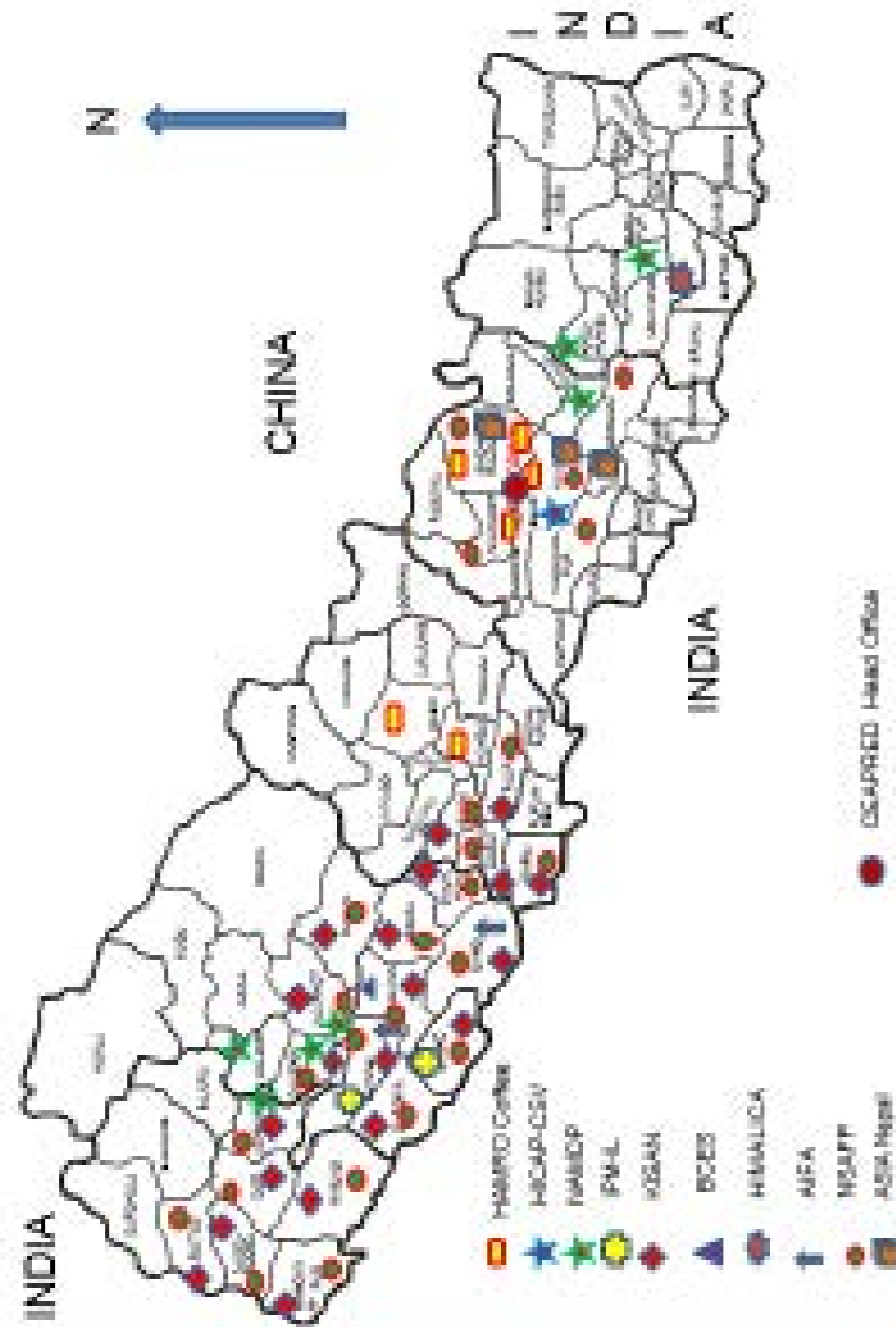


CEAPRED

www.ceapred.org.np

Annual Report
2016-17



FOREWORD

We are pleased to present this Annual Report, which provides a brief account of the major projects implemented and the key results achieved by CEAPRED within the fiscal year 2016-17. CEAPRED's activities have continued to be focused on three main thematic areas; namely, rural poverty reduction and livelihood enhancement, sustainable natural resource management and ecosystem services, and action/policy research. Five of the ten projects implemented during the period fall under the first thematic area – in line with CEAPRED's major emphasis on raising the living standards of the rural poor and disadvantaged families. During the reporting period, two of the ongoing projects – the UK Aid-funded SAMARTH-NMDP Pig Sub Sector project implemented in partnership with Adam Smith International (the Lead) since 2012, and the USAID-funded KISAN project implemented in partnership with Winrock International (the Lead) since 2013 – came to an end. The period also marked the beginning of four new projects – Asia Innovative Farmers Activities (AIFA), Nepal Seed and Fertilizer (NSAFP) Project, Hamro Coffee and Development of Climate Change Resilient Agriculture (DCRA) Project.

Over the years, climate change has become a prominent and growing threat, with its immediate and lasting brunt falling on agriculture, and therefore, on the poor and marginalized people, for whom agriculture is the primary means of living. CEAPRED has been implementing climate change adaptation activities for the past several years, mainly on action-research mode and pilot scale. But, since recent past, identifying, testing and validating climate-resilient agriculture technologies have received greater emphasis, and adoption and scaling up of such technologies in other projects and areas have become a core activity in CEAPRED's projects.

Collaboration and coordination with government line agencies at all levels has been a key element of CEAPRED's development philosophy, and it has been an integral part of project implementation strategy adopted by CEAPRED since its establishment 27 years ago. We strongly believe in the merit of this strategy and are committed to adopting this strategy in all our projects in the future. However, we do foresee some new challenges to this in the new federal structure of local governance, which requires greater and more levels of coordination and collaboration, which, in turn may mean, more staff time and efforts on our part.

But there is no turning back from what we believe is the right path to sustainable development – the path of 'partnership and togetherness'. We shall continue to move on and ahead along this path, and we believe that we will succeed as long as we keep receiving your support. We are grateful to our donors, development partners, and friends for their cooperation and support in the past and look forward to the same in the future.

Thank you all.

Hari Krishna Upadhyaya, PhD
Executive Chairperson
CEAPRED

ACRONYMS

ANEP - Agriculture and Nutrition Extension Project
ASI – Adam Smith International
ASIA - Association for the International Solidarity in Asia
CBS – Central Bureau of Statistics
CC - Collection Centre
CEAPRED- Center for Environmental and Agricultural Policy Research, Extension and Development
CO - Community Organization
CPBF - Commercial Pig Breeder Farmers
CSV - Climate Smart Village
CRMV- Climate Resilient Mountain Village
DADO - District Agriculture Development Office
DAG - Disadvantaged Groups
DAO - District Administrative Office
DCRA- Development of Climate Change Resilient Agriculture in Nepal
DDC - District Development Committee
DFID - Department for International Development
DoA - Department of Agriculture
EU - European Union
FFD - Farmers' Field Day
FG - Farmer's Groups
FM - Frequency Modulation
FTF - Feed the Future
FYM - Farm Yard manure
GoN - Government of Nepal
HIMALICA- Rural Livelihoods and Climate Change Adaptation in the Himalayas
HH - House hold
HORT CRSP- Horticulture Collaborative Research Support Program
ICIMOD - International Centre for Integrated Mountain Development
IDE- International Development Enterprises
IFAD- International Fund for Agriculture Development
IFCAS - Integrated Floating Cage Aquaculture System
IPM/IL- Integrated Pest Management/Innovation Lab
IPM - Integrated Pest Management
IQC- Internal Quality Control
IRRI- International Rice Research Institute

IT - Information Technology
ICT- Information Communication Technology
KISAN - Knowledge based Integrated Sustainable Agriculture and Nutrition
M4P - Making market work for the poor
MFI - Microfinance Institute
MIT- Micro Irrigation Technologies
MoAD - Ministry of Agricultural Development
MOU- Memorandum of Understanding
MPC- Market Planning Committees
MT - Metric Ton
NARC - Nepal Agricultural Research Council
NEAT- Nepal Economic Agriculture and Trade
NGO - Non Governmental Organization
NMDP- Nepal Market Development Program
NPR- Nepalese Rupees
NSAFP- Nepal Seed and Fertilizer Project
NSB - National Seed Board
PAF - Poverty Alleviation Fund
PBPF - Pure Bred Pig Farmer
PEAN - Pig Entrepreneurs Association Nepal
PMCA - Participatory Market Chain Approach
SDC- Swiss Agency for Development and Cooperation
SIS - Small Indigenous Species
SQCC - Seed Quality Control Center
TG - Thematic Groups
USAID- United States Agency for International Development
USD - United State Dollar
VDC- Village Development Committee
VHPS - Village Hybrid Pig Seed
WI- Winrock International

