, and Ilam from the Eastern Development Region; and Rupandehi, Syangja, and Palpa from the Western Development Region. Primary data were gathered through district level stakeholder interactions; interview of the key informants and private players; and focus group discussions with the farming community. This study focuses on the major cereal crops (i.e. rice, maize, and wheat), vegetables, ginger, dairy cattle (cow and buffalo),



Group discussion on input market, Jhapa

goat, pig, and fisheries. Pertaining to the above mentioned agricultural products, this study mainly focuses on crop seeds, improved breeds, fertilizers (chemical and bio-cum-organic), veterinary medicine, livestock feed, fish seed and institutional credit.

2. Major Findings

2.1 Supply Chains

- The study presents detailed supply chains of the major inputs listed above. For each input, the study identifies the major players involved along with the number of players in each level of the supply chain, and the direction of flow of the inputs.
- Many actors are involved in the supply chain for cereals and vegetables seeds. Community based groups are also active in the production of cereals seeds. Hybrid seeds of cereals and vegetables are largely imported, in which many private players are involved.
- The supply chain for ginger mainly involves farmer-to-farmer dissemination.
- Agricultural Inputs Company Limited (AICL) is the only authorized actor for marketing subsidized chemical fertilizer in the country. However, fertilizer supplied by AICL is not sufficient to meet the demands of the country. Large quantity of chemical fertilizer enters the country via unauthorized channels from India.
- The market for bio-cum-organic fertilizers is increasing. Domestic producers are involved in the production of vermicompost and other organic fertilizers. Bio-cum-organic fertilizers are also imported from abroad by private players.
- Government farms managed by the Department of Agriculture and NARC play an important role in supplying live animals for cattle, goat and pig. District Livestock

Services Office (DLSO) is the sole provider of Artificial Insemination (AI) services in cattle. Besides, private and community based farms also serve the purpose of livestock resource centers.

- Market for commercial livestock feed is limited only to larger farms. Small scale farmers mostly use the byproducts of grain mills as feed.
- Both domestic as well as imported veterinary medicines are equally popular. A large number of private players are involved in the import and sale of veterinary medicines.
- Government farms, NARC, and private hatcheries are the major sources of fish seed. Besides, a large quantity of hatchlings is also imported from India.
- Fish farmers are not yet accustomed to use commercial fish feed.

2.2 Private Players

- It is very difficult to distinctly delineate the level of private players in the agricultural inputs market. The importers are also serving as dealers as well as retailers. Specialization of products sold was found to be limited only to big players in the big market centers of the Terai districts.
- The major business strategies adopted by the private players are conducting demonstration plots in collaboration with leader farmers, arranging farmers' tours, providing inputs on credit, providing technical advices to customers, linking farmers to extension agents, visiting farmers' fields/ farms in case of problems, specializing in a particular brand for niche markets, buy-back schemes for date-expired products, providing commission to dealers/ retailers, lucky draw schemes for customers, and information dissemination via posters/ pamphlets and printed/ oral/ visual mass media.

- The major challenges stated by the private players are difficulties in official registration of new crop varieties and livestock medicines, market distortion due to subsidy provided for AICL and National Seed Company Limited (NSCL), inability of AICL and NSCL to supply the inputs on time, lack of monitoring on the part of government agencies, high custom and quarantine charges on raw materials for micronutrients, lack of investment credit, lack of source seeds for seed production, and lack of authority for private players to sell subsidized chemical fertilizers.
- The agrovets are playing an important role in providing technical information to farmers especially in rural locations where the government extension services are not available.

2.3 Institutional Credit

- Agricultural Development Bank, Nepal (ADB/N) and microfinance institutions (MFIs) are the major sources of credits for the farmers. Though the interest rate for ADB/N is lower, farmers are unable to access loans due to difficult official procedures, distance, and need for collateral.
- On the other hand, though credit from MFIs is facilitated by the MFI-staffs in the villages on a group-collateral basis, the interest rate charged by MFIs is quite high.

2.4 Role of Government and Parastatal Agencies

- The role of government agencies as market enablers is limited to registration and licensing of the private players. These agencies are also responsible for time-to-time monitoring to check the quality and price of inputs; however such activities are very rarely done.

- Government farms and NARC supply seeds, improved breeds, and fish seeds.
- AICL and NSCL are state owned companies supplying chemical fertilizers and improved seeds respectively, in the market. However, the quantity supplied is far below the actual requirements.

3. Way Forward: Where can Samarth-NMDP Intervene?

- The study highlights various areas of potential development interventions. Bio cum organic fertilizers can be promoted to compensate for the fertilizer shortages in the country.
- Linking farmers, community based seed producer groups and private players/Agrovets to sources of institutional credit is recommendable as the limited availability and access to soft credit is one of the major hindrances in all sectors of agricultural inputs markets.
- In Jhapa, 30 Agrovets selling agricultural inputs have formed a loose network to import and supply together at various locations within the district. The prices charged by the Agrovets within this network are the same in the urban markets as well as remote areas. While the Agrovets within this network benefit due to the economy of scale, the farmers in rural areas benefit by lower prices. This good practice can be replicated in other areas as well.
- Although Agrovets are playing an important role in disseminating technical information to the farmers, the capacity of Agrovets is limited given that most of them are not academically trained in the relevant subjects. Capacity building of the Agrovets is essential through refresher trainings to provide them with up-to-date information about the latest technologies.

- Community Based Seed Producer (CBSP) groups are appearing as promising seed producers in all the districts, especially for cereals seeds. Existing farmer groups can be capacitated to produce cereal seeds in the Terai and vegetable seeds in the hills.
- For AI services, involvement of private sectors needs to be encouraged.
- Inbreeding depression is seen as a problem in pig. Existing private pig farms must be technically capacitated to serve as local breeding centers and to maintain gene pools of improved breeds.
- Private fish farmers must be technically trained for breeding of major fish breeds including high-yielding Pangasius breeds in order to reduce the dependence on imports of fish seeds.
- Awareness raising, link to soft loans, and demonstration ponds are necessary to promote commercial fish feeds for maximizing profits from commercial fish farming.
- Local Resource Persons (LRPs) can be developed for facilitating the rural farmers to overcome the difficulties of paper-works in obtaining loans from ADB/N and other private banks.
- Mechanization can be potentially promoted in the Hills as well as the Terai by the provision of buying in groups and using the machineries in rotation among the members.
- Finally, various associations and federations of entrepreneurs dealing with agricultural inputs must be activated and mobilized in quality monitoring and policy lobbying.

