

# The GEF Small Grants Programme Nepal

# PROJECT PROFILES

PART II



Empowered lives.  
Resilient nations.



**SGP** The GEF  
Small Grants  
Programme





## Project Profiles (Part II)

**Second Part** 2012

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### Cover Page

1. Chepang discussing about the topography of their landscape, Dhading;
2. Revival of traditional musical instrument in Magar communities in Gajedi;
3. Porter resting near Porter rest house in Khumbu alpine region;
4. Vultures feeding at Vulture restaurant;
5. A woman participant in Sugandha Kokila Nursery management training;
6. Locals from Bara learning to make improved cook stove;
7. Burning gas produced from IMBP digester in Hotel Mirabel, Dhulikhel



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### *Disclaimer:*

The opinions expressed herein are those of the writer/compiler and may not necessarily reflect the official view of the United Nations Development Programme in Nepal.



The GEF Small Grants Programme (SGP) of the United Nations Development Programme in Nepal provides grants up to US\$50,000 to community based organizations (CBOs) and non-governmental organizations (NGOs) for implementing projects that generate benefits to environment while ensuring livelihood benefits of the community that depends upon environment.

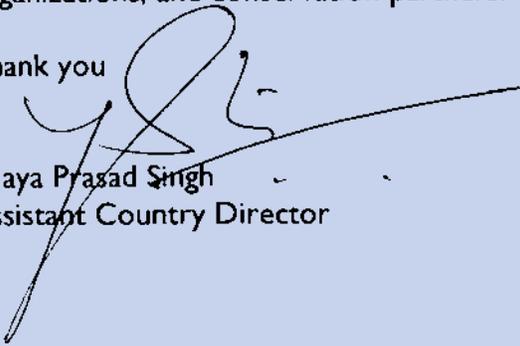
The Global Environment Facility's SGP aims to deliver global environmental benefits in the GEF Focal Areas of biodiversity conservation, climate change mitigation, protection of international waters, prevention of land degradation (primarily desertification and deforestation) and sustainable forest management, and elimination of chemicals and persistent organic pollutants through community-based approaches.

Since its inception in 1998, SGP in Nepal has supported 197 innovative projects that conserve and restore the environment while enhancing people's well-being and livelihoods. These projects are largely managed by the CBOs. For example, producing bio-briquettes from Banmara (transformation of forest killer weed- *Banmara* into bio-briquettes) to the recycling of waste, promoting rice husk stove to developing agro-forestry and conserving the vanishing vulture population to managing community seed banks are some of the successful initiatives supported by SGP. These small-scale endeavors, we hope, nurture local environment and reduce the likely detrimental effects of climate change through community driven adaptation practices.

Giving continuation to the publication of "SGP Project profile I" we are here to bring the SGP Project Profile II" into publication for the benefits of those who are interested in SGP. SGP project Profile II has successfully gathered the key results of some of the completed projects. We would like to thank Small Grants Programme and Pragati Nepal team for documenting the success of these projects which will help disseminate some of the tested innovative approaches and lessons learnt.

We hope that good practices and the impact lessons derived from SGP projects will be widely used, disseminated and cultivated in future endeavors by the government, civil society organizations, and conservation partners.

Thank you

  
Vijaya Prasad Singh  
Assistant Country Director

United Nations Development Programme  
**Global Environment Facility**  
**Small Grants Programme**  
साना अनुदान कार्यक्रम



Started in 1998, the GEF Small Grants Programme (SGP) of the United Nations Development Programme in Nepal works directly with community based organizations and non-governmental organizations to address global environmental issues while satisfying local needs.

So far, SGP Nepal has funded over 150 community based projects which have successfully integrated global environmental concerns and local level needs. Some of the key success factors of SGP projects are; a) innovative nature of projects, b) fast grant delivery mechanism, c) community ownership of the projects through decision making at the grassroots level, and d) maintaining transparency at all levels. SGP's role in enhancing grantees capacity for adopting participatory approaches of project implementation and monitoring, sharing knowledge and leveraging funds from partner organizations has ensured project sustainability.

This publication is an attempt to portray the profiles of selected SGP projects which were implemented from 1998 to 2012. It briefly describes achievements made and its relevance at the local level. We are also compiling the profiles of remaining SGP supported projects and would publish them in subsequent volumes.

We would like to thank Mr. Vivek Dhar Sharma and Pragati Nepal Team especially Dr Dhruba Gautam, Ms Pratistha Pyakurel, Mr. Pravin Rokaya and Mr. Babu Hari Pokhrel for their effort in compiling information regarding individual projects and printing in this form. Thanks go out to Ms Stephani Macfea for editing the text and Mr Vijaya Singh for his valuable suggestions. We would also like to acknowledge the efforts of SGP grantees, project team members, cofunding partners, local governments and concerned communities who have been working hard to make a difference in their livelihoods by conserving the local environment.

Gopal R. Shrechan  
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CBO	Community-based organization
CETF	Community environment trust fund
CFUG	Community forest user group
DDC	District development committee
GEF	Global Environment Facility
HELP™	Home Employment and Lighting Package
ICS	Improved cooking stove
IMBP	Institutional multipurpose biogas plant
KACC	Khumbu Alpine Conservation Council
NGO	Non-governmental organization
NSC	National Steering Committee
NTFP	Non-timber forest product
POP	Persistent Organic Pollutant
SGP	Small Grants Programme
TMJ	Tinjire-Milke-Jaljale
UNDP	United Nations Development Programme
UNFCC	United Nations Framework Convention on Climate Change
VDC	Village Development Committee
WEPCO	Women Environment Preservation Committee

## The GEF Small Grants Programme

The Global Environment Facility (GEF) Small Grants Programme (SGP) is implemented by the United Nations Development Programme (UNDP) and is executed by the United Nations Office for Project Services (UNOPS).

At present, 125 countries participate in SGP having ratified the conventions on biological diversity and climate change. The maximum grant amount per project is US\$ 50,000, but averages around US\$ 20,000. Grants are channeled directly to community based organizations (CBOs) and non-governmental organizations (NGOs). More than 10,000 grants have been awarded worldwide to date, with many benefiting multiple communities.

Since its inception, the SGP has occupied a strategic niche within the GEF system, particularly by supporting community-based initiatives responding to the criteria, objectives and priorities of the GEF to:

- Support outreach and awareness raising activities on selected environmental concerns;
- Build the capacities of NGOs, CBOs and local communities in addressing such environmental concerns; and
- Provide a mechanism for demonstrating and disseminating community-level or community-led interventions and solutions to such environmental concerns.

### GEF-SGP vision

*In a shiny day, a saint walking down the beach  
Eager to learn rather than teach*

*They saw picking up starfish a boy  
And very gently throwing the toy into the sea  
Confused thy asked  
Why you throwing the toy?*

*The Sun is high and the tide is low  
And if I do not throw  
They will simply die, says the boy*

*Even more confused, thy says  
The beach runs miles and miles  
And all along your toys lie  
What possible difference thou can make?*

*The boy picks his yet another toy  
Gently throws past the bay  
To its home where it belongs and says  
"It made the difference for that one"*

## What does SGP do?

SGP embodies the very essence of sustainable development. SGP channels financial and technical support directly to NGOs and CBOs for activities that conserve and restore the environment while enhancing people's well-being and livelihoods.

SGP supports activities of NGOs and CBOs in developing countries towards climate change abatement, conservation of biodiversity, protection of international waters, reduction of the impact of hazardous chemicals and persistent organic pollutants, promoting sustainable forest management and prevention of land degradation while generating sustainable livelihoods.

SGP has confronted very real challenges in working with communities to reconcile global environmental priorities with local community needs - challenges that have been met in different ways across the globe depending on particular economic, cultural, political and environmental conditions. In the process, SGP became "the people's GEF".

## Principles

- Participation, governance, flexibility, and transparency are cornerstones of the SGP approach. The programme encourages and supports the participation of communities, local people, NGOs, CBOs, and other stakeholders in all aspects of programme planning, design and implementation;
- The formulation of country programme strategies and national steering committee;
- The development, presentation, and execution of project concept papers and proposals;
- Building partnerships to broaden the scope of the programme and to communicate and replicate successful SGP initiatives;
- Raising public awareness of global environmental issues and changing public attitudes and practices;
- Influencing government environmental policies and programmes; and
- Mobilizing in-kind and monetary resources to support project and programme sustainability.

## Focal areas

The Global Environment Facility's SGP aims to deliver global environmental benefits in the GEF Focal Areas of biodiversity conservation, climate change mitigation, protection of international waters, prevention of land degradation (primarily desertification and deforestation) and sustainable forest management, and elimination of chemicals and persistent organic pollutants through community-based approaches.

SGP aims at protecting the global environment by funding projects that match these focal areas and address community conservation and sustainable use of natural resource base. Project component may include one or more theme as: demonstration, capacity building, indigenous knowledge and systems, targeted research, policy dialogue, information dissemination, and raising awareness among critical constituencies.

### **Operational programmes (OP)**

There are several operational programmes under each focal area, which are given hereunder.

#### **Biodiversity**

In line with overall objectives of convention of biodiversity, projects are funded that support or promote the conservation and sustainable use and management of biodiversity and ecosystem (including agrobiodiversity and agroecological system). It has 5 operational programmes.

- OP1 - Arid and Semi-Arid Ecosystem
- OP2 - Coastal, Marine and Freshwater Ecosystems
- OP3 - Forest Ecosystems
- OP4 - Mountain Ecosystems
- OP13 - Conservation and Sustainable Use of Biological Diversity Important to Agriculture

#### **Climate change**

GEF projects in climate change help developing countries and economies in transition to contribute to the overall objective of the United Nations Framework Convention on Climate Change (UNFCCC). Climate change could have devastating effects on the well-being of people already living on the edge of poverty - with limited financial and technical capacity, yet dependent on climate sensitive sectors for their life and livelihoods, communities must rely on their own ability to adapt and survive in constantly changing conditions. It consists of three OPs.