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ABOUT CEAPRED

Established in April 1991, the Center for Environmental and Agricultural Policy Research, Extension, and Development (CEAPRED) is a leading national NGO in Nepal. It is one of the first non-governmental organizations in the country to work in agriculture sector. CEAPRED's programmatic focus since its inception has been on sustainable poverty reduction, livelihood enhancement and improvement in food security. CEAPRED's work in the past two-and-a half decades has taken a number of pioneering initiatives ranging from the commercial off-season vegetable farming in the early 1990s to vegetable seed production, livestock farming, climate resilient agriculture and promotion of Market work for the poor (M4P) approach in recent years. An integral part of CEAPRED's approach consists of maintaining close cooperation, collaboration and working relationship at both central and local levels with related government, non-governmental and private sector agencies to ensure smooth and effective implementation of program activities and sustainability of the impacts. Over the past 25 years, CEAPRED has successfully implemented 90 development and research oriented-projects in 61 of the 75 districts of Nepal, directly benefiting over 300,000 households and generating incremental incomes valued at billions of rupees annually. In the process, a large number of social, physical and economic infrastructures have been developed, the benefits of which have been reaped by a much larger mass of population. A large number of our projects concern income generation activities through commercial high-value agriculture and agro-enterprise promotion and the creation and expansion of new market infrastructures and channels to strengthen community value chains. Over the years, CEAPRED has grown into an institution of international repute and considerable strength, size, and coverage. In addition to our fully-equipped central office in Lalitpur, our 32 operational field offices and over 250 full-time staff manage our entire outreach. Our current financial turnover is valued at US\$ 2.3 million during the year.

CEAPRED has its own statute and regulations in compliance with government regulations and approved by its General Assembly. The

Executive Board consists of seven members elected every four years by the General Assembly and is led by a Chairperson, who is also the Chief Executive of the organization. The Executive Board, including the Chairperson, has always worked on a voluntary basis. CEAPRED has sustained its institutional status as a non-political, inclusive and value-driven organization. Transparency, accountability and service constitute the core elements of CEAPRED's organizational values and norms. It was registered with the District Administration Office of Lalitpur (Registration number 130/047/48) and with the Social Welfare Council (Registration number 478) as a not for profit organization. CEAPRED is a non-discriminatory and equal opportunity employer.

CEAPRED has been implementing its program mainly under three thematic areas:

- Poverty Reduction and Livelihood Enhancement;
- Sustainable Ecosystem and Environmental Management and
- Action/Policy Research

CEAPRED adopts a three pronged strategy (Social Mobilization, capacity development and local institution building and strengthening) to implement most of its program. CEAPRED has evolved over the past two and half decades to a large national level non-state development actor in Nepal and is one of the most well known professional developmental NGO's of Nepal with impressive and proven track record on contribution to poverty reduction and livelihood improvement of rural poor in Nepal, which has been viewed as a hallmark of CEAPRED's institutional development.

CEAPRED's organizational behavior and functions have been consistently guided by its core values of transparent and voluntary governance, non-partisan and human-centered development, and fully accountable and responsive operation. CEAPRED's core values have guided the work of CEAPRED and defined the code of conduct of its staff at all levels of its operation.



Poverty Reduction and Livelihood Enhancement

Major bulk of CEAPRED's initiatives are directed towards rural poverty eradication and livelihood enhancement through economic empowerment of the rural poor, and the associated activities have been focused on high-value commercial agriculture, including vegetable seeds, off-season vegetables, aquaculture and livestock.

CEAPRED has been heavily involved in market oriented production system in agriculture sector, thus providing access to market for the produce of rural poor. CEAPRED's work with landless and near-landless families comprised activities such as home gardening, group savings, small livestock rearing, and micro-enterprise development. CEAPRED's livelihood enhancement programs have brought visible changes in the household economy of beneficiaries, and contributed to significant improvements in the social, economic and psychological conditions of the poor and disadvantaged families. Women, ethnic minorities and vulnerable groups are CEAPRED's primary target groups. Many members of such groups, who hardly participated in public activities in the past, are now holding executive positions in community organizations and are able to claim their share of development benefits. In most of the areas, social and gender discriminations have been reduced, and the poor are making their voices heard. Increased household incomes have contributed to improved food security and nutrition, education, health and sanitation.

Building Community Enterprises for Smallholders (BCES)

Building community Enterprises of small holders (BCES) funded by Federal Ministry of Economic Cooperation and Development (BMZ) and Deutsche Welthungerhilfe (WHH) Germany is designed to combat poverty and food insecurity of the most vulnerable sections of the society and working to contribute to the income generation and livelihood improvement of 2700 smallholder farm families along Tulsipur-Rukum road corridor of Salyan district. The intervention focuses on increased farm production, crop diversification and marketing of surplus through community enterprises to increase their income for improving their livelihood.

Major accomplishments:

- During the year, a total of 105 resource farms have been established at each group by resource farmers (RF), and their technical capacity has been strengthened through trainings and technical guidance by the project staffs, Community Resource Persons (CRP) and Community Enterprises. The RFs have been further facilitating the Farmers Field Schools (FFS) and mobilizing group members for business activities.
- The project successfully established three community enterprises (CE) for production, processing and marketing of spices crops, fresh vegetables and vegetable seeds in Patera Banjhkanda, Bagchour Tharmare and Pedikhola Sivarath respectively. An agreement has been made with each CE's in advance to work for the mutual benefit of CE and the community people. CE's were supported with one grinding cum husking machine to start its activities. The project has planned to further support the CE's with furniture's, stationeries, human resource and room rent for office operation from July 2017 for the first 12 months.



Farmer inspecting his onion seed production plot at Dhakadham, Salyan. April 2017



Field staff providing farmer with technical information on radish seed production, Shivarath, Salyan. March 2017

- A number of trainings were organized by the project to improve the skills and capacity of the farmers. The trainings were organized with the resource persons from district agriculture development office, district industry and small cottage committee and the project staff. Resource farmer's trainings were completed on different topics for 105 resource farmers with a total of 12 trainings till date. Similarly 3 FFS have been organized where a total of 2,156 farmers (comprising of 1,725 female and 431 male) participated and learnt technical knowledge and skills. Similarly, 27 CRPs were trained on pest and disease management and post harvest handling of major vegetable crops and 22 CE members participated in four day business development plan training. In addition, a total of 7 technical trainings were organized on IPM, seed production, Turmeric production, chilly production, fresh vegetable production and community mobilization and group management for 105 resource farmers, which further transferred the knowledge and skills to 2,736 group members through farmer to farmer trainings.
- Feasibility study for community irrigation has been conducted by external consultant and communities were supported with the construction materials for four cement ponds and two electric motors to irrigate more than 50 hectare land, directly benefitting 350 HHs.
- Three day project review and sharing workshop has been completed from 21-23 March, 2017 at Sauraha, Chitwan where all the WHH partners from Nepal and Bangladesh participated. WHH Nepal and India facilitated the workshop where all the



Vegetable production plot, Tharmare

partners presented their project updates, baseline situation and business vision. A half day exposure visit to FORWARD site was also conducted to observe the collection center cum community enterprises.

- Four days capacity building training for project staffs in Pokhara including one day exposure visit to Bhadaure, Kaski jointly organized by WHH, CEAPRED and FORWARD. The team visited and discussed with the farmers in Bhadaure to learn about the organic production, marketing and the Participatory Guarantee System (PGS).

Budhathoki escaped the vicious poverty cycle by Commercial Vegetable production

Tejendra Budhathoki, 40, lives in Banjhkanda 7, Jyamire in Salyan with his family of 6 members -4 children and his wife. He had a very hard time to manage household expenses and was only able to feed his family hardly for six months only.

He went to India for employment, where he worked for six months but could not earn as expected and returned to go to gulf country for job, where he worked for two years, which helped him to pay back his household loan, but left with only NPR. 70,000 for any other business. He worked in a cooperative with meager pay of NPR. 2500/ month, which did not help him to come out of poverty cycle until the BCES project started in the area during January, 2016.

When the project started, he got involved as a resource farmer and received various technical trainings, agri-inputs and technical support. Since project staffs stayed in the community, he took this as an advantage and kept his farming under close supervision of project staffs. The efforts of one year has started to bear the fruits of success, as he has started vegetable and spices crop production commercially, for which, he rented about 1.5 ropani and share cropped in four ropani of land. Adopting the smart practice of farming, currently, he earns about NPR. 150000-200,000 per annum from tomato sale and about NPR.200,000 from the sale of other vegetables' and spices crops. His children are now studying in the private schools and he has no loan to pay.

With the help of the project, he has registered himself as a progressive farmer to promote ginger and turmeric in a government project. He is very happy by the support of BCES as he not only got some inputs but received continuous technical support and encouragement to move forward. His dream is to become a successful agriculture entrepreneur in this area and motivate others to engage in commercial vegetable and spices production, which is much better than looking for employment in gulf countries.



Tejendra Budhathoki, narrating his story to CEAPRED Staff.