NEPAL MARKET DEVELOPMENT PROGRAM – DAIRY SUBSECTOR

Introduction

NMDP is a UKaid funded project for market development in ginger, fish, pig, vegetable and dairy sector. Dairy sector project is led by Practical Action Nepal and field implementation is done jointly by Practical Action and FORWARD Nepal. This project covers five districts namely Chitwan, Nawalparasi, Gorkha, Tanahu, and Dhading. Program in Chitwan and Nawalparasi is implemented by FORWARD Nepal. The other districts have local partners with Practical Action Nepal.

Livestock market, specifically dairy markets in Nepal is very important for the poor and disadvantaged people due to the reasons below:

- Smallholder dairying provides immediate incomes (including daily cash flows) for poor families.
- There is a high demand for milk products locally and value additions are common practices (ghee, curd etc.) in rural households.
- Smallholder dairying does not require expensive inputs (as opposed to poultry) and most farmers have basic traditional skills to rear cattle.
- Cattle are considered to be investments and insurances against future financial needs.
- Milk produced at home provides basic nutritional inputs which substitutes expensive proteins (meat).

Key Supporting Functions

Animal health service: One of the most critical services required by dairy farmers is access to quality animal health advisory services. In Nepal, the National Veterinarians Association has a full time membership of less than 600 practitioners and further studies estimates that over 1,500 non-registered veterinarians are working across the country. Further, a large number of para-vets (estimated at 5,000) and Village Animal Health Workers (VAHWs) currently at around 15,000 trained workers are practicing animal health services in rural areas. In addition to this, Department of Livestock Services (DLS) provides public services through district based District Livestock Service Offices (DLSOs). Each DLSO further supports Livestock Service centers (LSCs) within clusters of 4/5 VDCs in each district. Due to big geographical area under the coverage of one LSC, the quality of service provided is often inadequate. The project facilitates to establish linkage between milk cooperatives, veterinary doctors and technicians for effective and quality service delivery to the community.

Artificial Insemination (AI) services: Prior to the establishment of the National Livestock Breeding Center (NLBC) in Pokhara, it was estimated that less than 0.1% of breeding cattle had access to AI services. This has now improved to 7%; yet it remains an elusive service to most farmers. NLBC is a public sector service provider managed by the Ministry of Agriculture and Cooperatives (MoAC) through the Department of Livestock

Services (DLS). NLBC has a mandate, and are subsidized, to achieve improvements in breeding by the Ministry of Agriculture. Currently, it has reached over 50 districts through 243 AI service centers (mostly through DLSOs and LSCs). Nationally, the AI conception rate remains roughly around 56% for cow and 46% for buffalo, again much lower than average Asian standards. The NLBC is producing 150,000 straws annually and aims to increase this to 500,000 in 2013 and 1 million by 2017. NLBC is also the sole AI training provider and each year it provides training to fresh candidates and distribute certificate to new trainees. This project facilitates crowding in the service providers and increases the capacity of the service providers through activation of market players.

Breeding stock and cattle purchase markets: Improved breeds of cattle come from India and there are stringent quarantine measures. Recent regulation in India has resulted in low supply of cows and buffaloes driving prices further up. Majority of small-scale farmers rely on poor supply and low quality of breeding stock. NARC's Bovine Research Unit has tried to implement Community Breed Improvement programs but with little success. Currently, local Haat Bazaars and mobile traders supply a majority of the cattle (Cows and Buffaloes) in most mid hills areas. These animals have very little documentation in regards to its breed, overall health or production potential and generally are bought based on word-of-mouth referrals of sellers. Import is not suitable due to problems of quarantine measures and adaptation of the imported breeds to local climate. Thus, the project aims to improve the breeding facilities in the community to fulfill the demand of improved breeds.

Inputs for nutrition (feed, forage, etc.): Nutrition inputs are one of the key constraints to realizing better production and productivity. Nepal's high production costs are directly linked to the use of low grade feed (rice bran, oil-seed cake etc.) and untested animal feed manufactured by the private sector (Pro-bio tech, Pancha Ratna and Poshak are the three major

cattle feed manufacturers in Nepal). Action research conducted by Practical Action in Chitwan shows that 91% of the total cost of production comprises the cost of straw, bran and feed amongst smallholder semi-commercial dairy farmers with only 3% being attributed to medicine and health related costs. Farmer's knowledge on improved grass cultivation is low and land to grow them scarce. Community Livestock Development Project and other similar projects have identified Community Forests and Leasehold Forest as potential sources for developing fodder resource which have been promoted through innovative green enterprises model in various projects including Practical Action's MASF project. The limiting factor in forage production is timely availability of quality forage seed in the market. The private seed companies can be involved in the production and marketing of the quality forage and fodder seed. Eight seed companies from Chitwan started seed production in company's own land as well as through contract growers in facilitation of the project.

Financial services (including insurance): Current loans and insurance services are not suitable for small holder dairy farmers. Interest rates are relatively high and repayment options are not conducive for dairy farmers (does not take into account their production cycle). Micro-insurances for cattle has not emerged as a standard services for smallholder farmers and working capital type loans for smallholder farmers are not provided by the private sector. Past experiences of Agriculture Development Bank Nepal, Laxmi Bank and other similar ventures have left both farmers and bankers feeling unsatisfied with the services and with the response (demand) for such services. Past experience of working with Banks in MASF project has shown that there is adequate scope in working with local banks to stimulate demand for loans to buy cows in commercially potential rural areas. This project will facilitate to develop suitable package of loan for small holder farmers.