- OP5 - Removal of Barriers to Energy Efficiency and Energy Conservation
- OP6 - Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs
- OP11 - Promoting Environmentally Sustainable Transport

#### **International waters**

As one of the initial focal areas of GEF, international waters projects help countries to deal with concerns in all types of trans-boundary water systems, ranging from river basins, lake basins, and groundwater systems, to coasts and large marine ecosystems, where most fisheries exist, to the open ocean. It has three OPs.

- OP8 - Water body-based Operational Program
- OP9 - Integrated Land and Water Multiple Focal Area Operational Program
- OP10 - Contaminant-Based Operational Program

#### **Land degradation**

Initiatives include: conservation and restoration of arid and semi-arid areas; efficient stoves and biogas to reduce forest loss; integrated watershed management; soil conservation; afforestation; prevention of forest fires; and organic farming among others. A number of projects address policy and other barriers to mitigating land degradation (e.g. land tenure, access to natural resources). This focal area is addressed through single OP.

- OP15 - Operational Program on Sustainable Land Management

#### **Persistent Organic Pollutants- POPs (Chemicals)**

POPs are highly stable compounds that circulate globally through a repeated process of evaporation and deposit, and are transported through the atmosphere and the oceans to regions far away from their original source. They accumulate and multiply in the tissue of living organisms, which absorb POPs through food, water, and air. The effects of POPs exposure include birth defects, cancers, and dysfunctional immune and reproductive systems. POPs are also a threat to biodiversity, and even have the potential to cause disruption at the ecosystem level. This focal area is also addressed through single OP.

OP14 - Draft Elements of an Operational Program for Reducing and Eliminating Releases of Persistent Organic Pollutants

#### **Working approach**

SGP is rooted in the belief that global environmental problems can best be addressed if local people are involved and there are direct community benefits and ownership. SGP is convinced that with small amounts of funding, members of local communities can undertake activities that will make a significant difference in their lives and environments, with global benefits, in contrast with top-down, expert-reliant development interventions.

Each participating country has its own country program strategy that reconciles global and national priorities. This country driven approach is steered by a voluntary National Steering Committee (NSC).

#### **Country programme strategies**

Each participating country develops a country programme strategy, which adapts the SGP global strategic framework to specific country conditions. SGP country strategies take into account existing national biodiversity and climate change strategies and plans, as well as those relating to national development and poverty eradication. They may put emphasis on certain thematic areas and, particularly in large countries, are encouraged to adopt geographic concentration to ensure synergy and impact as well as to facilitate programme administration.

### **National Steering Committee**

SGP forms a voluntary NSC, which is the central element of SGP and provides the major substantive contribution to and oversight of the programme. The NSC typically comprises representatives from local NGOs, government, UNDP and occasionally cofunding donors, indigenous peoples' organizations, academia and the private sector.

The NSC develops a country programme strategy, considers whether proposals for grants are feasible and meet SGP criteria, and what kind of technical support is needed for implementation. The NSC is responsible for final approval of grants, helps undertake site visits and review, advises on design of grant proposals, ensures monitoring and evaluation, and champions SGP in national fora.

A locally recruited National Coordinator carries out day-to-day management of the programme and also serves as the ex-officio to the NSC. The National Coordinator, working with the NSC, shall reach out to the NGO community and CBOs to inform them about the availability of grants, and receive and screen proposals.

### **Monitoring and evaluation**

SGP views monitoring and evaluation as a participatory and forward-looking process that enables capacity building and learning, maintains accountability, promotes sustainability, and provides opportunities to identify and communicate lessons learned from project and programme experiences.

GEF-SGP of the United National Development Programme aims at conserving global environment through community approaches. The programme has entered its 5th operational phase, Nepal falls under Category 1 among 125 counties participating in the programme implementation.

The Country Programme Strategy (CPS) is the primary document guiding the development, implementation, monitoring, and evaluation of all SGP-Nepal activities during the Fifth Operational Period (OP5), July 2011 to June 2014.

### Country Programme Strategy

The CPS specifically identifies the strategic goals, impacts, and outcomes that GEF-SGP Nepal proposes to achieve over this three-year time span. The CPS sets basic project eligibility criteria as well. During OP5, GEF-SGP-Nepal will concentrate a majority of its financial and technical assistance within defined geographic and thematic focal areas. These areas and the methodology used to select them are described below. GEF-SGP Nepal uses this information as the baseline context from which it approaches the implementation of the global GEF-SGP mandate. The CPS finally delineates indicators that will be used to determine the programme's relative success and lessons learned.

### Thematic and geographic focus

During OP5, GEF-SGP Nepal will continue develop an integrated country portfolio that contains projects linked both thematically and geographically. These new components were selected in compliance with recent mandates from the GEF SGP Central Programme Management Team (CPMT), designed to strengthen individual GEF-SGP Offices by concentrating their efforts within country-specific geographic and thematic project clusters. The addition of these priorities will enable country programmes to better demonstrate project impact, leverage policy reform, and create synergies between GEF-SGP initiatives.

Specific considerations for GEF-SGP Nepal thematic and geographic selection included the current status of the Nepal program, contribution toward policy reform, partnership opportunities between GEF-SGP projects and larger interventions, as well as the overall GEF-SGP mission to affect global environmental benefits while pursuing poverty alleviation in Nepal. Selection methodology was broadly consultative and included a comprehensive literature review and discussions with Government of Nepal officials, UNDP staff, representatives from international environmental NGOs, the GEF-SGP project team, NSC members, and grantees. Suggestions obtained during stakeholder consultations were moreover consolidated into a ranking matrix (adapted from Participatory Rural Appraisal methodology), which allowed outside experts and the GEF-SGP project team to view and

appraise all ideas in comparison with the requirements of the selection process.

The following thematic and geographic areas will be targeted during GEF-SGP OP5. Grant allocation to projects focusing within these areas will constitute 75% of GEF-SGP funding, while 25% will be reserved for other focal areas such as POPs, grantees' capacity development projects, strategic partnership building, important demonstration projects, and particularly innovative initiatives. The STAR Allocation fund will primarily be used for the said focal area (Prevention of Land Degradation). However, 20 percent of the STAR fund will be used for other focal areas as appropriate. The thematic and geographic points below will remain the primary focus of GEF-SGP Nepal throughout OP5.

- Sustainable harvest and production of non-timber forest products (NTFP) and organic farming in Midwestern districts of Salyan, Rolpa, and Dang; Western hill districts of Parbat, Baglung, Myagdi and Mustang; and Central hill districts of Kavre, Sindhupalchowk and Dolakha.
- Wetland conservation in Jagadishpur Reservoir (Kapilbastu district), Lumbini wetland (Rupendehi district), Narayani waterbody (Nawalparasi district), Beesh Hazari Tal (Chitwan district), Fewa, Begnas, and Rupa Tal (Kaski district).
- Renewable energy in all project clusters listed above and the forest-deficient Terai districts of Rautahat, Sarlahi, Mahottari, Dhanusha, Siraha and Saptari.
- Shifting Cultivation (or rotational agro forestry) in Makwanpur, Dhading, Chitwan, Gorkha, and Tanahu districts.

These areas were selected for their particular relevance to the considerations listed above. Their importance for key GEF-SGP goals in biodiversity conservation, climate change mitigation, and sustainable land use as well as to marginalized communities, and policy reform is briefly discussed below.

Non-timber forest products – Non-timber forest products (NTFP) constitute a major asset for Nepal's rural poor. Used not only for their medicinal and aromatic value, commercially-viable NTFPs also are a significant source of revenue in Nepal's countryside (Kunwar, R., 2006). These important commodities are increasingly under threat however. Inadequate governmental policies and unsustainable harvesting practices are jeopardizing their natural persistence and degrading forest cover. Sustainable NTFP harvest and production could also be strengthened to increase returns for local cultivators (MFSC, 2002). In recent years, organic farming has becoming increasingly popular among rural farmers. Access to markets in places like Kathmandu could drastically improve returns.

**Wetland conservation** – Nepal’s wetlands support a unique assemblage of globally-endangered flora and fauna. Wetland areas moreover hold value for their religious and cultural significance, as well as their role in providing sustenance to some of Nepal’s most marginalized communities (IUCN-Nepal, 2004). Wetland sites perform important ecological functions. Healthy ecosystems re-charge ground water and prevent soil erosion. While recent action has sought to address wetland conservation through large interventions and governmental policy, degradation and unsustainable use continue to jeopardize the biological and economic significance of these critical areas. Uncoordinated governmental oversight contributes wetland depredation.

**Shifting cultivation** – Shifting cultivation or rotational agro forestry is a recently identified priority for biodiversity conservation and sustainable land use in the internationally-important hotspots of Himalayan region. Practiced for centuries by indigenous and generally poor hill residents, shifting cultivation usually consists of vegetation and secondary forest clearance followed by intensive agricultural activity and a long fallow period interspersed with select harvesting of wild or cultivated forest products. While generally perceived as destructive and particularly detrimental to conservation, new evidence suggests shifting cultivation – if practiced in its original form– can yield powerful benefits for wild flora and fauna as well as conserve soils (Kerkhoff, E. & Sharma, E., 2006). A major constraint to successful rotational agro forestry is governmental policies which undervalue shifting cultivation, limit space, and acquire land during fallow periods.

**Renewable energy and alternative energy technologies** – Fossil fuel combustion and deforestation continue to be Nepal’s main sources of carbon emissions. While low-cost and effective renewable energy mechanisms and alternative energy technologies exist, instillations fees and lack of awareness limit their use among underprivileged communities. Financial assistance as well supportive institutions and policies can reduce barriers to the adoption of renewable energy.