SUCCESS STORIES

Nepal Agricultural Market Development Program (NAMDP) -Phase 1

Nepal Agricultural Market Development Program (now named as Sahaj-Nepal) implemented jointly by Swiss contact (lead) and the Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED) is being implemented in eight districts (Ramechhap, Khotang and Okhaldhunga in the east and Jajarkot, Achham, Kalikot, Dailekh, and Surkhet in the west) aims to increase farmers' income by facilitating their engagement in commercial agriculture markets and participation in networks within markets. Sahaj follows the Inclusive Markets (M4P) or Market Systems Development (M4P) approach, which focuses on the wider market system and aim to make systemic changes by addressing the root cause constraint obstructing the agriculture sector. Sahaj takes on a facilitating role and works with both private and public sectors. Sahaj entered its implementation phase from November 2016.

KEY ACCOMPLISHMENTS:

- Signed partnership agreements with seven small and national level companies – Qmed Formulation, Probiotech Industries, Delicias Hatchery Udhyog, Agri Care Nepal, Bagaicha Farm House and Resort, NAF Seeds, and NMS Agro. These partnerships will implement various activities targeted at addressing constraints faced by farmers and the market system. The partnerships and the subsequent activities are intended to have long-term relevance.
- Sahaj also commenced support to Market Development Forum Nepal from May 2017. Since May, MDFN has already held two Executive Committee meetings, two General Assembly meetings, and organised one thematic Internal Learning Event. It is currently in the process of updating the MDFN website.



Citrus farmers attending a CPI training in Sindhuli



'Stakeholders' Interaction Programme on Post-Harvest Management and Development' workshop, February, 2017

Hamro Coffee - Expanding Opportunities for Nepalese Coffee Farmers and Traders



Coffee orchard visit by the experts

The overall objective of the project is to increase the income of small holder coffee producers through an enhanced market driven specialty coffee sector".

ICCO Cooperation (ICCO) together with co-applicants- Centre for Environmental and Agricultural Policy, Research, Extension and Development (CEAPRED) and Nepal Coffee Producers Association (NCPA) aims to achieve this goal by realizing outcomes and activities that expands across production, processing, marketing and institutional strengthening. The action will primarily focus on enhancing the quality and quantity of coffee cherries produced (yielding high productivity) and upgrading primary processing to ensure quality of green beans that would, in the long term, lead to increased demand of unique Nepalese feature specialty coffee in the domestic and international niche market. The action envisions a robust coffee sector that provides a sustainable income for smallholders as a part of an integrated production system and which expands the opportunities for Nepalese specialty coffee into special domestic and international niche markets. Further, the implementation of proposed project will remove access barriers from 'Bean to Cup' and embed knowledge, skills, technologies and linkages across all the actors in the coffee value chain. The project is being implemented in six districts of Nepal where there are already ongoing activities, and improvement can be done and good practices can be scaled up.

KEY ACCOMPLISHMENTS:

- The project initiated its activities from 15th March, 2015 with the selection and placement of project staff (Project officer and value chain officer) at their respective sites. A launch-on workshop was organized on 3rd May, 2017, and project inception meeting was held from 8th -10th May, 2017.
- The Detailed Implementation Plan (DIP) for the CEAPRED component of the project was developed and submitted to ICCO Cooperation for endorsement. The project team participated in various project related meetings with the implementing partners to finalize the working sites in the project districts, the cooperatives, farmers groups and number of beneficiary households.
- Initiated the procurement of consultancy services for the production of manuals on Coffee production and customized organic fertilizer for coffee.
- The baseline survey of the project was conducted between 29th May 2017 to 5th June 2017, the data being analysed.

Nepal Seed and Fertilizer Project (NSAFP)

Nepal Seed and Fertilizer Project (NSAFP) is implemented by a consortium of partners, where International Maize and Wheat Improvement Centre (CIMMYT) is responsible for the overall coordination.

In the seed sector, crop-specific activities is led by four institutions; International Rice Research Institute (IRRI) for rice, CIMMYT for maize, Nepal Agricultural Research Council (NARC) for lentil and Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED) for vegetables (cauliflower, tomato and onion). The project is working in 20 KISAN districts along with five earthquake affected districts: Sindhuli, Kavre, Makawanpur, Nuwakot and Sindhupalchowk.



Vegetable Seedling Nursery in Nepalgunj

KEY ACCOMPLISHMENTS:

- Regional level seed production training for seed grower farmers for quality production, processing and quality assurance were conducted on Quality seed production, processing and quality assurance at Butwal, Nepalgunj and Dhangadi on 21st, 25th and 26th April 2017 in the targeted crops (Rice, Maize, Lentil, Cauliflower, Tomato and Onion), participated by 20, 36 and 29 trainees respectively.
- Joint monitoring of vegetable trials (TRP & MLT) in the targeted area with CIMMYT was carried out in the MLTs and TRPs sites of Kapilvastu, Arghakhanchi, Dang, Salyan, Banke and Kailali districts from 20th April to 27th April 2017.
- Training of trainers (ToT) for Subject Matter Specialist (SMS) in vegetable seed systems was jointly organized from 23-25th March 2017 at Butwal for 30 SMS participants. The training was organized by CYMMIT, in which, CEAPRED led the vegetable seed production. Participants were from Seed Companies, Agriculture and Forestry University (AFU), Agriculture College, Lamahi, Agriculture Campus Paklihawa (TU), DADOs, Agriculture Research stations (NARC) and CEAPRED. These SMS will work as resource persons to conduct regional trainings for seed producers of seed companies in different regions. SMS training was focused on seed production of NSAF project targeted crops (rice, maize, lentil, cauliflower, tomato and onion) and on processing, storage and quality assurance of seeds. For open pollinated varieties, resource persons were from NMRP Rampur, NRRP, Hardinath, HRD, Khumaltar and



Seedlings for transplantation

NGLRP Nepalgunj, while, for the hybrid technologies, two seed experts from the Indian seed companies were invited. Similarly, for quality assurance, resource person was from SQCC and for seed processing, the Indian seed expertise services was availed. Hybrid seed production technologies basically covered maize, rice and tomato.

- Trouble Shooting Modules (TSM) for advisory services to partners on vegetables (cauliflower, tomato and onion) has been developed through consultancy for solving the problems of cauliflower, tomato and onion and to make smooth access of technologies to seed producers and extension workers. The draft TSM has been prepared and submitted for comments.

Completed Projects under this theme:

Knowledge-based Integrated Sustainable Agriculture and Nutrition Project (KISAN)

Funded by the USAID, the five year KISAN project is a part of the US Presidential Feed the Future (FTF) Initiative in Nepal implemented with Winrock International as Lead partner.

The project seeks to reduce poverty and hunger in Nepal sustainably by achieving inclusive growth in the agriculture sector, increasing income of farm families and improving nutritional status, especially of women and children in over 160,000 households of west, mid-west, and far-west regions of the country targeting to impact one million Nepalese. CEAPRED is contributing in the agriculture component of the project in close coordination with Ministry of Agriculture Development (MoAD). Moreover, KISAN engages with a wide range of public, private and civil society stakeholders that include farmers, NGOs, academic and research institutions, businesses, training

centers and media partners. This project is also closely aligned with the other FTF projects in Nepal: the various innovation lab (IL) programs and Cereal System initiative for South Asia (CSISA). The project has provided short-term agricultural sector productivity/ food security training (cereal crops and lentil seed as well as grain production, maize seed production, vegetable production, nursery management, crop production management, plant protection, post-harvest), marketing as well as saving, credit and basic book-keeping orientation to the farmers. Local service providers were trained on improved agriculture production, business planning, gender sensitivity and environmental impact. In collaboration with line agencies irrigation schemes were constructed and maintenance training has been provided to the irrigation user groups. Likewise, dissemination messages related to improved technologies and market price through FM/radio and other media helped farmers to get right information at right time. It has further enhanced agri-input distribution system through establishment and training of private sector input and other local service providers.



US Ambassador's visit to the KISAN project sites and interaction with the farmers

KEY ACHIEVEMENTS:

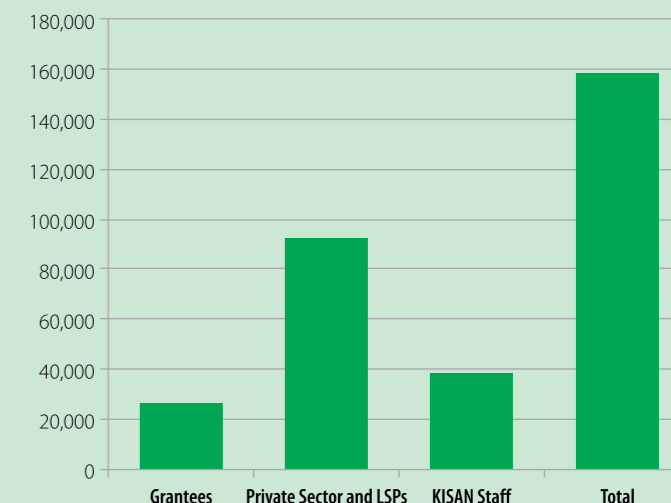
- **Seed Production** – KISAN has worked with farmers and seed companies to produce maize, rice and lentil seed varieties popular among farmers with high market demand. The preference for medium fine rice in urban areas has resulted in increased demand for medium fine rice varieties by millers, so farmers are keen to access the seed, to grow these market-led varieties. Seed companies have begun addressing this trend by increasing production of medium fine varieties of seed. KISAN project so far has assisted to produce 5,866 MT of seed including 4656 MT of rice seed, 1056 MT of maize seed and 154 MT of lentil seed.