IMPROVING LIVELIHOODS OF SMALLHOLDER DAIRY FARMERS THROUGH FEED MANAGEMENT IN KAILALI DISTRICT

Feed trials conducted during Phase I of ILRI supported program "Improvement of Livestock Production System Through Feed Based Interventions in Chitwan District, of Nepal" (October 2010 to September 2011) and interim phase "Improvement of Dairy Production System Through Up and Out Scaling of Feed-based Interventions in Chitwan District, of Nepal" (January to June 2012) has generated important findings on profitable milk production through the improvement in traditional system of animal feeding. The improvements in feeding alone could increase milk production and save feed costs of NRs. 45.66 per animal per day. Increase in milk production due to improved feeding management will generate additional NRs. 22.09 per ten liters of milk per day enabling a farmer to earn total profits of NRs. 67.75/day/animal, if the animals are fed properly. Besides this, feeding of chopped feed (straw and green forage) also has positive effect on milk production. Results showed that feeding of chopped feed contributes to 4.6 % increase in milk production and reduction in cost of feed by minimization of wastage during feeding. Feeding wheat bhusa and maize stover instead of rice straw increased milk production on an average by 5.4% and 6% respectively. Feeding green forage largely contributes to reduction of concentrate feeds and other clinical problems. Package of dairy animal feeding was developed by the project based on the data generated from

on-farm demonstrations. The adoption of improved feeding management increased milk production by 6.77% on the average, whereas all feed ingredients were reduced slightly. The proposed project is built on the outcome of the 1st phase ILRI project and is focused towards wider dissemination of these findings along with improvement in support services for promoting sustainable dairy production system in Kailali district in the far western Terai of Nepal.

Livestock farming is a major component of Nepalese farming system, and is becoming one of the important occupations in the rural area of Nepal. Dairy sector alone contributes to 62.6% of the total livestock GDP. The increasing demand of milk and milk products has triggered changes from subsistence to commercial dairy farming in various places of terai region and also in Kailali district. However, there are various hindrances that are obstructing the smallholder farmers to produce milk at lower cost and derive maximum returns. In case of livestock rearing, different factors play a contributing role in reducing milk production costs. These include feeding pattern, type of breed, and management practices applied during production. Technical knowledge regarding livestock feed management is also a crucial factor that can improve production and productivity per unit animal.



Group formation at Malakheti VDC, Dhangadi

To address the above issues, a developmental and research project was started in March 2013 with the financial support of ILRI/CSISA and is implemented in Kailali district that lies in the far western region of Nepal. This two and half years project (March, 2013 - September, 2015) is working directly with 700 smallholder dairy farmers in five VDCs (Malakheti, Sripur, Beladevipur, Geta and Chaumala) of Kailali district aiming to increase milk production and productivity at farm level and thus improve the livelihoods of small farmers of the concerned district through livestock feed management.

To provide a brief description of the project, one district level and five VDC level (one in each VDC) inception meetings among the stakeholders have already been conducted with the implementation of this project. This has helped to create positive attitude with strong willingness to participate in the project. Now, the project is ongoing with group formation at different wards of each VDCs and priority is given to the poor and marginalized families, women, janajatis and marginalized caste tribes. From the five VDCs, altogether 28 groups will be formed where each group consists of 25 members.

ENHANCING PRODUCTIVITY AND MARKET LINKAGES – IMPROVING THE LIVELIHOODS AND FOOD SECURITY OF SMALLHOLDERS IN ASIA

This project is funded by US Agency for International Development/ Regional Development Mission for Asia (USAID/ RDMA). The duration of this project is for three years, starting from July, 2013. This is a research cum development project, with Asian Institute of Technology, Thailand as the key implementer. It is a multinational project implemented simultaneously in Nepal, Bangladesh, and Cambodia. There are two partner organizations assigned in each of these countries, who will be responsible for implementing the project activities. At the same time, collaborating partners from Thailand and India will be responsible for providing stipulated services and technologies to the national partners in Nepal, Bangladesh, and Cambodia. This project adopts a 'two-pronged strategy' focused on (i) improvement of overall farm productivity through sustainable agricultural practices; and (ii) promotion of high-quality, high-value crops with the aim of enabling smallholders to increase their income by linking them to appropriate market niches through accessible supply/ marketing chains. The participatory pilot projects will carry out (i) testing and necessary modifications of technologies developed by partner organizations in local situations; and (ii) assessing technical and financial feasibility of high-value crops, mainly selected organic vegetables, in collaboration with the national partners and farmer networks in target countries.

In Nepal, the implementing partners are FORWARD Nepal and Nepal Agricultural Research Council (NARC). NARC is responsible for developing and disseminating the technology support packages related to the seed drying and storage technology; organizing national level roundtables and meetings; and organizing national level trainings. The major responsibilities of FORWARD Nepal include implementing pilot demonstrations in farmers' field; facilitating marketing and distribution strategy; and organizing farmer level trainings. The pilot demonstration activities related to sustainable agricultural practices is implemented in Banke district focusing on improving productivity of rice-wheat based cropping system. The major activities under sustainable agricultural practices include promotion of legumes (lentils and mungbean) in rice-wheat based system; incorporation of mungbean residue for green manuring before rice transplanting; and validation of zero-tillage garlic production technology for efficient utilization of residual soil moisture after rice harvest. The pilot demonstration activities for high-value crops will be conducted in the hilly areas of Chitwan and Surkhet districts, focusing on the demonstration of the use of water-harvesting ponds for micro-irrigation of vegetables. Market promotion of organic vegetables will also be done in Chitwan district. Farmer level trainings will be conducted in all the project sites. This project also aims for capacity

building of farmers by conducting two-month internship for local resource persons (LRPs) from the implementing countries. The internship will be conducted in Thailand. In Nepal, FORWARD Nepal will select three LRPs from the three project districts for participating in the internship program.

COLLABORATION AND LINKAGE



WHH mission visit at Shaktikhor, Chitwan

FORWARD Nepal emphasizes in collaboration and partnership with GOs, I/NGOs, research institutions, academia, private sectors and public media at national/ international levels and community based organizations for sharing knowledge, skills, experience and resources and thereby bringing about greater positive impacts of the programs in the communities. It has already established working relations with Department of Agriculture (DoA) including District Agricultural Development Offices (DADOs); District Livestock Service Offices (DLSOs); District Forest Offices (DFOs); Nepal Agricultural Research Council (NARC) along with its Commodity Programs and Research Stations; Division Cooperative Offices; Agriculture and Forestry University (AFU); Institute of Agriculture and Animal Science (IAAS), Tribhuvan University; international organizations working in Nepal; and universities in Asia, Europe, and Canada mainly for project partnerships, research, and educational activities including internship programs.