**Geographical coverage**

The SGP Nepal projects are spread across five development regions, covering 51 districts, 166 Village Development Committees (VDCs), and nine Municipalities of Nepal and one strategic project in Sri Lanka and India. The project coverage is given in table 1:

**Table 1: Geographical Coverage**

Development Regions	Number of projects	Districts	VDCs	Municipality
Eastern	15	9	21	1
Central	58	15	69	-
Western	36	13	40	7
Mid-western	17	9	23	-
Far-western	12	5	13	1
Capacity building & strategic project	12	N/A		
<b>Total 150</b>	<b>150</b>	<b>51</b>	<b>166</b>	<b>9</b>

**Status of grants**

Since, 1998 to 2013, there were all together 150 projects awarded (62 biodiversity, 42 climate change, 22 land degradation, 11 international waters, 2 POPs and 11 capacity building), of which 134 projects were full grants; 15 planning grants and 1 strategic regional project implemented in Sri Lanka and India.

SGP has already disbursed a total of US\$ 5,043,772 in four phases, out of which the amounts allocated to biodiversity conservation, climate change, land degradation International waters chemicals and capacity building are US\$ 2,224,086; US\$ 1,473,844; US\$ 619,201; US\$ 275,856; US\$84,880 and US\$ 365,905 respectively.

**Co-funding**

The SGP has always advocated its grantees to generate cofunding from GOs, NGOs, private sectors and other donors to ensure the sustainability of development initiatives. So far, a total cofunding of US\$ 6,441,093 has been generated. Of which, US\$ 4,793,099 is in cash and US\$ 1,647,994 in kind equivalent.



GEF-SGP Thematic/ Geographic Cluster Map

SGP supports projects that promote the conservation and sustainable use of bio-diversity and ecosystems, including projects concerned with agro-biodiversity and agro-ecological systems. Nepal's ratification of the United Nations Convention on Biodiversity has made it eligible for grants in this focal area. SGP gives priority to projects located in areas that contain globally significant biodiversity, including ecosystems or constituent species which are threatened or at risk. Habitats that are important to migratory species or have a significant presence of endemic species constitute other key project sites.

The projects selected are also aligned with international conventions, treaties, laws and agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention), and the Convention Concerning the Protection of the World Cultural and Natural Heritage.

SGP-supported biodiversity projects in Nepal include the conservation of important forest and wetland ecosystems such as the Patenagi, Tinjure Milke-Jaljale, and Gwallek forests, Baharaiya wetlands and Gajedi Lake as well as the conservation of species such as vultures, the Himalayan newt and commercially important non-timber forest products (NTFPs) and aromatic plants. It has also supported the formulation of policies regarding the maintenance of a community biodiversity register and the certification of community forest and national forest. The following 14 biodiversity conservation projects are briefly described in this chapter:

- 1** Community-Managed Vulture Restaurant and Visitor Centre in the Buffer Zone of Chitwan National Park, Nawalparasi District, Central Nepal
- 2** Local Initiative for Wetlands and Biodiversity Conservation
- 3** Community-Based Model Village Program for Environmental Conservation
- 4** Community-Based Patenagi Biodiversity Conservation Project
- 5** Sustainable Management of NTFPs to Improve the Livelihoods of Local Communities in the Tinjure-Milke-Jaljale area
- 6** Income Generation and Biodiversity Conservation through Sustainable NTFP/Herb Management in Doti District
- 7** Agro-Biodiversity Conservation through the Indigenous Chepang Community
- 8** High Mountain Biodiversity Conservation Project
- 9** Baharaiya Wetlands Conservation and Sustainable Development Project
- 10** Community-Based Natural Resource Management for Sustainable Development in the Middle Hills of Nepal
- 11** Strengthening the Capacity of Community Seed Banks for Enhancing Local Seed Security and Agro-Biodiversity Conservation in the Central Terai of Nepal
- 12** Gwallek Forest Conservation through Income Generation (Beekeeping) Project
- 13** Project for Developing National Forest Certification Standards in Nepal
- 14** Initiatives for Biodiversity Conservation and Utilization in Dang District

## Background

Four species of vultures—the white-rumped vulture (*Gyps bengalensis*), the long-billed vulture (*G. indicus*), the slender-billed vulture (*G. tenuirostris*) and the red-headed vulture (*Sarcogyps calvus*) are in grave danger of extinction across the Indian subcontinent. Populations in Nepal, India and Pakistan have declined by more than 97% and annual rates of decline appear to be increasing as breeding colonies are lost and local extinctions becoming increasingly prevalent. In 2000 all four species were listed as critically endangered—the highest category of threat—by the International Union for Conservation (IUCN) and the Egyptian vulture (*Neophron percnopterus*) was declared endangered. In 2004, Dr. Lindsay Oaks discovered that the extensive use of a veterinary drug called diclofenac was responsible for the deaths of such large numbers of vultures. Although the use of diclofenac for veterinary purposes is banned in both Nepal and India, the ban is often ignored. The decline in the number of vultures has led to an increase in the populations of rats, feral dogs and other inefficient scavengers, which in turn has increased the risk of plagues, rabies and other animal-borne diseases among the human population.

## Main objectives

- To make local communities aware about the need to conserve vultures
- To establish a vulture information center to provide safer food through a community-managed vulture restaurant

## Main activities

- Establishment of the community-managed Jatayu restaurant, a cattle rescue centre, a visitor centre, and a vulture viewing house
- Monitoring vultures and their nests around the restaurant, as well as the use of diclofenac near the restaurant and in neighboring districts
- Raising awareness about and promoted meloxicam as a safe alternative to diclofenac

## Major achievements

The project has successfully established World's first community-managed vulture restaurant (Jatayu restaurant) and provided an excellent approach to engage local community in vulture conservation. While decrease of vulture is reported worldwide and numbers of attempts were unable to stave off a decline in populations; but in vicinity of vulture restaurant, the number of vultures counted increased from 60 to 217 and the number of vulture nests from 17 to 40 (2010). Likewise, 20 female vultures produced offspring. Along with the restaurant, vulture information centre and vulture-viewing house were established.

The project enforced the ban on diclofenac, declared the area a diclofenac-free zone, and substituted vulture-friendly meloxicam. It also helped prepare the National Vulture Conservation Action Plan for Nepal (2009-2013). At the cattle rescue centre, dying cattle are treated well. They are treated with meloxicam and those that die a natural death and

Project No	NEP/OP3/2/07/08		
Focal Area	Biodiversity conservation		
Grantee	Bird Conservation Nepal		
Operational Programme	OP#3-Forest ecosystem		

Location		Pithauli, Kawasoti		10
Districts/VDC/Tot. Ward	Nawalparasi			
No. of CBOs/HHs M/F	1	714	1897	2142
Duration	05/07-12/08			
SGP Grant (US\$)	37,375			
Cofunding (US\$) Cash and Kind	17,360	N/A		
Total Grant (US\$)	54,735			

whose carcasses demonstrably have no traces of Diclofenac are fed to the vultures. Owing to various capacity building initiatives, people internalized the rationale of meloxicam and promoted it as a safe alternative to diclofenac.

Locals have started to understand the positive role vultures play in the ecosystem and no longer see them as a bad omen. In fact, since they have started to reap benefits from selling hides, bones, vermin compost, and tourism promotion, they look upon vultures quite positively. During the project period, from May 2007 to December 2008, 315 locals and 57 foreigners visited the centre.

Vulture restaurants have been replicated in five places: Gaidahwa Lake, Rupandehi District; Kalika Community Forest, Dang; Khutiya, Kailali District; Ghachowk, Kaski District; and Bijouri, Dang District. It has been replicated in Pakistan by the Dharte Development Organization with UNDP/GEF/SGP support.

## Co-funding partners

The Royal Society for the Protection of Birds, Bird Education Society, International Trust for Nature Conservation and Department of National Parks and Wildlife Conservation/Chitwan National Park and Critical Ecosystem Partnership Fund/WWF Nepal.



Community managed vulture restaurant and information centre at Pithauli, Nawalparasi

## Background

Gajedi Lake is situated in Gajedi village development committee (VDC), Rupandehi District about 4.5 km south of the East-West Highway. It covers 9.5 ha and is home to about 40 species of birds, 30 species of fishes and a few species of reptiles, including tortoises and Goharo (*Varanus bengalensis*). Drought had reduced the lake to a small pond, virtually killing it through eutrophication and filling it with vegetation. The lake's southern dam was weak. Farmers did not have enough irrigation water and were unable to build linkages with the modern market value to sell goods and services by exploiting the wetlands and their biodiversity.

## Main objectives

- To support and mobilize local communities in the rehabilitation of Gajedi Lake and its diversity
- To initiate wetland based income generation activities

## Main activities

- Constructing a dam embankment, maintaining and repairing outlet culverts,
- Supporting fruit plantation, vegetable farming, fingerlings, installing shallow tube wells and drinking water supply systems
- Conducting trainings in wetland management, fish farming, and managing of boats

## Major achievements

Threats posed by the weak dam was eliminated by constructing a dam 175 m long, 0.45-1.2m wide, and 3 m high as a part of rehabilitation of Gajedi Lake. As a result of dam construction, a 5-ha "support lake" was created that added value to the existing lakes. Two fragile outlet culverts were repaired to retain the required water level in the lake and to systemize the irrigation facility.

Four picnic sheds, three cement and two wooden benches, a drinking water supply system with a 2000-liter plastic water tank with two

<b>Project No</b>	NEP/SGP/OP4/CORE/08/02		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Forum for Environmental Awareness and Legal Public Concern		
<b>Operational Programme</b>	OP#2-Costal, marine and fresh water ecosystems		
<b>Location</b>	Rupandehi	Gajedi	1
<b>Districts/ VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	12	320	920
<b>Duration</b>	06/08-09/09		
<b>SGP Grant (US\$)</b>	46,845		
<b>Cofunding (US\$) Cash and Kind</b>	17,292	N/A	
<b>Total Grant (US\$)</b>	64,137		

electric pumps, pipes and taps, and a boat park two boats were constructed in order to increase the recreational value of the wetlands. The once ignored lake now attracts many local tourists and has become a popular picnic spot. In order to institutionalize the recreational activities, a local women group has been taking the lead role. The group is able to generate, on an average, Rs 5,000-7,000 per month from visitors during picnic season. They have constructed a community house which is being used for organizing local level trainings and meetings. The project supported musical instrument to traditional Magar groups as part of fostering cultural amenities.