Seed company providing Foundation Seed to Shiva Shakti Farmer Group at Dhikpur-9, Kapilbastu

- **Access to finance** –The project has already trained 2,446 key persons from 1,273 groups on proper book keeping, savings promotion, and credit provision at the farmer group level. It has also provided capacity building training to cooperatives and coordinated a workshop with wholesale lenders. As a direct result of KISAN's cooperative focused activities, five cooperatives received NPR 45.5 million in wholesale loans for on-lending to farming households
- **Irrigation**- KISAN has completed 205 irrigation schemes and seven multiple use water schemes, irrigating a total of 535 hectares and benefiting 2,845 farmers.
- **Leveraging GON Assistance** - KISAN supported 48 farmer groups registered with the DADOs during 2017. It has supported 1,541 groups to register with DADO, over 30% of the 4,004 project beneficiary groups. Registration with the DADO is critical to enable groups to access district level funding.
- **Knowledge dissemination:** Dissemination of knowledge through trainings and demonstrations has been the main activity of KISAN project. During the year, KISAN has provided or facilitated training to 158,698 farmers. It continues to transition to less "doing" and more "facilitating" and "linking". Of the total number of households that received training during this year, 26,923 received training from grantees, 92,934 received training from LSPs or non-grantee private sector partners, and only 38,841 received training directly from KISAN staff. During the year, 1,396 demonstrations were carried out by KISAN or KISAN surrogates and grantees (780 demonstrations by KISAN or KISAN surrogates and 616 demonstrations by grantees). KISAN published and disseminated to all farmer groups a directory of traders. In addition, it also published and disseminated guidelines for discussion and negotiation with traders to all the farmers.
- KISAN supported 18 grantees companies to establish management information systems (MIS) for information management and product traceability. MIS system contains a complete maize-producing farmer database; tracks overall supply chain and inventory of raw materials and logistics; enables traceability of production; and helps maintain accounts, HR, and payroll system.

KISAN training by Private Sectors/LSPs, KISAN staffs and Grantee



- "Mechanization Study" commissioned by KISAN found that farmers are interested in farm equipment but face significant barriers, including lack of product knowledge, lack of sales and service in rural districts, and lack of access to finance at suitable terms and amounts. This study helped to identify successful approaches by assessing, documenting, and promoting the successful approaches of three KISAN grantees, notably: increasing access to financial products for farm machinery; building capacities of service technicians; and building farmer awareness. It also helped to raise awareness through demonstrations of farm equipment, exposure visits, material development, and interactions in partnership with district and national-based government and non-government stakeholders including dealers, importers, NAMEA, and CIMMYT. It also advocated for new financial products by promoting loans for group machinery purchase; wholesale lending to cooperatives; and farmer support services to help banks assess costs, benefits, and risks of mechanization loans and support skills training by helping develop training packages for dealers and mechanics on end-user operation and maintenance; mechanic trainings on farm machinery repair; and coordination with private sector and DADOs to subsidize and train farmer groups that purchase farm machinery. The study also advocated to promote equipment rentals as the first step in a series of incremental steps to achieve greater adoption: rental to group ownership to individual ownership; promoting women-friendly technologies; and develop business cases for new farm equipment.



Plastic mulching for commercial vegetable production at Kailali

Vegetable farming changed the mind of Dev Bahadur to migrate abroad for job

Dev Bahadur Gharti, 29 from Rolpa has a family of five with three daughters, himself and his wife. Before joining KISAN program, when he was struggling to manage his livelihoods, he tried to look for a foreign job for better income, but he did not have enough money to get the requirements of foreign job. He could not think any of his future. His neighbor advised him to meet with Nim Bahadur Roka, LSP 1, KISAN project. When he met Nim Bahadur he asked for advice to get some income from agriculture and Nim Bahadur suggested him for vegetable farming. Dev Bahadur joined the Laliguras vegetables group, and learned on vegetable farming through trainings and demonstrations. Once, he found that there is good income, he leased four Ropani land (about 0.3 ha) near his field and started the vegetable farming. When he faced the problem, he contacted Nim Bahadur, who provide him advice and exposed him to Agro vet, MFI and package of KISAN trainings and workshops, which improved his confidence on vegetable farming. With regular follow ups and advice from KISAN personnel, he got high yields 1.3 MT Tomato, 300 kg. Cucumber 400 Kg, beans 200 Kg, Cabbage 250 and Cauliflower 200 Kg from his fields, which he sold to nearby hotel and market center, which resulted to net income of NPR.150,000. In future Dev Bahadur plans to grow additional vegetable in four ropani (0.3 ha) land area and want to become a successful vegetable grower of Laliguras vegetable group.

SUCCESS STORIES



KISAN LSP training on vegetable farming



Dev Bahadur in his vegetables field

SAMARTH- Nepal Market Development Program (NMDP) - Pig sub sector

The pig sector market development project funded by DFID, UK under the Samarth-NMDP program, managed by ASI, UK and implemented by CEAPRED in two phases of two years each focused on the pig sub sector to help pilot, scale-up and bring about systemic changes that helps the market system to function effectively and inclusively creating right condition for improved economic growth and poverty reduction.

In addition it also provided linkages to basic services to build capacity and opportunities for the poor to bring about sustainable and systemic changes in the pig industry of Nepal. The project was designed to realize systemic change by unlocking key systemic constraints in the pig and pork market system, facilitating to improve the capacity and incentive of key market system players to expand their business services especially in the pig rearing areas by piloting pig and pork related innovative business models that ensure win-win relationship in demand, supply and transaction side of the service market. It has facilitated a sustainable pig-breeding system wherein the private breeder farmers produce pure as well as crossbred piglet for fatteners mediated by local Agro-vet/VAHW working with small village pig breeder group at the VDC level. The project was implemented in all development regions of Nepal, focusing in nine major pig pocket districts. The pig sector which was largely neglected in the national policy, research and development, has received a new lease of life through the activities of this project and has left some noticeable foot print for the development of this sector in future.



Hybrid pigs in the farmer's Household

KEY ACHIEVEMENTS:

- The most significant achievement of the project was the development of an easier and simpler method of genetic improvement of national pig herd through fresh semen AI, which was successfully launched through the identified nucleus herds following their testing and freedom from diseases potentially transmitted through semen. The breeding farms selected for fresh semen AI business were made free from potential diseases by testing them through the most advanced Real time RT-PCR test (introduced for the first time) in the country for PRRS testing. Fresh semen AI was launched from these nucleus farms and the initial result show that the conception from fresh semen was more than 90%, with litter size of more than 10 piglets (up to 20 recorded) and the insemination can be carried out by technicians with additional simple hands-on trainings. This landmark achievement of the project needs to be institutionalized in the national system with the development and enforcement of regulatory mechanisms for its operation and continuity.
- In addition to this achievement, the project promoted the good husbandry practices (GHP) at different levels of producer farmers, which will support for the production of quality pork for internal consumption and export.
- The mini-slaughter houses initiated by the project were taken further by the project with the establishment of two more slaughter houses at Dharan, Sunsari and Sharanamati, Jhapa. This approach was further strengthened by the regular program of the government (Directorate of Livestock Marketing, Department of Livestock Services) by supporting for the establishment of additional ten slaughter houses in different parts of the country.
- The continuous effort of the Project and PEAN has led to the development of a special pig mission program by the government which is implemented in the ten districts of the country, and now further extended to five new districts. The mission program was further bolstered with the declaration of two districts Kaski and Jhapa as Pig Park districts aimed to produce process and deliver the quality pork not only for the national consumption but also for exports.
- The project also supported the Department of Food Technology Quality Control (DFTQC) and Department of Livestock Services for developing and standards along the value chain aimed towards the export. The standards for slaughterhouse and transportation of pigs, Good Husbandry Practices for pig rearing and Good Manufacturing Practices for pig meat processing have been endorsed by the government. The guidelines and standards developed with the project support would further pave the way for improving the pork products to the international standard as per the quality requirement of the importing country. Exporting of pork products would create more opportunities for producers, processors and traders at all levels and will act as a catalyst for the growth of the sector in the country.
- The concerted efforts of all actors at all levels have contributed to obtain tangible outputs from the project, which needs to be developed further by all concerned for the betterment of the pig sector (industry), which will contribute to improve the livelihoods of all agents throughout the value chain of the sector.