WORKSHOPS, SEMINARS, TRAININGS, VISITS AND INTERNSHIPS

a) Seminar and Workshops Attended by FORWARD

S.N.	Name of Seminar/Workshop	Organized by	Date/Duration	Participant
1	Organic and permaculture farm design course	HASERA in Kavre	15-24 July 2012	Prabina Shrestha, Om Bikram Praja
2	SIFS project review workshop	WHH	15-16 August 2012	Netra P Sen Rishikesh Dhakal
3	The Sixth National Conference on Science and Technology	Nepal Academy of Science and Technology (NAST)	25-27 September 2012	RK Neupane
4	Wildlife conservation awareness campaign	RRN, FORWARD	29 September 2012	SIFS project staff team
5	Status of organic farming in Chitwan district	DADO, NPG and Ecoscentre	30 September 2012	Rishikesh Dhakal
6	SIFS self assessment workshop/ meeting		31 Oct- 01 Nov 2012	RK Neupane/ Rishikesh Dhakal
7	End of Project (EOP) Workshop of RiUP Best Bets Project	CARIAD Kathmandu	25 November 2012	RK Neupane/ Ambika Sapkota
8	SEED partners meeting	USAID Nepal	05 December 2012	RK Neupane
10	Seminar on "Central Nepal: The Land of Opportunities" - Nepal Investment Year - 2012/13	FNCCI	11 January 2013	Netra P Sen
11	Evidence and Learning from Latin America (ELLA) project launch workshop	Practical Action Nepal	25 January 2013	RK Neupane
12	Stakeholders meeting on Adoption of Improved Maize Varieties in the Hills of Nepal and the Impact of Community Based Seed Production	CIMMYT/ HMRP	08 February 2013	RK Neupane/Dharma P Pande
13	Annual Review Workshop	WHH, SARO, India	18-21 February 2013	Dharma P Pande
14	ELLA National Learning Workshop	Practical Action Nepal	04 March 2013	RK Neupane
15	Kick-off-Workshop – Long-term Marketing Strategy: Together for the Chepang	WHH/BMZ	4-6 March 2013	Netra P Sen/ Rishikesh Dhakal
16	Program Start-up Workshop (Improved Seed for Farmers Program)	MoAD/IFAD	20 March 2013	Netra P Sen
17	Annual Planning Workshop ILRI	ILRI	20-22 March 2013	Dharma P Pande
18	Quarterly progress Review Meeting	Department of Agriculture	14 May 2013	RK Neupane
19	Market Development Forum Nepal	Samarth-NMDP	31 May 2013	Netra P Sen/ Luni Piya
20	Study on impacts of pesticide use on agriculture and health hazards of people	Agriculture and Forestry University; and DDC Chitwan	11 June 2013	Luni Piya/ Rishikesh Dhakal
21	District Food Network (DFN), Chitwan	WFP and DADO, Chitwan	19 June 2013	Luni Piya
22	District Organic Farming Taskforce, Chitwan	DADO, Chitwan	19 June 2013	Luni Piya

S.N.	Name of Seminar/Workshop	Organized by	Date/Duration	Participant
23	Workshop on Monitoring and Evaluation in WHH Nepal and Cross-border Projects	WHH	26 to 28 June 2013	Rishikesh Dhakal/ Luni Piya
24	Department of Environment (DoE)	DDC, Chitwan	7 July 2013	Luni Piya

b) Seminar and Workshops Conducted by FORWARD

S.N.	Name of Seminar/ Workshop	Date/Duration	Participants
1	Community marketing strategy workshop	30-31 August 2012	SIFS project staff team
2	District Level Stakeholders Meeting	27 September 2012	Dharma P Pande, Manju Pathak, Krishna P Gupta, Sabita Giri
3	Workshop on Lentil Quality Seed Management at Parwanipur	25 January 2013	Luni Piya, Dharma P Pande, Anjana Sharma, Krishna P Gupta, Saharsha Ojha, DADOs, Representative from Farmer groups, Agrovets, Seed Quality Testing Laboratory
4	Workshop on Lentil Quality Seed Management at Nepalganj	26 February 2013	RK Neupane, Dharma P Pande, Anjana Sharma, Manju Pathak, Shiva R Gupta, Saharsha Ojha, DADOs, Representative from Farmers' groups, Agrovets, Seed Quality Testing Laboratory
5	Riverbed Farming in University Curriculum	9 July 2013	FORWARD Nepal - Luni Piya, Rishikesh Dhakal, Yam Bahadur Thapa Agriculture and Forestry University – Prof. Dilli Ram Baral, Prof. Surya Kanta Ghimire, Prof. Naba Raj Devkota, Prof. Sundar Man Shrestha, Prof. Moha Dutta Sharma

Trainings and Visits

a) Trainings attended by FORWARD

S.N.	Name of the Training	Organized by	Date/Duration	Participants
1	Enterprise Development Training	NEAT	10-13 Dec, 2012	Dharma P Pande/ Deepak Aryal
2	Exposure Visit	SIFS	5-10 Feb, 2013	Niru Malla/Lalita Ale Magar
3	Workshop on Participatory Guarantee System	WHH, SARO, India	4-6 June 2013	Rishikesh Dhakal/Prabina Shrestha
4	Official Documents Writing Skills Training	Career Master Nepal	26-28 May 2013	Krishna Bdr Bhandari
5	TUFTS Training On Research proposal development	Teaching Hospital	19-21 July 2012	Dharma P Pande
6	TUFTS Training (ToT on Nutrition Security)	USAID	25-27 July 2012	Dharma P Pande

b) Trainings Conducted by FORWARD

S.N.	Name of the Training	Date/Duration	Participants
1	Kitchen gardening and kitchen waste management training	2 September 2012	Housewives of Kshetrapur area
2	Training for LRPs	17 September 2012	NEAT LRP Team
3	Social mobilization and team building training	26-28 September 2012	SIFS project staff team

c) Visits Made by Different Individuals/Organizations to FORWARD Office and Project Site