One of the significant achievements of the project is that it has provided irrigation facilities to farmers downstream. It is estimated that the crop productivity has increased by 260% owing to the improved irrigation facilities. The farmers in the downstream are able to fetch Rs 18,000 to 32,000 in one season from off-season vegetable farming. Two shallow tube wells were also installed to support irrigation and fish farming.

## Co-funding partners

Butwal Municipality, Samaymai Community Forest User Group, Rupandehi District Forest Office, Rupandehi District Development Committee, Fishery Development Centre, Bhairahawa



Gajedi wetland conservation woman group posing in front of their newly constructed community building, Rupandehi



Renaissance of Gajedi Lake after embankment, Rupandehi

## Background

The alpine (above 4000 m) ecosystem in the upper Imja valley of Sagarmatha National Park and Buffer Zone is very diverse. It is home to a large number of economically important plants, including rare and endangered species like the blue poppy and the snow lotus, which is used by Tibetans to treat high blood pressure. The alpine ecosystem in the Khumbu region, where Mount Everest lies, is economically important to local people, who use it to graze livestock, to collect water, and harvest medicinal plants. These ecosystems are vulnerable to exploitation, especially overgrazing, and global climate change. The degradation of alpine ecosystems throughout the Khumbu region is linked to the recent and significant growth of unregulated adventure tourism, especially mountaineering expeditions and support teams, which for years used slow-growing juniper shrubs as fuel. The mining of alpine turfs and stones for constructing lodges has increased over the past 30 years.

## Main objectives

- To protect and restore the fragile alpine ecosystems of the Sagarmatha National Park and Buffer Zone through locally driven conservation initiatives
- To improve the livelihoods of local people

## Main activities

- Strengthening the ban on the harvesting of shrub juniper, establishing kerosene depot and juniper & medicinal plant nursery
- Constructing porter rest houses and cattle-proof enclosures
- Constructing drinking water and producing sea-buckthorn juice

## Major achievements

The project has strengthened the capacity of local people to protect and restore the fragile alpine ecosystem and helped to develop a model that eventually can be applied to alpine zones throughout the world. The project strengthened the ban on harvesting juniper for cooking and burning as incense in Sagarmatha National Park. As an alternative to the juniper, the project has supported to establish a kerosene depot with the capacity of storing approximately 4000 liters. With this action, approximately 150,000 kg of firewood has been saved since the inception of the project. An alpine nursery established at Shomare (4000m) with

<b>Project No</b>	NEP/OP3/1/06/09		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Khumbu Alpine Conservation Council (KACC)		
<b>Operational Programme</b>	OP4 # Mountain ecosystems		
<b>Location</b>	Solukhumbu	Khumjung	7
<b>Districts/ VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	1	80	140
<b>Duration</b>	04/2006-03/2008		
<b>SGP Grant (US\$)</b>	50,000		
<b>Cofunding (US\$) Cash and Kind</b>	38,420		33,246
<b>Total Grant (US\$)</b>	121666		

the capacity to raise 10,000 juniper and medicinal plant has been exemplary in alpine nursery management and production of seedlings. The project has also supported the construction of cattle-proof enclosure to demonstrate slow growing process of alpine plants. In this enclosure, the grazing and harvesting have been totally banned.

By constructing a porter rest house at Lobuche, the project has reduced the health hazards of highland porters and saved approximately 30,000 kg of juniper shrubs annually. Seeing its success, the Buffer Zone Council has also constructed a shelter in Gorakshep.

The KACC has established a visitor information center and office in Dingboche to facilitate regular meetings and workshops and distribute information to visitors. More than 15,000 local residents, trekkers, porters, and lodge operators directly benefited from well-maintained trails, better sanitation and improved water supply (even at 4000 m).

To provide an additional income-generating opportunity, the project trained local yak herders and women to make juice from the sea-buckthorn that grows by rivers near Dingboche and Pheriche. They earned NRs. 75,000 within the first few months.

## Co-funding partners

Argosy Foundation, American Alpine Club, National Geographic Society, Mountain Institute, Sagarmatha National Park/Buffer Zone



Local women collecting sea-buckthorn for making juice



Locals collecting slow growing juniper shrubs for firewood in the Khumbu alpine region

**Background**

The Patenagi forest is spread over 11.99 square kilometer area and lies in the conjoint of Ilam and Panchthar districts. It covers three village development committees (VDCs) namely Puwamajuwa and Chamita VDCs of Ilam and Ranitar VDC of Panchthar. As the forest elevates up to 3045m from mean sea level, the varied climate provides home for different species of epiphytic orchids, Rhododendron, Common yew, American birch, marsh orchid, red panda and Himalayan newt. The forest serves as important trans-boundary biological corridor of Kanchanjanga landscape. But due to human encroachment, overgrazing, forest fire, diversity of flora and fauna in Patenagi forest are continuously depleting.

**Main objectives:**

- To conserve the biodiversity of Patenagi forest area through the involvement of the local community
- To provide sustainable livelihood options for the local communities

**Main activities**

- Safeguarding non-timber forest products and protecting water sources through plantation
- Installing improved cooking stove (ICSs)
- Establishing an herbal park and Himalayan newt as well as the Puwa Khola hydro system
- Organizing trainings in community forest management, sustainable agriculture and forest fire management

**Major achievements**

As a part of Patenagi biodiversity conservation, an herbal park was established and two community forest users groups were formed to protect more than 250 ha of forest at the periphery of the Patenagi

<b>Project No</b>	NEP/OP3/2/07/05		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Namsaling Community Development Centre (NCDC)		
<b>Operational Programme</b>	OP#3 Forest ecosystem		
<b>Location</b>	Ilam,	Puwamajhuwa,	5
<b>Districts/ VDC/Tot. Ward</b>	Panchthar	Chamaita, Ranitar	
<b>No. of CBOs/HHs M/F</b>	1	325	598 654
<b>Duration</b>	07/07-06/09		
<b>SGP Grant (US\$)</b>	47845		
<b>Cofunding (US\$) Cash and Kind</b>	5432		NA
<b>Total Grant (US\$)</b>	53277		

forest. In the herbal park, locals have planted 20,000 Lokta plant and demonstrated the conservation of 100 floral species and Himalayan Newt whereas in the community forest two 25,000 Rhododendron spp., Chimal, and prickly ash (*Zanthoxylum* sp.) have been planted by the community forest users groups. As a result of participatory conservation endeavors, forest fire incidents have declined by 80%. The project also supported to installed ICS in 47 households and 4KW Puwa Khola Pico hydro system benefitting 34 households.

The project helped promote different livelihood options to local people. 11 households cultivated seeds of jasmín in 3 ha benefitting NRs 28,600 per family per year. Likewise 200 families benefited from a livestock health camp and 100 households benefitted from six newly- protected spring water sources.

**Co-funding partner**

District Forest Office, District Agriculture Development Office, District Development Committee, Local NGOs and CBOs, Alternative Energy Promotion Centre, District Soil Conservation Office, District Plant Resource Office, FNCCI Ilam



Community engaged in NTFP cultivation in Puwamajuwa, Ilam



Organic vegetable farming by a Dalit group in Puwamajhuwa, Ilam

## Background

The Tinjure-Milke-Jaljale (TMJ) area is situated at the confluence of three districts—Terhathum, Sankuwasabha and Taplejung—in the eastern hilly region of Nepal. It lies between Arun and Tamor rivers and covers an area of 585.26 Km<sup>2</sup> of Tehrathum, Sankhuwasabha, and Taplejung districts. The area, which harbors 28 species of rhododendron, is rich in biodiversity and serves as a corridor for several local faunal migrations. A total of 17 endemic, nine endangered, and four threatened plant species are found here. It is also home to several rare and endangered fauna, including the Assamese monkey, Chinese pangolin, clouded leopard, flying squirrel, ghoral, Hanuman langur, leopard, leopard cat, wolf, and yellow-throated marten. Habitat loss due to encroachment, firewood collection and overgrazing are major threats to the area.

## Main objectives

- To support the sustainable management of NTFPs in the TMJ area as an incentive for overall landscape management and biodiversity conservation

## Main activities

- Establishing NTFPs nurseries and demonstration plots and planting in community forest
- Establishing Tinjure NTFP Production and Processing Company, two hand-made paper production cottage industries, and a bio-briquette production unit
- Distributing loans to needy farmers through Community Environment Trust Fund (CETF)
- Conducting trainings in hand-made paper production, bio-briquette-making, and goat and pig rearing.

## Major achievements

Prior to initiating the project activities a detail study on NTFPs in TMJ was carried out. Three NTFP demonstration plots and three NTFP nurseries were established in order to support sustainable management

<b>Project No</b>	NEP/04/07		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	National Rhododendron Management Committee		
<b>Operational Programme</b>	OP#3 & 4-Forest and Mountain ecosystem		
<b>Location</b>	Terhathum/ Sankuwasabha	Basantapur, Sugnam, Tamaphok	9
<b>Districts/ VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	12	512	509
<b>Duration</b>	4/2005 - 3/2007		
<b>SGP Grant (US\$)</b>	48,900		
<b>Cofunding (US\$) Cash and Kind</b>	27,000	N/A	
<b>Total Grant (US\$)</b>	75,900		

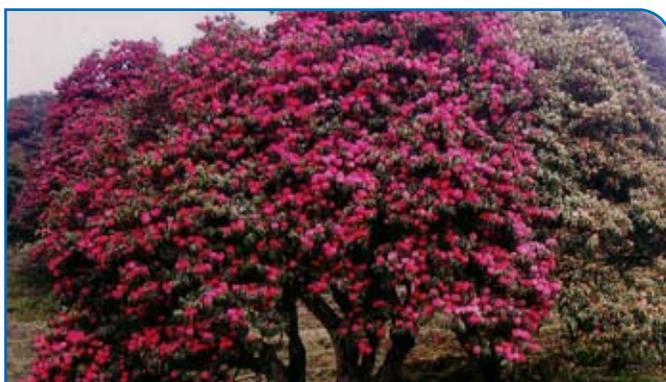
of NTFPs. Local community has planted more than 80,000 NTFP seedlings in community forests and on private land for income generation and environment conservation. To reduce the firewood dependency and improve the health of women and children 500 ICSs were also installed.