Pioneering new technology of pig breeding in Nepal – Fresh Semen AI developed and disseminated

Samarth-NMDP pig sector project pioneered the fresh semen AI in pigs in Nepal and partnered with government and private producers for production and marketing of fresh semen AI in pigs to multiply the good genetic materials in the pig herds and transfer the benefits of increased pig production in the pig farming communities. Fresh semen has been produced in the selected pig breeding farms of Department of livestock Services (Pokhara Livestock farm), NARC (RARS, Tarhara and Swine and Avian Research Program, Khumaltar) and selected private pig breeding farms (PLPL, Pokhara and Kulung bangur farm, Jhapa) following their testing and freedom from diseases potential to be transmitted through semen especially PRRS. In addition, production and marketing trainings were conducted and completed and fresh semen AI was brought to the market. As of now, many fresh semen doses have been produced and successfully inseminated and so far, 90 sows have been inseminated with the conception rate of around 90%. On an average, 11 piglets were born per farrowing from fresh semen AI with highest record of 20 piglets recorded. Based on the successes, the public sector has shown positive indication by committing funds and programs in the pig sector. However, the sustainability of the system lies within the willingness and skills of the public and private actors, which is very important for the success of the sector. The systemic change is already been triggered, but the public, private sectors and PEAN need to work together to maintain the quality genetic materials within the breeding farms through planned breeding programs to disseminate it in the pig producers and promote pig and pork industry at large.



Artificial Insemination in Pigs with Fresh Semen

Sustainable Ecosystem and Environmental Management

Since its inception, CEAPRED has worked in partnership with local communities and other organizations to improve the environment. The associated projects/programs have ranged from community-based solid waste management launched in 1991 to climate change adaptation and mitigation program in recent years. The promotion and dissemination of local innovations, traditional knowledge and technologies combined with awareness programs on environment and human health-friendly farming practices constituted the core activities under this theme. Similarly, community-based and participatory varietal and cropping system improvement practices adopted by CEAPRED have been useful in sustainable development and transfer of climate-resilient technologies in agriculture.



Rural Livelihoods and Climate Change Adaptation in the Himalayas (HIMALICA)

The Rural Livelihoods and Climate Change Adaptation in the Himalayas (HIMALICA) Initiative funded by the European Union and managed by ICIMOD aims to support poor and vulnerable mountain communities in the Hindu Kush Himalayan region in mitigating and adapting to climate change.

This Initiative has been working to reduce poverty, increase the resilience of local communities, and ensure the equitable and sustainable wellbeing of men and women in the Hindu Kush Himalayas by building the capacities of the local institutions, promoting new livelihood options, and encouraging regional cooperation in the promotion of equitable approaches to sustainable mountain development.



Demonstration of IPM Technologies to the farmers

KEY ACCOMPLISHMENTS:

- During the year, farmers of all three clusters produced about 1,828.6 MT of Vegetables, of which, 1,644 MT was sold in the market. The total earning from vegetable sale was about 33.83 million rupees (gross income). This figure also indicates that the farmers consumed about 184 MT vegetables in their households, which roughly accounts about 1.0 kg vegetable consumption per household per day, reflecting the contribution of the program towards human nutrition and well being of the communities along with increased income of about 33.83 million for the involved farm households. This income reflects the gross income of about 61,500 NPR/ Households/years, of which, NPR. 40,000 was calculated as the net income from the sale of vegetables, in addition to the household consumption of the vegetables by the farm family at choice.
- A total of 90 wastewater collection ponds were demonstrated for irrigation. Similarly, 50 drip sets were demonstrated for drip irrigation. Similarly, 894 demonstrations were conducted on nursery establishment, crop management, plastic tunnels, waste water management, jholmal preparation and application, cowshed management and IPM in all 27 groups.



Plastic House under construction



Installation of Solar Panel for Lift Irrigation at Saune

- Project contributed to supply about 4.5 MT fresh vegetables without any chemical residues to the market daily for the consumers, which contributed to reduce health hazards and well being of the consumers.
- Project supported to improve 90 animal sheds and farmers themselves improved 64 animal sheds, thus during this period, a total of 154 animal sheds were improved to facilitate urine and dung collection for Jholmal preparation and easy cleaning of the sheds and welfare of the animals.
- ICT based information flow mechanism has been established to keep the farmers updated on market price of the agriculture products, weather information, and latest technical information based on the crop calendar. The SMS is being sent regularly thrice a week to 107 selected leader farmers in the groups, who then share it with their neighboring farmers.
- Four students have been supported for their technical education at the JTA level in a local technical school.
- A total of 19 irrigation schemes (Canals-3, Borings-8, Solar lift-2, Wells-5, Pipe intake -1) were established to support the community. Among them, eight schemes have been completed and they are operational. The remaining are under different stages of construction. A total of 365 households will be benefited from the irrigation schemes directly with 63 ha of land irrigated, thus mitigating the water scarcity induced climatic constraint.
- A series of trainings have been organized, which included nursery management, crop management, post harvest technologies, IPM, Jholmal preparation and application, compost management, women leadership development and gender and social inclusion. A total of 111 training events were organized where 5,496 farmers showed their participation which included 3,517 female (64%) and 1,979 male.

Development of Climate Change Resilient Agriculture in Nepal (DCRA)

Development of Climate Change Resilient Agriculture in Nepal (DCRA) aims to promote a sustainable and environmentally friendly production model in 3 districts of Nepal - Kavre, Sindhuli and Sindhupalchowk implemented with financial support from Asia-Unlus.

DCRA aims to build the capacity of 4,500 HHs which can respond to climate change through the cultivation of highly adaptable local varieties and ecotypes. The main objective is to increase the market share for traditional agricultural products (vegetables and seeds) which conform to the Organic Certification Nepal guidelines through a Participatory Guarantee System (PGS) which stimulates demand and raises market awareness and propagate conservative, sustainable agricultural practices for the production of traditional agricultural produce which have a low environmental impact in terms of their carbon footprint and water consumption.

Never imagined Vegetable Production would bring money home

Urmila Khadka – 33, from Rautamai VDC, is a mother of 3 daughters and 1 son. Never been into vegetable production before, she has been doing commercial vegetable production for 12-14 months now after ICIMOD/CEAPRED jointly implemented HIMALICA project in Murkucchi. Out of 10 kathha land, she does vegetable farming in 3 kathhas, which she uses for her family's consumption and also sell it in the local Murkucchi market.

"I used to feel shy carrying the basket of vegetables and going to the local market to sell it, but today, I am confident enough to go to the market, sell the home grown vegetables and bring money home," says Khadka. She adds, before, they ate potatoes, gundruk and spinach as their staple diet, as they had no money to buy vegetables. But today, they have different kinds of seasonal vegetables everyday and even after their consumption; Khadka earns about NPR.90,000 a year by selling the remaining vegetables in the market. Household expenses, children's school fees and the grains for buffalos, everything is managed by the money she earns.

Khadka says, of her total income, NPR. 60,000 is spent in her children's education alone; a little money is used for mobile and some savings for health expenses. Before, all these expenses were extremely difficult to meet, she had to borrow money from her landlords, but today, she proudly says she is able to manage all her expenses. Her husband doesn't have any job and she is the single earning person in her family. "Gone are those days, when I had to borrow money for even buying lunch for my children. In the interest rate of 36% a year, I still have to pay NPR. 1-1.5 lakh to my landlord, which I am hoping to pay by this year. If it hadn't been for this project, I would have the same old lifestyle where I would be dependent on every little expense with the landlord and pay back the debt by selling a small piece of land I own".

"My health has improved after eating fresh vegetables every day. I don't feel dizzy and weak anymore. Even my children have gained weight and become much healthier than before. Nowadays, they ask me not to cook Cabbage as they are tired of eating it already. Before I had to buy cabbage, that too, when I had a little money from here and there", says Khadka with a big smile.

Even if this project comes to an end, she believes, if everyone works together, they can give continuity to the project as everyone has the knowledge, skills and resources to make it happen. With a beaming confidence, she says, we will definitely continue growing fresh vegetables in our fields, and, even if we face any difficulties, we will contact our Technician Sirs as everyone today is just a phone call away.



Urmila Khadga in her vegetable farming field

SUCCESS STORIES

KEY ACCOMPLISHMENTS:

- Coordination with district line agencies especially DADO, DCC, Municipalities and Rural Municipalities and Dabar Nepal was carried out in the project districts. The program objectives and activities were briefed to them and as per their suggestions and feedback, the potential sites for program intervention was identified in all the three districts.
- Establishment of field office at Dhulikhel, Kavre has been established, from where, Field Coordinator will take care of the overall execution and monitoring of field activities in Sindhuli, Kavrepalanchok and Sindhupalchok districts.
- Baseline survey was conducted in June and July, 2017 and the reports are in the process of finalization. The household questionnaires were administered to 250 respondent farmers with purposive sampling method in Sindhupalchok, Kavrepalanchok and Sindhuli districts. Similarly, 12 Focus Group Discussions (FGDs), three in each district were carried out. The key findings of FGDs show that local varieties of vegetables are replaced by improved and hybrid varieties because of low productivity of the local vegetables species.
- Selection of suitable sites at different altitudes of the three districts is on-going to establish nurseries for production of fresh vegetable, vegetable seeds and herbs.