S.N.	Name of the individual	Position	Organization	Date/Duration
1	Mr. Anshuman Das	Regional Coordinator	Welthungerhilfe, South Asia	11-14 Aug. 2012
2	Mr. Surendra Gautam	Program Coordinator	WHH– Nepal	11 Aug. 2012
3	Mr. Keshav Dutta Dawadi	Project Manager	Practical Action	9 Sep. 2012
4	Mr. Prem Bahadur Thapa	QCPI Officer	Practical Action	9 Sep. 2012
5	Mr. Alastair Stewart		The IDC group	9 Sep. 2012
6	Mr. Ananta Jibi Ghimire	VCD Specialist	USAID/NEAT	24 Sep. 2012
7	Mr. Nabin Bhandari	Auditor	Kuber &Co.	19 Sep. 2012
8	Mr. Madan Aryal	Auditor	Kuber &Co.	19 Sep. 2012
9	Mr. Philippe Dresruesse	Country Director	WHH, Nepal	27 Nov. 2012
10	Mr. Michael Hofmann	Executive Marketing Director	Welthungerhilfe, Head Office	27 Nov. 2012
11	Ms. Jenni Sjoman	Financial International Secretary relation	University of Lapland	4 Dec. 2012

S.N.	Name of the individual	Position	Organization	Date/Duration
12	Dr. Sharan K.C	Coordinator	SASK	4 Dec. 2012
13	Mr. Jonny Smeds	Journalist	SASK – Federation of Finnish Trade Unions	4 Dec. 2012
14	Ms. Johanna Helkimo	Expert	State of Finland Regional Administration	4 Dec. 2012
15	Mr. Vinesh Bisht	Program Finance Officer	WHH, Regional Office, Delhi	13 Dec, 2012
16	Mr. Karun Behera	Finance and Admin Manager	WHH, Regional Office, Delhi	13 Dec, 2012
17	Mr. Shyam Upadhyaya	Finance Manager	RRN	13 Dec, 2012
18	Ms. Kanchan Gurung	Grants Specialist	NEAT, Kathmandu	20 Dec, 2012
19	Mr. Nicolo Noel	OFED	NEAT	20 Dec, 2012
20	Mr. Santosh Shrestha	Regional Agronomist	NEAT	20 Dec. 2012
21	Mr. Anuj Chhetri	CSC	SASF Nepal (AUSAID)	20 Dec. 2012
22	Ms. Greta Seibel	Junior Expert	WHH, Regional Office, Delhi	10 Jan. 2013
23	Dr. Arindam Samaddar	M&E Officer	ILRI	18 Jan. 2013
24	Mr. Prasad Chhetry	Team Leader	Helvetas Nepal	27 Jan. 2013
25	Mr. Hari Gurung	Technical Coordinator	Helvetas Nepal	27 Jan. 2013
26	Ms. Subita Pradhan	Research Associate	SIAS	31 Jan. 2013
27	Mr. Esben Boutrup Mallter	Student	Roskilde University	31 Jan. 2013
28	Mr. Stephen Hutton	Evaluation Officer	World Bank	10 Feb. 2013
29	Mr. P.B.Chhetri	Senior Rural Development Specialist	World Bank	10 Feb. 2013
30	Prof. Dr. K.L. Maharjan	Professor, IDEC	Hiroshima University	12 Mar. 2013
31	Dr. M. D. Sharma	Professor, AFU	Agriculture and Forestry University	12 Mar. 2013
32	Dr. Satoru Komatsu	Researcher	Hiroshima University	5 May. 2013
33	Dr. Daisaku Goto	Associate Professor	IDEc, Hiroshima University	5 May 2013
34	Dr. Shinji Kaneko	Professor	Hiroshima University	5 May 2013
35	Dr. Takahiro Ito	Assoc. Prof	IDEc, Hiroshima University	5 May 2013
36	Dr. Yutaka Ito	Assistant Professor	IDEc, Hiroshima University	5 May 2013
37	Dr. Ram Manohar Shrestha	Emeritus Professor	Asian Institute of Technology (AIT), Thailand	5 May 2013
38	Mr. Ram Prasad Dhital	Program Manager Social Program	Alternative Energy Promotion Center	5 May 2013
39	Mr. Gokul Paudel	Agri-Economist	CIMMYT	7 June 2013
40	Dr. Dhiraj Kumar Singh	Scientist	ILRI	7 June 2013
41	Dr. Prem Bhandari	Researcher (Social Science)	ISER – N, Fulbari	10 June 2013
42	Dr. Dirgha Ghimire	Director	ISER – N, Fulbari	10 June 2013
43	Mr. Krishna Ghimire	Extension Officer	ISER – N, Fulbari	10 June 2013
44	Mr. Sk. Zakir Hossain	Program Officer- Research	NETZ, Bangladesh	21 June 2013
45	Ms. Nilufar Sultana	Program Manager	NETZ, Bangladesh	21 June 2013
46	Mr. Mohammad Shahjahan Chowdhury	Field Facilitator	J.C.F	21 June 2013
47	Mr. Mohammad Fazlul Karim	Project Accountant	ASHRAI, Bangladesh	21 June 2013
48	Mr. Mohammad Rahiul Islam	Field Facilitator	JCF	21 June 2013
49	Mr. Mohammad Abul Akram	Finance Manager	NETZ, Bangladesh	21 June 2013
50	Mr. Mohammad Azizur Rahman	Unit Accountant	NETZ, Bangladesh	21 June 2013
51	Mr. Syed Shahjahan Hossain	Monitoring Officer	SUS	21 June 2013
52	Mr. Mohammad Abu Hanif	Field Facilitator	ASHRAI	21 June 2013

d) Interns at FORWARD

S.N	Name of the Students	Institution	Date/Duration
1	Mr. Makoto Suetake	Hiroshima University, Japan	20 Aug 2012 - 21 Oct 2012
2	Ms. Mrinila Singh	Hiroshima University, Japan	3 February 2013 - 27 March 2013
3	Mr. Udeep Regmi	TERI University, India	3 June 2013 - 5 July 2013

MEMBERS, AUDITOR AND STAFFS OF FORWARD

a) Executive Board Members (2012-2014)