Two handmade paper production cottage industries and one bio-briquette production unit were established. Likewise, in order to ensure the market of the NTFPs a Tinjure NTFP Production and Processing Company was also established. The representation of poor farmers in the company was insured by providing 50 poor farmers with soft loans to obtain 20% of the shares of the company.

A total of 279 individuals of the project area have benefited from short-term income generating activities by mobilizing NRs 200,000 as CETF in revolving fund and their own saving amount. Out of 279 families involved in the income generation activities, 105 families have benefitted from NTFPs related activities, 95 from off-seasonal farming, 50 from goat and pig rearing, 17 from retail shops and 12 from briquette. At the end of project's tenure NRs1,884,700 was earned from these income generating schemes.

## Co-funding partners

The World Conservation Union-IUCN, Tinjure-Milke-Jaljale -Community Forestry Network, Basantapur, Sugnam and Tamaphok VDCs



Rhododendron flower blossom covers entire tree in Milke Jaljale area



Yaks carrying raw materials for handmade paper

## Background

Latamandu VDC ward-9, Tiltali of Doti District is highly favorable for growing Amala (*Phyllanthus emblica*) and Bel (*Aegle marmelos*) but these potentialities were never exploited until 2005. Because of poor knowledge and awareness about the wise use and sustainable harvesting of these non-timber forest products (NTFPs), these resources were continuously depleted and management and conservation of NTFPs, mainly locally available species like Amala, bamboo, Bel, Rittha was under threats. The low level of literacy (only 23 percent), marginalization and deprivation further fuelled the poor management of these important NTFPs. This project aimed at conserving and wisely utilizing these NTFPs for the livelihood improvement of poor.

## Main objectives

- To conserve biodiversity and improve the livelihoods of the poor through sustainable cultivation
- To harvest and process non-timber forest products (NTFPs)/herbs in community forests and on private land

## Main activities

- Conserving herbs through cultivation and mobilization of community forest user groups (CFUGs)
- Publishing an introductory brochure on Marmelos (Bel) juice production.
- Conducting capacity-building activities like community forestry management training, NTFP cultivation, harvesting and storage, production of pulp and juice from Bel

## Major achievements

About 55,000 NTFP such as bel, aamala, ritha, dalchini, sugandawal, Lemon grass, Citronella and fruit tree seedlings were cultivated in private as well as community forests. Four CFUGs have protected forest giving specific priority to NTFPs such as chutro (*Berberis aristata*), Chiuri (*Aesandra butyracea*) Bojho (*Acarus calamus*), titepati (*Artemesia vulgaris*), amala (*Phyllanthus emblica*) and bel (*Aegle marmelous*), and marginal land so that the natural habitats of NTFPs and wildlife will remain undisturbed.

<b>Project No</b>	NEP/OP3/1/06/02		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Rural Development Service Centre		
<b>Operational Programme</b>	OP#3-Forest ecosystems		
<b>Location</b>	Doti	Latamandu	4
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	4	51	164
<b>Duration</b>	05/06-08/08		
<b>SGP Grant (US\$)</b>	49,451		
<b>Cofunding (US\$) Cash and Kind</b>	126550	14285	
<b>Total Grant (US\$)</b>	190286		

The formation of Nawa Durga and four other juice production groups has institutionalized the commercial production and marketing of bel juice. More than 500 liters of juice has been produced and sold. The 15-family Nawa Durga group earns NRs. 3,500-4,000 per day while the other groups report annual earnings of NRs. 150,000-200,000 during the project tenure. The project supported in developing human resources through sustainable harvesting of NTFP (especially bel, chiuri and amala) and juice production. The project also supported in publishing 6,000 introductory brochures on Bel juice production training. Since they benefit economically, the motivation to conserve Bel and other trees is high. The project also supported to promote amala and chiuri. Chiurichada CF had collected Rs 170,000 as royalty from Indian goose-berry in their land and used the earning to run a local primary school. Locals who knew little about chiuri have started to produce chiuri ghee commercially. In the first four months, one farmer sold 700 kg and earned NRs. 58,050

## Co-funding partners

District Forest Office, District Agriculture Development Office, District Development Committee, District Cooperative Office, Latamandu village development committee



# AGRO-BIODIVERSITY CONSERVATION THROUGH THE INDIGENOUS CHEPANG COMMUNITY

## Background

Chepangs are a deprived and disadvantaged ethnic group of Nepal who, to a great extent, depend on wild edibles like wild yam, nettles, ferns, vyakur (*Dioscorea Sp.*), koirala (*Bauhinia malabarica*), tanki (*Bauhinia purpurea*), kukurdaino (*Smilax Microphylla*), bhalayo (*Semecarpus Anacrdium*), and siplikan (*Creteva unilocularis*). The indigenous Chepangs literally worship the chiuri tree which plays a significant role in their indigenous mode of life. The populations of these ethnographically important species are rapidly declining due to several factors, such as population pressure, the illicit felling of trees and stone mining the conversion of forest to agricultural land. Although the Chepangs practice slash-and-burn farming (khoriya) on sloping land, they do not produce enough to meet the food demand of more than three months. To ward off a possible food crisis, there is a need to conserve wild food sources.

## Main objectives

- Enhance the livelihoods of the Chepang community through agro-biodiversity conservation and land rehabilitation.

## Main activities

- Practicing the in situ conservation of selected species, forest handover
- Imparting conservation literacy class
- Constructing drinking water and small irrigation systems
- Documenting local knowledge for awareness on agro-biodiversity conservation

## Major achievements

A total of 26 ha land has been rehabilitated through the promotion of mixed cropping, hedgerows, and terrace improvement practices. Altogether 151.41 ha of forest area was handed over to 156 families of three community forest users groups. In order to facilitate the forest conservation, rehabilitation of degraded land and empower the Chepangs, the project conducted eight conservation literacy classes for six month benefitting 151 Chepang members. As a result, it was possible to collect 10 *Dioscorea* species in the project area, out of 14 found in Nepal. This has eased the project to undertake different initiatives in the Chepang villages with low literacy. With project intervention, a total of

<b>Project No</b>	NEP/OP3/1/06/05		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Resource Identification and Management Society-Nepal		
<b>Operational Programme</b>	OP#3 - Forest ecosystem		
<b>Location</b>	Dhading	Benighat/	9
<b>Districts/VDC/Tot. Ward</b>		Jogimara/ Dhusa	
<b>No. of CBOs/HHs M/F</b>	10	248	765 716
<b>Duration</b>	07/06-04/08		
<b>SGP Grant (US\$)</b>	48,480		
<b>Cofunding (US\$) Cash and Kind</b>	4,072		41,254
<b>Total Grant (US\$)</b>	93806		

110 families have constructed improved pit latrines, 17 Chepang families in Jogimara have access to clean drinking water and 34 families have installed ICSs which has supported in reducing emission of CO<sub>2</sub> by 200 tons and fuel wood consumption by 142.3 tons per annum.

The increased awareness also led the Chepangs of Jawang to make an agreement related to employment policy, local tax and compensation mechanism with Annapurna Chun Dhunga Udyog at Jogimara. A total of NRs. 1,401,670 was raised by 34 families selling organic vegetables, especially tomatoes and beans in 2007.

The wild tubers in the project area have been scientifically identified and documented in the Book on Chepang Food Culture and Agro-Biodiversity. Issues regarding the use of the traditional forest-related knowledge of the Chepang in sustainable forest management and poverty alleviation were presented at an international seminar in Kunming, China, and an article on the ethnobotany of tuber crops consumed by the Chepang community was published in *Botanica Orientalis: Journal of Plant Science* in 2009 ([http://www.rimsnepal.org/data/downloads/Ethnobotany\\_Chepang.pdf](http://www.rimsnepal.org/data/downloads/Ethnobotany_Chepang.pdf)). These activities have brought the project international recognition and attracted the attention of stakeholders.

## Co-funding partners

Nepal Chepang Association, District Development Committee, District Agriculture Development Office sub-centre in Gajuri, Nepal Tourism Board, Heifer International in Nepal



A glimpse of Chepang agro-biodiversity fair in Jogimara, Dhading



Local Chepang women preparing wild fruits

**Background**

Unique high mountain biodiversity found in Rithapata and Luyata village development committees (VDCs) of Bajhang. But these resources are not managed well or used for overall well-being of local people. The practice of unsustainable harvesting of non-timber forest products has threatened many of the economically viable species in these VDCs. Among many causes, poor awareness and unsustainable management practices among shepherds and Yarshagumba (*Cordyceps sinensis*) collectors have depleted non-timber forest products (NTFPs). In the absence of safe sex education for shepherds and Yarshagumba collectors, HIV/AIDS is one the growing problems in these areas. Rampant poverty, marginalization, and low level of literacy have further propagated these problems. This project, hence, is designed to conserve mountain environment and ultimately foster the rural livelihood of the poor.