Focus Group Discussion for Baseline Survey in Sindhuli District



Action/Policy Research

CEAPRED has also accorded high priority to Action/Policy Research in the areas of agriculture and environment. In addition to generating policy recommendations through various action research and studies, CEAPRED has mobilized them to plan, prioritize and implement the policies in their respective areas.

Ongoing Projects under this theme:

Himalayan Climate Change Adaptation Program –Resilient Mountain Village (HICAP-RMV)

Centre for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED) initiated the concept of Climate Smart Village (CSV) in partnership with International Centre for Integrated Mountain Development (ICIMOD) within the framework of Himalayan Climate Change Adaptation Program (HICAP) since 2014.

Since 2016, the concept was further modified towards Resilient Mountain Village (RMV) approach, combining adaptation measures to climate change, socio-economic aspects and strategy for future resilience. Based on the framework developed in participation with the farmers of the RMV pilot sites and the district level partners (DDC, DADO, DISCO, WDO, DFO), detail implementation plan was finalized jointly by CEAPRED and ICIMOD. Activities were designed integrating the farmers' knowhow and the scientific practices. CEAPRED staffs have been facilitating the implementation and the participant farmers implemented the activities in the field.

KEY ACHIEVEMENTS

- The project has been implemented in eight villages covering 1089 farmers, however, during its three years of implementation, number of other nearby villagers were also interested to participate, hence, an additional 138 farmers were also included in the program totaling the number of participants to be 1,227, of which, 1,017 (82%) are women participants. During this year, 39 training events on climate change related issues were organized, which was participated by 1,054 participants (85% women). Inter-cluster visits (28 events) were organized involving 754 participants (with 84% women) to share, learn and adopt the technologies.
- Efficient water management practices have been regularly carried out in the project activities, for which, project organized 30 training events covering 685 farmers (81% women).
- Project supported for the construction of 630 small plastic ponds at individual households, 129 medium sized plastic ponds and 11 ponds with soil-cement plaster. These ponds have been useful in establishing home gardens where varieties of vegetables are grown for daily consumption and sale. Larger ponds at community have been useful in producing vegetables at semi-commercial scale. These have been useful to bring un-irrigated areas under cultivation for vegetables. The average annual income from fresh vegetable sale per farmer is approximately NPR. 50,000-60,000 in one cropping season.
- Promotion of mulching practices during the spring/dry season has helped farmers to produce cucurbits with limited water availability during that season. Results from the 41 demonstration plots, which compared the benefits of mulching with non-mulching showed that mulching practice had produced 29% more yield than non-mulching. It was also noted that mulched plants had two months longer fruiting life than the non-mulched. It was experienced by the farmers that mulching reduced evapotranspiration and conserved the moisture significantly than the non-mulched, which resulted to the higher yield.



Kitchen Home Garden in Kavre

- Drip Irrigations were particularly useful for producing off-season tomato inside plastic tunnel, which are grown for almost 7 months. Income from tomato sale is about NPR. 40,000-60,000 in one season, therefore popular among small holder farmers.
- Jholmal preparation and use: Jholmal a local name of bio-pesticide and bio-fertilizer has now become popular among the community and is prepared at individual houses. Twenty seven training events were organized on preparation and use of Jholmal for new users, participated by 659 farmers (84% women). Jholmal has three different forms, prepared from various ingredients and is demonstrated among farmers for more than three years now. This product has been highly popular among farmers because it has been an alternative to chemical pesticides and even chemical fertilizer especially urea. Results of the demonstrations have shown that with the use of Jholmal, the increased yield of vegetable crops ranged between 7-35% in various crops. Besides increased yield,



Prepared Jholmals 1, 2 and 3

farmers have saved substantial costs of inputs (about 35-50%) as Jholmal has almost eliminated the use of chemical pesticides/fertilizer. Farmers have used it as bio-fertilizer as well as bio-pesticides thus reducing the purchase of chemical pesticides and urea in particular. Farmer's perception towards use of chemical pesticide use has been changed now as they prefer organic products than the chemicals. The area was previously known for high use of chemical pesticides and even red listed pesticides were used. This technology has been adapted by all households within the project areas and there is high demand in project vicinity. One of the farmers has started its commercial sale in Kuntabesi, market. She has reported more than 200 people have bought it since three months. Thirty two demonstration plots were established to show the effectiveness of Jholmal in pest control of vegetable crops (eg. cauliflower). The results showed much higher yield with Jholmal application when compared to control (no inputs use). The project has also analyzed the nutrient content in Jholmal-1, Jholmal-2 and Jholmal-3 in the laboratory (Table 1).

Table 1: Nutrient Content of Jholmal-1, Jholmal-2 and Jholmal-3

Jholmal Type	pH	Total N%	Phosphorous (P2O5) %	Potassium (K2O) %	Farmers Name (Sample)
Jholmal-1	8	0.33	0.1	0.4	kamala Timalisina
	7.7	0.33	0.08	0.3	Sanumaiyya Thapa
	7.2	0.33	0.08	0.3	Ganga Nepal
	7.8	0.33	0.09	0.3	Nirjala Sapkota
Average	7.67	0.33	0.08	0.32	
Jholmal-2	8.8	0.22	0.09	0.4	Ganga Nepal
	8	0.22	0.09	0.3	kamala Timalisina
	9.2	0.22	0.07	0.25	nanumaiyya Thapa
	5.2	0.22	0.1	0.35	Bishnu sapkota
Average	8.66	0.22	0.08	0.31	
Jholmal-3	7.8	0.22	0.11	0.35	nanumaiyya Thapa
	6	0.22	0.12	0.45	kamala Timalisina
	5.6	0.22	0.11	0.45	Ganga Nepal
	5.9	0.33	0.08	0.35	Nirjala Sapkota
Average	5.83	0.25	0.10	0.41	

Though, a popular local product used by the farmers, this product has not been evaluated in detail for its concentration, doses, frequency of application, recipe and for other parameters in a comprehensive scientific experiment at the research station and field level, requiring urgent attention for its scientific validation.

- Soil nutrient were improved through increased use of organic manure available at local level. Project demonstrated improved system of Farm yard Manure (FYM) preparation that can conserve nitrogen from being lost through leaching or evaporation. Results from laboratory analysis showed 26% higher level of nitrogen, and about two times higher level of Organic Matter with 75% higher C:N ratio (Table 2).

S.N.	Lab No.	Sample Identification	pH	Nitrogen (N%)	Phosphorous (P2O5)	Potassium (K2O)	Organic Matter (OM%)	Moisture %	C:N Ratio
1.	072/353	Improved manure	5.15	2.56	0.35	0.4	34.3	63.1	5
2	354	Jeevatu used FYM	6.2	2.66	0.55	1.25	46.08	61	7
3	355	Farmers Way	6.7	2.11	0.48	0.9	23.52	49.7	4

Table 2. Nutrient content in the farm yard manure prepared with improved and traditional methods

- Cowshed improvement being the basic requirement to collect urine for preparing Jholmal, it was promoted with 63 demonstrations of cowshed improvement. Use of green manure Dhaincha has been demonstrated in low lying areas of rice cultivation in collaboration with NARC to make it sustainable in the future. Rice-residue in potato has been demonstrated at various sites. The results of potato yield with residue use and without residue showed 18-20.5% increase in residue used plots.
- Mix Cropping, Crop Rotation and Legume Integration-Variou systems of mix cropping, intercropping and legume integration were introduced through training and demonstration to reduce risk and to foster diversity in farming system.
- Safer food production- A concept of IPM has been promoted with Safer Food Production by the use Jholmal, animal urine and other organic pesticide in vegetables particularly. Farmers were made aware of various labeled pesticides, their waiting period and safe use when they have to use chemical pesticides. The aim is to produce food safe with no pesticide residue and fit for human consumption.
- Off-season vegetable production- Polyhouse plastic tunnel is being demonstrated to produce off-season tomatoes. This is one of the promising technologies providing an average of NPR. 40,000-60,000 annually per household. The project demonstrated 96 poly house tunnels and 32 poly house tunnels were constructed by the farmers themselves.



Plastic pond for water collection, Kavre

- Farmers are provided with SMS information on market price, weather condition and technical knowhow in their mobile phones. Meteorology stations have been established in 5 schools at different sites of the project villages.
- The project also promoted bee-keeping in project sites using it as an indicator of reduction in pesticide use in the areas. Bee-hives have been distributed to 17 households for bee-keeping promotion.
- Project has encouraged farmers through workshops with insurance companies to insure their crops and livestock to minimize the risk

from disaster and losses. More than 138 farmers have insured their animals. Farmers have started crop insurance in Potato and Tomato in some of the project sites.