S.N.	Name	Position	Mailing address	Address
1	Prof. Dr. Naba Raj Devkota	Chairperson	Dnaba.iaas@gmail.com	Gorkha
2	Mr. Ram Kumar Neupane	Vice-Chairperson	ramkumarneupan@hotmail.com	Bharatpur, Chitwan
3	Mr. Ram Prasad Dhungana	Secretary	Ramdhungana1@yahoo.com	Bharatpur, Chitwan
4	Ms. Usha Thapa	Joint Secretary	acosce@wlink.com.np	Bharatpur, Chitwan
5	Ms. Mita Shrestha	Treasurer	Meeta_sth@yahoo.com	Bharatpur, Chitwan
6	Mr. Krishna Prasad Gupta	Member	Krishna_g3_oshoo@yahoo.com	Bara
7	Ms. Sunita Shrestha	Member	Mssunita05@yahoo.com	Bharatpur, Chitwan
8	Ms. Sarita Thapa Magar	Member	Sarita.thapa2008@gmail.com	Hetauda, Makwanpur
9	Ms. Santa Maya Praja	Member (Farmers' representative)		Shaktikhor, Chitwan
10	Ms. Tika Maya Pariyar	Member		Shaktikhor, Chitwan
11	Mr. Dinesh Babu Thapa Magar	Member	Darlami.dinesh@gmail.com	Bharatpur, Chitwan

b) FORWARD's Honorary Members

S.N.	Name	Address	Email
1	Prof. Dr. John R. Witcombe	Center for Advanced Research in International Agriculture Development (CARIAD), Bangor University, UK	j.r.witcombe@bangor.ac.uk, jrwitcombe@yahoo.com
2	Dr. Dave Harris	Principal Scientist (Agro-ecosystems / Climate Change), ICRISAT -Nairobi (Regional hub ESA) PO Box 39063, Nairobi, Kenya	daveh548@gmail.com
3	Dr. Krishna Dev Joshi	Research Fellow and South Asia Regional Coordinator, CARIAD, Bangor University, UK C/O CIMMYT- South Asia PO Box 5186, Kathmandu, Nepal	kdjoshi@mos.com.np

c) FORWARD's Auditor (2012/13)

S.N.	Name	Engagement Partner	Address	Contact phone and email
1	Kuber & Company	Kuber & Company Chartered Accountants	Kathmandu P.O.Box 890	Tel: 4416547, kuber@wlink.com.np

d) FORWARD Staff 2012/13

S.N.	Name	Position
1	Mr. Netra Pratap Sen	Executive Director
2	Mr. Ram Krishna Neupane	Program Director
3	Mr. Yam Bahadur Thapa	NRM Specialist
4	Dr. Luni Piya	Program Coordinator
5	Mr. Dharma Prasad Pande	Senior Program Officer
6	Mr. Deepak Aryal	Senior Program Officer
7	Mr. Rishikesh Dhakal	Senior Program Officer
8	Ms. Ambika Sapkota	Senior Program Officer
9	Mr. Krishna Bahadur Bhandari	Senior Administrative Officer

S.N.	Name	Position
10	Ms. Anjana Sharma	Monitoring and Evaluation Officer
11	Mr. Pankaj Koirala	Project Coordinator
12	Mr. Manoj Majgaiya	Account Officer
13	Ms. Manju Pathak	Information and Publication Officer
14	Mr. Rakesh Kumar Sah	Field Officer
15	Mr. Shiva Ratan Gupta	Agriculture Officer
16	Mr. Dhan Prasad Poudel	Livestock Officer
17	Mr. Krishna Prasad Gupta	Field Officer
18	Ms. Sunita Shrestha	Project Accountant
19	Ms. Shaharsha Ojha	Project Accountant
20	Mr. Ram Dayal Tharu	Project Accountant
21	Ms. Anupama Katuwal	Project Accountant
22	Mr. Shree Ram Chaudhary	Admin Assistant
23	Ms. Rashu Thakali	Receptionist
24	Mr. Bhim Bdr Thapa Magar	Driver
25	Mr. Bharat Lal Shrestha	Office Boy
26	Ms. Jevana Adhikari	Office Helper
27	Mr. Binay Chaudhary	Office Helper
28	Mr. Binod Mahato	Watchman
29	Mr. Durga Bahadur Basnet	Sr. Field Monitor
30	Mr. Niranjan Kumar Mandal	Field Technician
31	Mr. Dambar Prasad Mandel	Technical Assistant
32	Ms. Tara Rai (Chaudhary)	Field Technician
33	Mr. Pradip Kumar Chaudhary	Field Technician
34	Mr. Challu Prasad Chaudhary	Field Technician
35	Mr. Lakpa Tenzing Sherpa	Senior Technician
36	Mr. Rana Bahadur Ranabhat	Senior Technician
37	Mr. Bhuwan Raj Chapagain	Senior Technician
38	Ms. Gita Rai	Office Helper
39	Mr. Kishor Luitel	Field Technician
40	Mr. Raj Kumar Dhaulakoti	Field Technician
41	Mr. Jhapta Bahadur Basnet	Field Technician
42	Mr. Kshitiz Raj Sharma	Field Technician
43	Ms. Rita Jaishi	Field Technician
44	Mr. Jagdish Mandal	Field Technician
45	Ms. Sabita Bishwas	Field Technician
46	Mr. Ram Dayal Chaudhary	Field Technician
47	Mr. Shankar Datta Bhatta	Field Technician
48	Ms. Amrita Shrestha	Field Technician
49	Ms. Basanti Rana	Field Technician
50	Ms. Gita Dangaura	Field Technician
51	Mr. Dipak Bhatta	Field Technician
52	Mr. Tanka Prasad Acharya	Field Technician
53	Ms. Prabina Shrestha	Senior Field Technician
54	Ms. Niru Malla	Senior Field Technician
55	Mr. Chhon Bahadur Praja	Field Technician
56	Mr. Bam Bahadur Praja	Office Helper
57	Mr. Omkar Raj Kafle	Senior Field Technician
58	Mr. Indra Bahadur Praja	Social Mobilizer
59	Mr. Om Bikram Praja	Office Helper
60	Ms. Sabita Praja	Social Mobilizer
61	Mr. Madan Praja	Social Mobilizer