**Main objectives**

- To protect the mountain environment
- To promote income-generating and employment opportunities among the so-called lower castes

**Main activities**

- Conserving endangered plants and grass
- Providing conservation education to children and assistance to schools
- Initiating community managed hotel for promoting eco-tourism and conservation
- Conducting trainings on forest conservation, Yarsagumba collection
- Imparting HIV/AIDS awareness programs

**Major achievements**

In a total of 127 ha of land, the habitats of 11 endangered plant and animal species like deltoid yam, orchid latifolia, Otter (*Lutra lutra*), Naemorhedus sumantraensis, and Melursus ursinus were protected. Because locals were trained in yarsagumba harvesting, losses in the biodiversity of Saipal Himalayan region have decreased. Yarsagumba collection trainings have added the skill of 80 shepherds (96.25% female) and their families, which has helped in conserving mountain environment.

<b>Project No</b>	NEP/OP3/1/06/03		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Shree Somnath Jana Jagriti Kendra		
<b>Operational Programme</b>	OP#4-Mountain ecosystems		

<b>Location</b>	Bajhang	Rithapata/Luyata	5
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	21	209	574
<b>Duration</b>	05/06-04/08		
<b>SGP Grant (US\$)</b>	42,636		
<b>Cofunding (US\$) Cash and kind</b>	5556	3334	
<b>Total Grant (US\$)</b>	51526		

Students have engaged in forest friendly practices. More than 350 students were educated in biodiversity conservation and six local schools now teach courses in biodiversity conservation. Those who participated are demonstrably more forest-friendly and raise their voices about conservation. Their efforts regarding the red panda conservation were covered by local and national media. The district education office expressed its admiration of the project’s mobilization of students in conservation endeavors.

A project-established community-managed hotel now provides organic food to its guest and sensitizes them to biodiversity conservation. More than 100 foreign tourists have already visited and the hotel has earned NRs. 700,000 during the project’s tenure. Its profits are used to provide scholarships to poor and deserving school and college students. To ease the transportation of goods, a six-mule has been arranged by the hotel.

Extensive awareness campaigns on HIV/AIDS were carried out and behavior change information, education and communication materials and 13,000 condoms were distributed to 1,200 families to encourage safe sex. Trainees have used the skills and knowledge they acquired to motivate their peers to adopt safe sex practices.

**Co-funding partners**

United Nations Children Fund, Caritas Nepal, District Health Office Bajhang, Ministry of Education, Local Schools



## Background

Bahariya Lake is located in wards 1, 2 and 3 of Sorahawa village development committee (VDC) in Bardiya District and is home to 42 species of fish, 60 species of birds, 46 species of vegetation, 7 species of insects, 4 species of frogs, 3 species of snakes, 3 types of lizards, and a species of turtle. The lake covers 61.82 ha and its water irrigates 200 ha of agricultural land. However, the outlet and inlet are not operated systematically and water management is weak. Biodiversity is greatly threatened because the district development committee (DDC) allows private contractors to farm fish in the lake without considering biodiversity norms and values. The biodiversity of the lake is threatened by many factors, including human encroachment, over-fishing and conflict over the use of resources among the locals.

## Main objectives

- To protect and promote the Bahraiya wetlands located in Sorahawa VDC through the direct participation of indigenous Tharus and other locals

## Main activities

- Demarcating the boundary of the lake and constructing an earthen dyke around it
- Carrying out plantation around the wetlands
- Conducting capacity-building initiatives related to income-generating activities
- Publishing a book on indigenous Tharu medicinal plants

## Major achievements

To resolve the longstanding conflict on encroachment of lake, 70.98 ha of land was demarked as the lake area by building a 2000-m-long earthen dyke and 4.03 ha of land was reclaimed following thorough survey and stakeholders consultation. The role of District Survey Office was instrumental in this regard. More than 1,250 local people contributed free labor in this endeavor and planted 8,000 plant seedlings of 20 types around the wetlands. In order to conserve the wetland, a Baharaiya Wetlands Management Committee was formed and policies and rules were developed on the use of wetland resources. Various sites have been designated as conservation sites for different species, including snails, birds, lotuses and indigenous fish.

<b>Project No</b>	NEP/OP3/2/07/05		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	United Youth Community, Nepal (UNYC Nepal)		
<b>Operational Programme</b>	OP#2 Coastal, Marine and Freshwater Ecosystem		
<b>Location</b>	Bardiya	Sorahawa,	12
<b>Districts/VDC/Tot. Ward</b>		Mainapokhar, Jamuni	
<b>No. of CBOs/HHs M/F</b>	11	1164	4468 4637
<b>Duration</b>	06/07-12/09		
<b>SGP Grant (US\$)</b>	44,907		
<b>Cofunding (US\$) Cash and Kind</b>	76689		44747
<b>Total Grant (US\$)</b>	166343		

But unfortunately, all the community initiatives were in vain when DDC issued the fish farming and harvesting contract to a private party. The local community along with the management committee was totally against this contract to private party and lobbied continuously for total community ownership of the wetland. Since the contract was already being issued, DDC agreed to allocate 50% of revenue generated from fishery contract for the conservation of the wetland.

Since conservation cannot be isolated from livelihood, 60 families started seasonal and off-seasonal vegetable farming after being trained and have, increased their annual incomes, on average by NRs. 15,000 per family per year. Another 14 families have increased their income by a total of 1 million per year through fish farming in their respective fish pond.

The project released a book on Tharu Indigenous knowledge on Medicinal Plant and their traditional practices in Nepali. This book has been authored by indigenous Tharu personnel and documents 324 herbs and their uses and has played an important role in promoting indigenous practices.

## Co-funding partners

Social Inclusion Research Fund/SNV Nepal, Bardiya District Development Committee, Tharu Women's Upliftment Centre of Bardiya



Indigenous Tharus posing during vegetable nursery training, Sorahawa, Bardiya



A glimpse of Bahraiya Lake, Sorahawa, Bardiya

## Background

The rugged mountain slopes of Hansapur village development committee (VDC), Kaski District comprise two of Nepal's major forest ecosystems: lower subtropical sal (*Shorea robusta*) forests and temperate Schima-Castanopsis forests. The streams flowing through these mountains, including the Paste, Katle and Kurlung, form river valley and freshwater ecosystems which provide habitats to many medicinal plants. The VDC also is the watershed of Rupa Lake. The significance of this area has been enriched after Britain's Prince Charles trekking visit in the 1980s and earned its name as "Royal Trek". The area is also rich in agro-diversity but these diversities neither conserved nor systematically documented. Since Syaklungkot is a historical fort, it has immense ecotourism potential.

## Main objectives

- To develop core competencies (awareness, knowledge, attitude and skills) in the management, conservation and protection of natural resource through participatory processes in order to pursue a path of suitable and sustainable development and livelihood

## Main activities

- Preparing community biodiversity register, holding a biodiversity fair and protecting forest.
- Conducting training in biodiversity management, natural resource management, community environment trust fund mobilization, animal husbandry, beekeeping and organic coffee plantation

## Major achievements

Villagers gained knowledge about biodiversity conservation and medicinal plants and wetland species through a biodiversity fair and community biodiversity register preparation. Holding biodiversity fairs and register preparation was recognized as an effective approach to community led biodiversity management and was adopted and replicated by government line agencies like the Ministry of Forest and Soil Conservation and the Ministry of Agriculture and Cooperatives. Altogether 766 species of plants, including 601 species of crops and horticulture products, 150 species of medicinal plants and 15 wetland species have been recorded. More than 130 different species including forest species, medicinal plants and orchids have been planted in agro-forest biodiversity conservation blocks. A total of 449 ha of forest

<b>Project No</b>	NEP/OP3/1/06/16		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Indragufa Community Development Foundation		
<b>Operational Programme</b>	OP#3 and 4-Forest and Mountain Ecosystems		

<b>Location</b>	Kaski	Hansapur	8
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	23	470	23
<b>Duration</b>	04/06-03/08		
<b>SGP Grant (US\$)</b>	45000		
<b>Cofunding (US\$) Cash and Kind</b>	76764	49613	
<b>Total Grant (US\$)</b>	171377		

ecosystem and 300 ha of watershed around the Madi River, Rupa Lake, and the Katle, Paste and Kurlung streams were conserved.

In order to foster rural livelihood, a credit fund of NRs 756,000 has been created. With low interest rate of 8% only (the local rate ranges from 24 to 36%), the 470 households belonging to 22 CBOs have initiated different economic activities. 360 households were engaged in organic farming and 125 households initiated bee keeping. The locals initiated coffee (7000 plants) and banana (6400 plants) plantation in their farmland. The project also launched goat exchange programme starting from 12 poor farmers. One of the significant achievements was that, all the loans taken through the credit fund was paid back.

The project partnered with other donors to construct a local Ramkot Higher Secondary school and motorable road to Madhbasi. Likewise, Hansapur Biodiversity Conservation Committee, formed under the project and Syaklungkot Village Tourism Development Committee are promoting local resource based eco-tourism initiatives in coordination with relevant stakeholders. With their joint initiation, Syaklungkot village has been developed as a potential tourist destination. In order to promote the area, 60m new trail were constructed, 350m of trail was repaired and drinking water and sanitation facilities were developed. A viewing tower at the top of the Syaklungkot offers a panoramic view of Himalayas and Pokhara valley.

## Co-funding partners

World Vision Nepal, Empower Nepal Foundation, Japanese Visitor Centre, International Centre for Integrated Mountain Development



Local biodiversity displayed during the biodiversity fair, Hansapur, Kaski



Apiculture became impressive income source at local level, Hansapur, Kaski

## Background

In the past, more than 2,000 varieties of rice were cultivated in Nepal but these days only 200 varieties are found. Indeed, the development of improved varieties of seeds and technology and the increased use of chemical fertilizers and pesticides have pushed traditional genetic resources to the verge of extinction. Farmers are losing seed sovereignty as they have to depend more on improved varieties which they cannot regenerate. On the other hand Local varieties of rice are important both from an economic and a cultural perspective. Another advantage is that local varieties are more resistant than improved varieties to unfavorable environmental conditions like droughts.