- The project has been visited by various representatives, academicians, development practitioners from various countries they have appreciated the RMV initiatives. Recent visit was from German Minister for Environment, Nature Conservation, Construction, and Atomic Safety, Dr Barbara Hendrix, to Kalchhebesi women's farmers group on 4th April 2017.

Awards:

The project has won "Adaptation at Scale Prize" award from DFID with value worth of GBP 10,000

Kavre farmers branding Jholmal

Jholmal – initially used for the vegetable and crop production, by the farmers of Kavre, has now become the source of income for them. It all started 2 years before, when CEAPRED's senior agriculture technician Ramdev Sah explained the benefit of Jholmal made out of homely accessible products like cowdung and cow urine says Ganga Nepal, President of Sayapatri farmers group. She says, at the time when farmers had used every type of chemical fertilizers to improve their vegetable and crop production, but could still see no improvements; they didn't quite believe in the benefits claimed by Jholmal. But after witnessing drastic improvements in their crops after its use, they not only used it in their farms but also sold them by branding it as Jholmal 1, 2 and 3 in the market.

Living their earnings by following the traditional practices of farming in the past, the women of Kavre were introduced to the techniques of Jholmal with the help and support from (CEAPRED) funded by ICIMOD. And at present, CEAPRED is trying to change 4 VDC and 1 Municipality of Kavre into Climate Friendly Village which is often referred as Resilient Mountain Village. To turn it into Climate Friendly village, the first thing to be considered is that everything needed for the change to happen should be locally present says Roshan Subedi from CEAPRED. With the increasing awareness of the harmful effects of chemical fertilizers, that not only degraded the quality of the soil but also affected human health, farmers slowly started opting Jholmal as their manual fertilizers which was safe for usage without any threat. Today, every household has a plastic drum where different types of Jholmal are being prepared for their crops and also for selling in the market.

40 farmers groups from the selected area of the project have been involved in preparing Jholmal today. Till date, 900 women and 189 men have already been provided with the Jholmal training. A total of 2,400 farmers have been informed about the benefits of Jholmal in the course of 14 trainings given till now. Due to this, farmers have also managed their cowshed properly and have made a separate urine collection pit in order to prepare Jholmal. Jholmal has been very effective in controlling 'Laahi Kira' and moreover, study has shown that Jholmal has been successful in stopping the use of an extremely harmful (Red) chemical fertilizer. On one hand it increases the production of the vegetables and crops and in the other hand the farmers don't have to spend money to buy it as they can prepare it from their household materials. Along with maintaining the PH level of the soil, the lab test of Jholmal has shown positive results due to which farmers have incorporated it into one of their major components in farming today says Roshan Subedi.

President of the Sayapatri farmers group, Ganga Nepal while explaining the participants of the training (organized by DADO) about the countless benefits of Jholmal said, she along with her group members have recently also started selling Jholmal branding it as Jholmal 1, 2 and 3. The response from the buyers has been very encouraging due to which they plan to sell it more in far-reaching places. Direction of use has been clearly mentioned in the bottle itself which has helped the first time users for its appropriate use. Sayapatri Group farmers have been selling Jholmal 2 at NPR. 50 per bottle and Jholmal 3 at NPR. 60 per bottle. They have expressed their happiness and gratitude regarding how CEAPRED's support has overturned their farming experience for good.

SUCCESS STORIES

The Asian Vegetable and Mango Integrated Pest Management (AVMIPM)-Innovation Lab Nepal

CEAPRED has been implementing The Asian Vegetable and Mango Integrated Pest Management–Innovation Lab (AVMIPM-IL) an USAID funded program under the IPM Innovation Lab (IPM IL) with International Development Enterprises (iDE).

The project has been implementing ecologically-based, participatory IPM, with a focus on pests (insect pests, pathogens, weeds) of tomato, eggplant, cabbage, cauliflower, beans, cucurbits, onion, and mango. The AVMIPM-IL (2015 to 2019) project has been building on the previous IPM-IL research and capacity building program, which developed and released IPM packages in Bangladesh and Nepal. The project will undertake adaptive research to tailor IPM practices and packages to local conditions, especially in the Feed-the-Future regions and districts. The IPM IL will develop, adapt, and diffuse IPM technologies through close interaction among international and host-country scientists in public and private institutions and with the Feed the Future activities.



Farmers visit to IPM learning center - DADO office, Surkhet

KEY ACCOMPLISHMENTS:

- IPM study on French bean for the management of disease and pest showed that 3 sprays of bio-pesticides managed better the diseases and pests of French beans with an increased yield of 1.4 t/ha in IPM practice than that of the farmers practice.
- Considering the economic impact of Tuta invasion in Nepal, Pest Exclusion Net (PEN) trial was done in Banke district and level of infestation inside PEN and in the open field was studied. PEN was effective to check the entry of insects/pest as well as yield increase was 4 kg (per 12 m² plot) more than open field while Tuta damage on fruit was 10 kg less than that of open field, resulting 14 kg more economic yield inside PEN per 12 x 2m plot showing the possibility of PEN technology for Tuta management. The project organized "Tuta absoluta: Identification and IPM recommendations for its Management" training at Nepalgunj on March 20, 2017 to enhance the technical capacity of the staff. The major topics covered in the training were origin, distribution, identification of pest, nature of damage and eco-friendly management of pest.
- Seven IPM learning centers were established and maintained. These centers are effective as learning centers for the visitors, where, more than 500 visitors visited this year to obtain information regarding IPM tools and practices.
- AVMIPM-IL participated in three programs of IPM technology display in fairs. In the fair organized by Regional Food Technology and Quality Control office on February 3-4, 2017, AVMIPM-IL had been awarded with third position. Similarly, nine IPM package has been demonstrated and 13 capacity building training in various crops have been carried out in the various location of scale up sites.



US professor field visit to the project sites

- Four exposure visits of farmers was organized to the learning centers with the objective of dissemination of knowledge of IPM tools and components and scale up of the IPM technologies to the farmers from the scale out site. The project also organized three programs of farmer's field day to share the outcomes of the conducted research activities.
- The IPM vegetable collection center has been established in Chhinchu-3, Sanoharre for the Kalika Tarkari Sankalan Kendra. The establishment of IPM vegetable collection center has helped the local producer for the marketing of their farm produce.

Asia Innovative Farmer's Action (AIFA)



Net study on vegetable production

Pest Exclusion Net (PEN) component under Asia Innovative Farmers Activity (AIFA) is a one year initiative in Nepal funded by USAID and implemented by Center for Environmental and Agricultural Policy Research and Extension and Development (CEAPRED) in partnership with Winrock International (WI). AIFA carries out activities to increase productivity primarily in horticulture crops.

This project includes five vegetable crops namely, tomatoes, brinjal, cucumber, cauliflower and leafy vegetables, which are highly demanded in market and have highvalue.

The project has identified pest exclusion nets on horticultural crops as the first technology for AIFA to support in Nepal. In Nepal, the use of pest exclusion nets is very limited and only few farmers have started using the nets for commercial production of vegetables, mainly capsicum. As there is a knowledge gap on the technical and financial viability of these nets, AIFA seeks to close this gap through field trials to compare vegetable production with and without pest exclusion nets. The objective of the trial and eventual study is to examine the performance of pest exclusion nets and to recommend appropriate options for net based vegetable farming.

KEY ACCOMPLISHMENTS:

- Three big sized net structures were established at each of the sites for tall crops like Tomato during winter and cucumber during summer season while three small sized net structures were established at each of the sites for low growing crops like cauliflower during winter and brinjal during summer season. 40 mesh sized nylon net was used to develop the structures. In the Surkhet district, a total of 67 farmers (32 for winter crops and 35 for summer crops) from two farmer groups (Laligurash Krishak Samuha and Bhagwati Krishak Samuha, Harre, Surkhet) participated in the training on PEN technology. Similarly, in Dang district, a total of 66 farmers (31 for winter crops and 35 for summer crops) from three farmer groups (Kamalnayan Krishak Samuha, Indreni Krishak

Samuha and Dipjyoti Krishak Samuha), participated in the training. Farmers were trained on cultivation practices of the crops (i.e. Cauliflower and Tomato) to be grown inside the PEN and in the control plots. Similarly, 31 farmers from Surkhet and 29 farmers from Dang participated in the training on insect identification and disease management of the standing crops.

- Joint monitoring visit of the PEN research site was carried out by the representatives from DADO, NARC, Winrock International, Agro vets, Vegetable collector and suppliers, project representatives and AIFA/CEAPRED at both the sites. The DADO and NARC official were impressed with the performance of the PEN in the research site.