S.N.	Name	Position
62	Ms. Sujana Chepang	Social Mobilizer
63	Ms. Shanti Praja (Chepang)	Social Mobilizer
64	Mr. Prasuram Chepang	Office Helper
65	Mr. Pandab Chepang	Social Mobilizer
66	Mr. Dipak Praja	Social Mobilizer
67	Mr. Chandra Bahadur Chepang	Office Helper
68	Mr. Sunil Kumar Kushwaha	Field Technician
69	Mr. Mangal Shah	Field Technician
70	Mr. Badri Bahadur Karki	Field Technician
71	Mr. Bet Raj B.K.	Field Technician
72	Mr. Man Bahadur Gayak	Field Technician
73	Ms. Nirmala Rayamajhi	Field Technician
74	Mr. Umesh Kumar Kattel	Field Technician
75	Mr. Buddhi Bahadur Magar	Field Technician
76	Mr. Shiva Raj Bhatta	Field Technician
77	Mr. Achyut Upreti	Field Technician
78	Mr. Shovaram Devkota	Senior Field Technician
79	Late. Rima Kumari Bhandari	Field Technician
80	Mr. Arjun Kumar Chhetri	Field Technician
81	Ms. Pushpa Kumari Chaudhary	Field Technician
82	Mr. Kameshwor Yadav	Field Technician
83	Mr. Jagat Prasad Upadhyaya	Field Technician
84	Mr. Rohini Raj Rijal	Field Technician
85	Ms. Kalika Chaudhary	Field Technician
86	Ms. Rita Kumari Chaudhary	Field Technician
87	Mr. Liladhar Panta	Field Technician
88	Ms. Kalawati Thagunna	Field Technician
89	Mr. Mohan Bahadur Karki	Field Technician
90	Mr. Dinesh Kumar Yadav	Field Technician
91	Mr. Birendra Sah	Field Technician
92	Ms. Kshamata Gurung	Field Technician
93	Ms. Uma Thapa Magar	Field Technician
94	Ms. Dipa Banshi	Field Technician
95	Mr. Suman Prasad Panta	Field Technician
96	Mr. Ram Dhyan Yadav	Field Technician
97	Ms. Sunita Kumari Shah	Field Technician
98	Mr. Tanka Bahadur Thapa	Field Technician
99	Mr. Gopal Prasad Shah	Field Technician
100	Ms. Nisha Malla	Field Technician
101	Ms. Bandana Dhungana	Field Technician
102	Mr. Sashi Ram Acharya	Social Mobilizer
103	Ms. Goma Kumari Chaudhary	Field Technician

e) Staffs/Professionals on Study Leave

S.N.	Name	Position	Country
1	Mr. Narayan Prasad Khanal	Senior Program Manager	Japan
2	Mr. Ujjal Tiwari	Senior Program Officer	Germany
3	Mr. Khagendra Baral	Project Coordinator	The Netherlands
4	Mr. Praseed Thapa	NRM Officer	Germany
5	Mr. Narayan Bhusal	Agricultural Officer	South Korea
6	Dr. Deep Narayan Sapkota	Livestock Officer	The Netherlands

Congratulations

FORWARD Nepal congratulates Dr. Luni Piya, formerly the Project Team Leader of Chepang Mainstreaming Program at FORWARD Nepal, for the successful completion of her PhD degree in Rural Economics from the Graduate School for International Development and Cooperation (IDEC), Hiroshima University, Japan. Dr. Piya has rejoined FORWARD Nepal in the position of Program Coordinator, effective from January 14, 2013.

Similarly, we also congratulate Mr. Bishnu Prasad Poudel, formerly the Project Coordinator of Plan-FORWARD partnership project in Makwanpur district, for successfully graduating on Masters in Crop Protection from the University of Hohenheim, Germany.

During the last year, many of our board members have also undertaken important responsibilities in their professional career. Professor Dr. Naba Raj Devkota, the Board Chairman assumed the responsibility of the Director at the Directorate of Research and Extension in the Agriculture and Forestry University, Chitwan from December 2012.

Mr. Ram Kumar Neupane, Board Vice-chairman has been designated as the Agricultural and Livestock Quality Control Manager with Helen Keller International, Nepal since May 2013.

Similarly, Mr. Ram Prasad Dhungana, Board Secretary joined Rural Reconstruction Nepal (RRN) in the post of Regional Director and based at Chitwan district effective from May 2012.

Finally, Mr. Krishna Prasad Gupta, Board Member joined CIMMYT-CSISA-NP as a Technical Officer effective from June 2013.

The FORWARD family wishes all the above staffs and board members a successful career and hopes for productive collaborations in the future.