In order to conserve the vanishing local varieties, a community managed seed bank was initiated with the support from LIBIRD, and SGP fund was sought to strengthen and sustain the conservation activities.

## Main objectives

- To strengthen the capacity of local communities and institutions to improve the conservation of agricultural biodiversity and maximize the utilization of native crops on a sustainable basis

## Main activities

- Establishing and mobilizing a community seed bank and a biodiversity trust fund
- Organizing a biodiversity fair and community bio-diversity register
- Conducting participatory plant breeding to increase genetic diversity
- Conducting capacity-building activities for seed production and saving and credit training.

## Major achievements

The project supported to build the infrastructure for the Nepal's first community-managed seed bank to ensure proper seed storage. At present, seeds of 80 important varieties have been conserved in the seed bank including 18 rice, 5 beans, 2 lentil and 1 barley varieties. With technical input from (Local Initiative for Biodiversity, Research and Development), improved rice varieties has been developed through the use rice varieties of Kochorwa origin namely lanjhi and aaiar, mansara and aaiar, and dudhisaro and hardinath. Through the selection a total of 13 new varieties named after Kachorwa with numbers 4, 5, 11, 17, 72,

<b>Project No</b>	NEP/OP3/1/06/11		
<b>Focal Area</b>	Biodiversity conservation		
<b>Grantee</b>	Agriculture Development and Conservation Society		
<b>Operational Programme</b>	OP13 - Conservation and Sustainable Use of Biological Diversity Important to Agriculture		

<b>Location</b>	Bara	Kachorwa	9	
<b>Districts/VDC/Tot. Ward</b>				
<b>No. of CBOs/HHs M/F</b>	22	1200	N/A	N/A
<b>Duration</b>	03/06-02/08			
<b>SGP Grant (US\$)</b>	32,500			
<b>Cofunding (US\$) Cash and Kind</b>	1748		264	
<b>Total Grant (US\$)</b>	34512			

74, 125, 149, 169, 202, 205, 208 and 210 had been identified as promising varieties.

A total of 401 samples of 21 species of local food crops and 2,379 samples of 21 improved food crop species are being grown on 32.83 ha and 884.86 ha land respectively under project facilitation. To broaden genetic diversity, a participatory plant breeding technique has been implemented; it has provided 276 farmers with "diversity kits" of 13 species of rice. 57 of those farmers produced 23 tons of rice seeds of five varieties (hardinath, loktantra, sabitri, ghaiya and mithila) and sold it directly to other farmers, agro-vets, and even Indian farmers.

In order to sustain the seed bank and promote the conservation of traditional varieties, the project has established a biodiversity fund which provides easy loans to farmers. The farmers accessing such loan also need to borrow traditional variety of seed and repay 1.5 times more seed of same variety after harvesting. This has not only rolled the seed to better adapt in changing climatic condition but also helped change people's negative perceptions about the cultivation of traditional varieties. During the project tenure, 150 farmers mobilized a total of NRs. 1,304,780 (which include biodiversity trust fund of NRs 571,320) yielding a total economic turnover of NRs. 4,074,330.

## Co-funding partners

Rice Research Program, LI-BIRD, National Agriculture Research Centre, Microenterprises Development Programme



Participatory plant breeding: farmers and experts interaction in the field, Kochorwa, Bara



Seed stored in a community managed seed bank, Kochorwa, Bara

## Background

The Gwallek forest of Baitadi District, covering an area of 2,571 ha spread over eight village development committees (VDCs) is one of the biggest forests in the Far-West Development Region. More than 24,000 people in adjoining villages are directly dependent on this forest to meet their demands for leaf litter, fuel wood, fodder, and timber and 50,000 people are indirectly dependent on it for drinking water and irrigation purposes. Fourteen community forests have been handed over to community forest users groups which benefit 16% of the families in the district. The vast area of Gwallek forest and community practice of mustard cultivation provides ample opportunity for beekeeping and other income generation initiatives in the project area.

## Main objectives

- To conserve Gwallek Forest through social, economic and livelihood (beekeeping) development

## Main activities

- Establishing a nursery and conserving medicinal herbs
- Distributing beehives and initiating commercial beekeeping
- Conducting capacity-building training in beekeeping and beehive production
- Producing improved cooking stoves (ICSs) and installing a multi-purpose electric mill

## Major achievements

Gwallek Forest Conservation Committee was formed to institutionalize project-initiated conservation initiatives in Gwallek Forest. Rules and regulations have been made and are being enforced in order to discourage the over-exploitation of forest resources. The committee has also planted 5,200 medicinal herbs in two nurseries. The locals have installed a total of 772 ICSs which has helped reduce pressure in the

# GWALLEK FOREST CONSERVATION THROUGH INCOME GENERATION (BEEKEEPING) PROJECT

<b>Project No</b>	NEP/OP3/1/06/12		
<b>Focal Area</b>	Biodiversity		
<b>Grantee</b>	Kedar Saving and Credit Group		
<b>Operational Programme</b>	OP#3-Forest Ecosystem		

<b>Location</b>	Baitadi	Gwallek, Durgasthan,	27
<b>Districts/VDC/Tot. Ward</b>		Nagarjun	
<b>No. of CBOs/HHs M/F</b>	20	1400	3500
<b>Duration</b>	07/06-05/08		
<b>SGP Grant (US\$)</b>	19,272		
<b>Cofunding (US\$) Cash and Kind</b>	1629		3112
<b>Total Grant (US\$)</b>	24013		

Gwallek forest and also cut emission of 1930 tons of carbon dioxide per annum in the atmosphere.

To promote bee keeping, the project trained 60 members on beekeeping and beehive production and set up revolving fund to promote beekeeping. As a result, 341 families belonging to 20 groups have benefited from the beehives; 34,160 beehives were distributed to the trainees so they could start up beekeeping. Farmers earned NRs. 1,200,000 by selling 30 beehives at the rate of NRs. 4,000 per hive and got additional income from the sale of honey.

To promote mustard (important bee flora) cultivation and improve the quality of final mustard product, three oil-exPELLing machines were installed in each of the three project VDCs. This initiative has ensured market for mustard oil and thus encouraged farmers.

## Co-funding partners

District Forest Office, District Soil Conservation Office, District Agriculture Development Office, Gwallek, Durgasthan, Nagarjun VDCs



Community building construction in progress, Gwalek, Baitadi



Conservation pond for ground water recharge and irrigation, Gwalek, Baitadi

# PROJECT FOR DEVELOPING NATIONAL FOREST CERTIFICATION STANDARDS IN NEPAL

## Background

Forest certification is relatively new in Nepal. As originally conceived, it is being promoted as a marketing tool for selling forest products to consumers who are concerned about conserving the environment. It is used mainly for producers to gain access to markets, especially international ones, and could play a critical role in introducing Nepal's forest products further afield. Even though timber is not exported from Nepal, a significant volume of non-timber forest products (NTFPs) are exported. There are various reports about the amount of Nepalese trade of NTFPs and other forest products, which estimates transactions up to US \$ 26 million per year. Thus those who are currently exporting NTFPs like medicinal plants and wooden handicrafts may need forest certification to access international markets. But on the other hand, certification is very expensive as Nepal does not have any accredited certifying entity nor any standard for national forest certification. Thus the project aimed to promote forest certification in Nepal.

## Main objectives

- To formulate national forest certification standards
- To get accreditation from international certification bodies
- To promote forest certification in Nepal

## Main activities

- Raising awareness about forest certification
- Institutionalizing a national working group
- Developing national standards
- Holding workshops and meetings through networks for sharing experiences

## Major achievements

After a series of workshop and dialogue, a national working group has been formed incorporating all three major sectors (environment, social and private). It has prepared operation policy and submitted accreditation documents to the Forest Stewardship Council (FSC) regional office. In the meantime, it also prepared, shared, and finalized a draft of national

<b>Project No</b>	NEP/OP3/1/06/04		
<b>Focal Area</b>	Biodiversity		
<b>Grantee</b>	Nepal Foresters' Association		
<b>Operational Programme</b>	OP#3 – Forest Ecosystems		
<b>Location</b>	N/A	N/A	N/A
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	N/A	N/A	N/A
<b>Duration</b>	06/06-05/08		
<b>SGP Grant (US\$)</b>	28510		
<b>Cofunding (US\$) Cash and Kind</b>	1958050	N/A	
<b>Total Grant (US\$)</b>	1986560		

standards and selected seven forest user groups from the districts of Dolakha, Ramechhap, Okhaldunga, Myagdi, Parbat, Bara and Dang representing three distinct eco-regions (high altitude, mid-hills, and the Terai) for piloting. District-level training in forest certification was provided to district level stakeholders and as result, a total of four CFUG operation plans have been amended in line with forest certification. Parliamentary committee of United Kingdom visited Jhauri CFUG (first CFUG that incorporated certification criteria in their OP) in Parbat and appreciated the local level initiative to forest certification. The project designed, produced, and distributed Training Manual on Forest Certification in Nepal (Nepali Script) and distributed among the relevant stakeholders.

With the project's continuous advocacy efforts, forest certification is incorporated in the curriculum of Institute of Forestry Pokhara, Kathmandu Forestry College and Civil Service Commission. FSC has recognized Nepal Foresters' Association as self motivated promoter and endorsed Mr. Kumud Shrestha as FSC contact person for Nepal.

## Co-funding partners

Nepal Swiss Community Forestry Project, Livelihood and Forestry Programme, Biodiversity Sector Programme for Siwaliks and Tarai/SNV



A view of Salleri CF in Parbat



Community interaction during approval of forest certification standard, Parbat

**Background**

Sugandha kokila (*Cinnamomum glaucescens*) is an endemic species of the Lauraceae family found only in few mid-west hills districts of Nepal at an altitude of 600-1500 m. The people of Halwar and Bijaru village development committees (VDCs) of Dang District regularly collect and sell its seeds for NRs. 8,000 per quintal. The oil extracted is used to make body sprays and essence sticks. Despite its significance, there is not enough information on silvicultural aspect and local knowledge is also limited. As such, there is no institutional effort in conserving this plant.