Vegetables inside the net

Projects implemented during 2016-2017

SN	Projects	Duration	Donor	Funding Amount	Districts	Beneficiaries and Status
Thematic Area: POVERTY REDUCTION AND LIVELIHOOD ENHANCEMENT						
1	Nepal Agricultural Markets Development Program (NAMDP) -	March 2016- Dec 2019	SDC	CHF 374,030	8 districts	
2	Building Community Enterprises for Smallholders (BCES)	Oct 2015 – Sept 2018	Deutsche Welthungerhilfe (WHH)	Euro 240,594	1 district	2737 HHs
3	Knowledge base Integrated Sustainable Agriculture and Nutrition (KISAN) Project	March 2013 to June 2017	USAID/WI	USD 5.9 million	20 districts	84,000 HHs Completed by June, 2017
4	SAMARTH- Nepal Market for Development Project (NMDP)	Mar 2013 to Dec 2016	DFID/ASI	GBP 844,713	9 districts	28,408 HHs, Completed by December, 2017
5	Hamro Coffee	Mar 2017- Mar 2019	EU	EU 200,138	6 districts	4,000 HHs
6	Nepal Seed And Fertilizer Project (NSASP)	Mar 2016 – Mar 2021	USAID	USD 295,752	5 districts	
Thematic Area: SUSTAINABLE ECOSYSTEM AND ENVIRONMENTAL MANAGEMENT						
7	HIMALICA	July 2015 – Nov 2017	EU via ICIMOD	USD 400,000	1 district	509 HHs
8	Development of Climate Change Resilient Agriculture in Nepal (DCRA)	Apr 2017 - Mar 2019	ASIA Onlus	EU 296,045	3 districts	4,500 HHs
Thematic Area: ACTION/POLICY RESEARCH						
9	Himalayan Climate Change Adaptation Program (HICAP)	May 2014 to Dec 2017	EC/ICIMOD	USD 288,145	1 district	1094 HHs
10	AIFA	Oct 2016 – Sep 2017	USAID	USD 28,431	2 districts	
11	Asian Vegetable and Mango Integrated Pest Management (AVM-IPM-IL)- Innovative Lab Nepal	Feb 2016- March 2019	USAID	USD 48000	2 districts	

Other Activities

CEAPRED greets Governors from the Kingdom of Bhutan and faculty members of Rural Development Training Centre

CEAPRED's Executive Director Mr. Jaya M Khanal along with Program Director, Mr. Keshab Datta Joshi, on 30th April, Sunday, welcomed Governors of Bhutan and faculty members of Rural Development Training Centre (RDTC). They had come to Nepal to attend a training organized by ICIMOD and visited CEAPRED to discuss on climate smart technologies adopted by a pilot project - Himalayan Climate Change Adaptation Program (HICAP) being implemented in Kavre district by CEAPRED with the support of ICIMOD.

The interaction program started with an enriching presentation by Mr. Keshab Datta Joshi. In his presentation he explained how the Climate Resilient Mountain Village (CRMV) program has encouraged and motivated farmers to cultivate seasonal vegetables using climate smart technologies which have doubled their income as compared to the past. He also explained the benefits of Jholmal and how it has been fully adopted in the project sites.

Governor Mr. Dawala, complimented CEAPRED's efforts for such an outstanding outcome and termed it as a holistic approach. He added how such simple and easy to use techniques have changed a village that was once known for the use of abusive chemical fertilizers and pesticides. Another visiting Governor Mr. Harkas Tamang shed light on the climate smart techniques used in Bhutan and added that there was a striking similarity between the approaches used in Nepal and Bhutan. He was impressed by the use of liquid bio-fertilizers (Jholmal) instead of harmful chemical fertilizers and was interested in learning its preparation process and the plant species used for bringing it into play in Bhutan. In concluding remarks, ED Mr. Khanal thanked the guests for their interest on RMV and visiting CEAPRED headquarters.



Advanced Excel Training provided to center staffs of CEAPRED

5 days Microsoft Excel training was conducted to the center staffs of CEAPRED from 21st – 26th May. The training was an enriching experience where staffs from the head office learnt a variety of functions regarding Excel which would now make the collective work of the program, monitoring and finance department more convenient and accurate in the coming days.



Farewell to the KISAN Team

On 29th June 2017, a farewell program was organized for the centre staff of KISAN project to honor their hard work and contribution in the project. The Executive Chairman of CEAPRED, Dr. H.K. Upadhyaya, appreciated the hard work put by the staff for the successful implementation of KISAN project, which was very much appreciated by all. The program was followed by brief discussions on the achievements and accolades received by the project and also the key learning which would act as the asset for the upcoming projects of CEAPRED. The staffs were provided with a certificate of appreciation from the Executive chairperson.





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Independent Auditor's Report

To,
The Members
Center for Environmental and Agricultural Policy Research, Extension and Development
(CEAPRED)
Lalitpur, Nepal

We have audited the accompanying financial statements of Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED) which comprise the balance sheet as at 31st Ashad 2074, and the income and expenditure statement, cash flow statement and statement of changes in fund for the year then ended, and significant accounting policies and notes to accounts.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with generally accepted accounting principles and, for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Nepal Standard on Auditing (NSA). Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



Center for Environmental and Agricultural Policy
Research, Extension and Development (CEAPRED)

Balance Sheet
As at 31 Ashad 2074 (15 July 2017)

(Amount In NRs.)

Capital and Liabilities	Sch.	As at Ashad 31, 2074	As at Ashad 31, 2073
Un-Restricted Fund			
General Fund	1	81,330,444	70,201,445
Restricted Fund			
Capital Fund		6,892,337	7,257,911
Staff Welfare Fund	2	1,739,091	1,625,890
Dr. H.K. Upadhyaya Trust Fund	3	3,068,519	2,765,025
Staff Severance	4	12,052,490	13,867,821
SEED Revolving Fund	5	1,046,427	1,041,311
Climate prize Fund for upscaling of RMV		1,334,954	
Total Liabilities		107,464,262	96,759,403
Asstets			
Fixed Assets	6	24,441,264	24,571,373
Investments	7	39,370,377	14,648,600
Current Assets			
Cash and Bank Balances	8	66,428,759	34,113,178
Advances & Receivables	9	18,280,002	45,202,411
Grant Receivable	10	1,639,741	22,946,780
Total Current Assets (A)		86,348,502	102,262,370
Less: Current Liabilities			
Payables	11	17,388,494	32,112,985
Deferred Income	12	25,307,387	12,609,954
Total Current Liabilities (B)		42,695,881	44,722,940
Net Current Assets (A-B)		43,652,621	57,539,430
Total Assets		107,464,262	96,759,403

Accounting Policies and Notes to Accounts 18

Schedules 1 to 18 form an integral part of the Financial Statements.

As per our report of even date


Naresh Joshi
Finance Manager


Basu Upadhyaya
Senior Manager (Admin & Finance)


Jaya M Khanal
Executive Director


Dr. Pius Raj Mishra
Treasurer

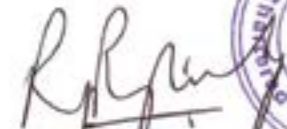

Dr. Hari K. Upadhyaya
Chairman


CA. Rabindra Rajbhandari
Partner
RajMS & Co.,
Chartered Accountants

Date: 2017-09-01
Place: Lalitpur, Nepal

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of CEAPRED as at 31st Ashad 2074 and of its financial performance and its cash flows for the year then ended in accordance with Generally Accepted Accounting Principles.


CA. Rabindra Rajbhandari
Partner
RajMS and Co., Chartered Accountants

Date: 2017-09-01
Place: Lalitpur, Nepal

Center for Environmental and Agricultural Policy
Research, Extension and Development (CEAPRED)

Income and Expenditure Statement
For the Period 1 Shrawan 2073 to 31 Ashad 2074 (16 July 2016 to 15 July 2017)

(Amount In NRs.)

Income	Sch.	Current Year	Previous Year
Net Grant Income	13	262,370,595	276,604,465
Management Cost/Overhead	14	21,771,850	19,155,862
Capital Grant	6	856,184	928,299
Other Income	15	2,526,773	2,083,885
Total Income (A)		287,525,403	298,772,511
Expenditure			
Program Expenditure	16	262,370,595	276,604,465
Operating Expenses	17	11,878,826	10,260,415
Depreciation	6	2,146,982	1,988,907
Total Expenditure (B)		276,396,404	288,853,787
Surplus (A-B)		11,128,999	9,918,724
Appropriation of Surplus:			
Surplus during the year		11,128,999	9,918,724
Transferred to Staff Welfare Fund		-	-
Surplus Transferred to General Fund		11,128,999	9,918,724

Accounting Policies and Notes to Accounts

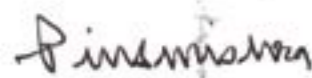
18

Schedules 1 to 18 form an integral part of the Financial Statements.


Naresh Joshi
Finance Manager


Basu Upadhyaya
Senior Manager(Admin & Finance)


Jaya M. Khanal
Executive Director


Dr. Pius Raj Mishra
Treasurer


Dr. Hari K. Upadhyaya
Chairman


CA. Rabindra Rajbhandari
Partner
RajMS & Co.,
Chartered Accountants

Date: 2017-09-01
Place: Lalitpur, Nepal





***Center for Environmental and Agricultural Policy Research,
Extension and Development (CEAPRED)***

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