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घाँसे हाते पुस्तिका		माघ २०६८
बगर खेती प्रविधि		भद्रौ २०६८
जैता : एक बहुउपयोगी बिरुवा	अंक ३१	मंसिर २०६७
गोलभेडा खेती प्रविधि		पौष २०६६
सार्वजनिक परीक्षण सहयोगी पुस्तिका		माघ २०६६
धानको नयाँजात : वर्ष २०१४	अंक ३०	भाद्र २०६६
नेपालमा मुड खेतीको सम्भाव्यता तथा प्रविधि चिनारी (पुस्तिका-मैथिली भाषा)		
जडीबुटी खेती (प्रविधि संगालो)		फागुन २०६५
भाडाको जग्गामा तरकारी खेती : एक अनुभव (पुस्तिका)		जेठ २०६५
चना बाली उत्पादनको उन्नत प्रविधि (पुस्तिका)		चैत २०६४
दिगो जनजीविकाका लागि उत्प्रेरणामूलक सन्देशको संगालो (प्रविधि र पहल)		पौष २०६४
बगर खेती (प्रविधि र पहल)		बैशाख २०६४
सामुदायिक पोखरीमा माछापालन : भूमिहिन तथा विपन्न समुदायका लागि आकर्षक व्यवसाय	अंक २९	बैशाख २०६४
स्थानीय स्तरमा बीउ प्रणाली सुदृढीकरण (पुस्तिका)		कार्तिक २०६३
धान बालीका प्रमुख रोग तथा तिनीहरूको व्यवस्थापन	अंक २८	कार्तिक २०६३
तोरी बालीको बीउ उत्पादन प्रविधि (पुस्तिका)		कार्तिक २०६३
तोरी बालीमा एकीकृत व्यवस्थापन सम्बन्धी जानकारी	अंक २७	कार्तिक २०६३
अन्न तथा दलहन बालीका जातहरू	अंक २६	कार्तिक २०६३
प्रविधि र पहल २		चैत्र २०६२
प्रविधि र पहल १		२०६२
घर परिसरदेखि बगरसम्म बिपन्न वर्गका कृषकहरूका सफलताका कथाहरू (पुस्तिका)		फागुन २०६१
आलु र गोलभेडामा लाने पछौटे डुङ्गा रोगको एकीकृत व्यवस्थापन	अंक २५	कार्तिक २०६१
चना बालीमा एकीकृत रोगकीरा व्यवस्थापन	अंक २४	कार्तिक २०६१
सुधारिएका प्रविधिबाट गोठेमल बनाउने तरिका	अंक २३	कार्तिक २०६१
के तपाईं आफ्नो जग्गामा नीम लगाउनु भएको छ	अंक २२	कार्तिक २०६१
तरकारी बालीमा कुपोषणका लक्षणहरूको संक्षिप्त चित्रावली	अंक २१	कार्तिक २०६१
तरकारी बालीमा कुपोषणका लक्षणहरू र उपचार	अंक २०	कार्तिक २०६१
बाली बिरुवाको पोषण प्रणाली बारे संक्षिप्त जानकारी	अंक १९	कार्तिक २०६१
नेपालमा मुड खेतीको सम्भाव्यता तथा प्रविधि चिनारी (पुस्तिका)		फागुन २०६०
तोरीखेत बाखा पालन अध्ययन, विकास तथा स्रोत केन्द्र, चितवन उद्देश्य तथा कार्यक्रमहरू	अंक १८	कार्तिक २०६०
तोरीखेत बाखा पालन अनुसन्धान, विकास तथा स्रोत केन्द्र, चितवन बन्देज प्रणाली अपनाई	अंक १७	कार्तिक २०६०
व्यवसायिक स्तरमा गरिएको उन्नत बाखा पालनको अवधारणा सम्बन्धी साधारण जानकारी		
माटोको उर्वशाशक्ति कायम राख्न गोबरगाँसको उपयोगिता	अंक: १६	कार्तिक २०६०
धानबाली पछि खालीहरै तराईका असिंचित खेतमा चना-खेतीका उपयुक्त प्रविधिहरू	अंक: १५	कार्तिक २०६०
केरा खेती	अंक: १४	कार्तिक २०६०
धान खेतमा नाइट्रोजेन तत्वको विनाश प्रक्रिया तथा मलखादको कुशल उपयोगिताका उपायहरू	अंक: १३	कार्तिक २०६०
बेरी क्षेत्रमा केरा र भूइँकटहरको मिश्रित खेती प्रविधि र बजार सम्भाव्यताहरू	अंक: १२	कार्तिक २०६०
बगर खेती आकर्षक आन्दानीको श्रोत	अंक: ११	कार्तिक २०६०
तराई र बेरीको लागि सम्भाव्य दालबाली : मुड	अंक: १०	श्रावण २०६०
सहभागितामूलक कृषि अनुसन्धान र विकास कार्यक्रमको प्रक्रिया र सफलता	अंक: ९	श्रावण २०६०
आयमूलक जडीबुटी समायो र खेती प्रविधि	अंक: ८	श्रावण २०६०
बाली उत्पादन बढाउन बस्तुभाउको गहुँतको प्रयोग	अंक: ७	श्रावण २०६०
बालीनालीको पोषणको लागि सिस्नो र शीतलचिनीको रसको प्रयोग	अंक: ६	श्रावण २०६०
असिंचित खेती प्रविधिको गहकिलो खुटकिलो : ढड्याएर बीउ रोजे विधि	अंक: ५	श्रावण २०६०
ओल खेती	अंक: ४	श्रावण २०६०
बेमौसमी-नर्सरी व्यवस्थापन	अंक: ३	श्रावण २०६०
सुख्खा पहाडी क्षेत्रमा उपयुक्त सिंचाई प्रविधि: प्लास्टिकको पोखरी	अंक: २	श्रावण २०६०
घरेलु च्याउ खेती	अंक: १	श्रावण २०६०

FINANCIAL SUMMARY 2012/13 (2069/70)

Balance Sheet

As at 31.03.2070

Particular	Schedule	Current Year	Previous Year	Figure in NRs.
Assets				
Non Current Assets				
Non Expendable Assets	1	10,881,446.34	4,866,216.81	
Investment on Share		12,197,681.96	12,197,681.96	
Current Assets				
Cash & Bank	2	3,166,663.93	6,317,367.91	
Advance Receivable	3	1,980,139.52	1,122,342.73	
Total Assets		28,225,931.75	24,503,609.41	
Fund Balance				
Unrestricted Fund		16,326,156.40	16,755,899.29	
Add: Balance transferred during the year		2,374,072.64	(429,742.89)	
Total Unrestricted Fund		18,700,229.04	16,326,156.40	
Restricted Fund	4	2,538,819.92	(2,800,800.85)	
Capital Donation Fund	1	2,521,347.83	2,244,600.74	
Gratuity Fund		2,504,133.00	2,109,063.00	
Current Liabilities	5	1,961,401.96	6,624,590.12	
Total Fund and Liabilities		28,225,931.75	24,503,609.41	

Income & Expenditure Statement

For the financial year ended 2069/'70

Particulars	Schedule	Current Year	Previous Year	Figure in NRs.
Income				
Unrestricted	6	11,109,643.38	9,317,485.07	
Restricted	7	54,315,959.20	81,602,344.92	
Total Income		65,425,602.58	90,919,829.99	
Expenditure				
Unrestricted				
Employee Cost	8	5,711,823.00	4,964,708.00	
Office and Administration Cost	9	4,941,688.83	3,842,956.53	
Depreciation Cost	1.1	456,131.55	509,820.54	
Restricted				
Programme Expenses	10	54,315,959.20	81,602,344.92	
Total Expenditure		65,425,602.58	90,919,829.99	





Members/Staffs of FORWARD and guests at the garden established by FORWARD in Devghatdham



FORWARD Nepal

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