**Main objectives**

- To mobilize communities to conserve forest and mountain ecosystems for sustainable livelihood

**Main activities**

- Rehabilitating and domesticating the endemic species Sugandha kokila in part by establishing nursery beds for seedling propagation
- Conserving agricultural biodiversity and agro-ecosystems (simtharo dhan)
- Constructing a guest house, motorable road and installing a water mill
- Facilitating income-generating activities through training in mushroom, ginger and bee farming training.

**Major achievements**

Locals have become aware of the ecological and economic values of Sugandha kokila. In a very short time, 20,000 seedlings of this species were planted on 5 ha of land and 30 ha of natural forest area conserved. Livestock grazing is prohibited in both areas. Women’s groups established six community nurseries. With these group’s efforts, more than 100 quintal Sugandha kokila was marketed within the first year of the project.

<b>Project No</b>	NEP/OP3/1/06/01		
<b>Focal Area</b>	Biodiversity		
<b>Grantee</b>	Janachetana Sarokar Manch		
<b>Operational Programme</b>	OP#3-Forest Ecosystem		

<b>Location</b>	Dang	Halwar, Bijauri	18
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	14	750	150
<b>Duration</b>	01/08- 12/09		
<b>SGP Grant (US\$)</b>	39,328		
<b>Cofunding (US\$) Cash and Kind</b>	5,513		1,400
<b>Total Grant (US\$)</b>	46,241		

Simthado rice, a local cultivar, which was in grave danger of extinction, has been rejuvenated by running extensive awareness campaigns that stimulated local interest in its cultivation and conservation. About 7.37 ha land was planted with simthado rice; the yield of 800 quintals, an increase of 10%, benefited 150 families. The project collected about 12 quintals of the rice to store as seeds for the following year in a locally made bamboo vakari (wooden basket) and five quintals for distribution to disadvantaged farmers.

The project was pivotal in different development initiatives. With local peoples' active participation, a community guesthouse, 10 km long road that link Syalapani with Chillikot and water mill benefitting 80 households were constructed. The project also imparted training on beekeeping, ginger farming and mushroom cultivation. As a result, 30 beekeepers, 28 ginger farmers and 24 mushroom cultivators have earned an average of NRs. 50,000; NRs. 20,000 and NRs. 35,000 per annum respectively.

**Co-funding partners**

Halwar and Bijauri VDCs, Bhulke Community Forest, District Forest Office, District Soil Conservation Office, District Development Committee, District Agriculture Development Office



Women members' campaign to conserve Sugandha Kokila in Chillikot, Dang



A young Sugandha Kokila (*Cinnamomum glaucescens*) tree

SGP supports a wide range of projects under the focal area of climate change mitigation. It is eligible for funding in this area as Nepal has ratified the UNFCCC. SGP supports projects which contribute to the removal of cultural, institutional, technical and financial barriers and promote the dissemination of renewable and alternative energy technologies. These projects primarily involve building local capacity and raising public awareness about climate change and energy conservation and efficiency.

In Nepal, SGP has supported the promotion of biogas, solar home systems, micro hydro, improved cook stoves, rice husk stoves, bio-briquettes, bamboo eco houses, electro buses and solar tukis (lanterns). These projects have not only reduced the emission of carbon dioxide into the atmosphere but also helped conserve forest ecosystems. The 9 projects below are briefly described in this chapter:

- 1** Promoting Improved and Sustainable Cardamom Farming through the Conservation and Sustainable Use of Biodiversity and the Adoption of Renewable Energy
- 2** Renewable Energy Promotion for Sericulture Project
- 3** Gagaj Community Development and Environment Conservation Project
- 4** Community Bio-briquette and Livelihood Project
- 5** Mitigation of Climate Change by Vegetable Waste-Based Institutional Multipurpose Biogas Plants in Urban Areas
- 6** Integrated Participatory Domestic Elephant Waste Management in Chitwan National Park
- 7** Pico Hydro Promotion Project
- 8** Biodiversity Conservation and Promotion of Livelihoods through Environment Development Activities Which Mobilize Local Resources
- 9** Recycling of Municipality Waste through Biogas Production and Composting
- 10** Sustainable Livelihoods for Disadvantaged Groups by Enhancing the Alternative Use of Energy (Rice Husk Stoves)

## Background

Nepal produces one-quarter of the global production of large cardamom (*Amomum subulatum*). In 2005, Nepal produced 4,300 Mt of cardamom, the second largest amount after India (Vassilieva, 2005). Cardamom is cultivated on 11,000-13,500 ha in 39 districts with Taplejung the leader: production in this district comprises 29% of the total area and 32% of the total production. Productivity is also highest in Taplejung: 590 kg per ha as compared to the national average of 540 kg per ha. Because cardamom is cultivated on marginal and degraded slopes, it does not compete with food crops. Cardamom is planted under trees, mainly *Alnus nepalensis*. A typical 1-ha cardamom plot has 1100-1600 trees and thereby protects soil well from erosion and landslides. Cardamom farming is a labor-intensive enterprise that demands human resources in both pre- and post harvesting activities.

## Main objectives

- To introduce improved cardamom dryer and contribute to mitigation of climate change
- To promote improved farming and management practices in order to conserve biodiversity
- To contribute to the sustainable livelihoods of cardamom farmers

## Main activities

- Installing environment-friendly, fuel-efficient drying technologies
- Establishing cardamom nurseries and demonstration plots
- Drafting a policy on cardamom and lobbying for its adoption
- Organizing trainings and policy advocacy in improved cardamom farming and processing

## Major achievements

To mitigate the impact of climate change, a total of 58 fuel-efficient improved dryers boasting a 27% savings in fuel were installed. To dry 500 kg of cardamom, each consumes 1300 kg of firewood instead of the 1800 kg a traditional dryer uses and can be used 15 or more times a season, depending on the yield, thus producing a total savings of 7.5 metric tons of firewood per season. The 243 farmers who have benefited from improved dryers have already traded NRs. 1,804,960 worth of cardamom.

The improved driers improved the quality and quantity of cardamom pods by preventing burning. As a result, traders no longer get a 2.5-kg discount per

<b>Project No</b>	NEP/OP3/2/06/01		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Environment Conservation and Development Forum		
<b>Operational Programme</b>	OP#6- Promotion and Adoption of Renewable Energy Technologies by Removing Barriers and Reducing Implementation Costs OP#3-Forest ecosystems		

<b>Location</b>	Taplejung	Hangdewa/Tiringe/ Sikaicha	7
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	15	650	1790
<b>Duration</b>	07/06-04/08		
<b>SGP Grant (US\$)</b>	49,500		
<b>Co-funding (US\$) Cash and Kind</b>	17,050	N/A	
<b>Total Grant (US\$)</b>	66,550		

100kg of cardamom (a practice known as the “fawa” system) and 5% more as a premium price for superior quality. In 2008, farmers earned an additional income of NRs. 3,733 (USD 51) for each 500 kg of cardamom dried.

The farmers of three groups have planted an additional eight ropani of land with more than 50,000 cardamom seedlings as demonstration plot. It is estimated that owing to cardamom cultivation, the promotion of private forest is increased by 241% and forest fire is reduced by 27%.

Following extensive policy advocacy, lobbying, workshops and meetings with stakeholders at district, regional and national level, a draft policy paper on cardamom production and development was submitted to the Ministry of Agriculture. The project also played an instrumental role in forming a cardamom development subcommittee in the district development committee and channelizing resources for cardamom development amounting to NRs. 200,000 and NRs. 300,000 in the fiscal years 2007 and 2008 respectively. Also, the establishment of 13 market centers has increased farmers’ access to information on the current price of cardamom and thereby enhanced their bargaining power.

## Co-funding partners

Netherlands Development Organizations Nepal, Rural Enterprise Assistance Program, Cardamom Farmers Group, Local Cooperative, and community



Cardamom drying in an improved cardamom dryer, Taplejung



A local woman in her Cardamom and maize farm, Taplejung

# RENEWABLE ENERGY PROMOTION FOR SERICULTURE PROJECT

## Background

Sericulture and silk industry is an important employment generating sector in Nepal: many people earn their living as sericulturists, reelers, weavers, workers, and other related jobs. Tanahu District is one of the leading districts in the field. In Bandipur village development committee alone, 384 families earn their living from sericulture. The enormous amounts of heat required to heat cocoons while producing silk creates great pressure on nearby forest resources because there is no effective technology to do so. In addition, the same cooking stove is used to heat cocoons and to cook food, causing two problems: the chemicals used have an adverse effect on human health and the smoke generated while cooking is toxic to cocoons. Hence, the proper management of this procedure and the introduction of new, economical, and environmentally-friendly technologies are both a challenge and an opportunity in sericulture.

## Main objectives

- To facilitate sericulture farmers in adopting renewable energy technologies

## Main activities

- Testing of hybrid solar dryer
- Establishing biogas plants and solar home system
- Constructing separate silkworm rearing houses
- Organizing trainings such as enterprise development, sericulture promotion, and supporting disease treatment programs

## Major achievements

The project tested a hybrid solar dryer for silk production. Since killing the pupa inside the cocoon (which is prerequisite of silk rearing) should be done in appropriate time by maintaining appropriate heat, excessive heat or delay in heating both would destroy whole cocoon. Thus, it was found that hybrid solar dryer is not an appropriate for the purpose. Instead, the silk farmers revived the cocoon burning chamber built earlier by Parental Stock Seed Cocoon Resource Centre, Bandipur.

<b>Project No</b>	NEP/OP3/1/06/08		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Energy and Environment Nepal		
<b>Operational Programme</b>	OP#6-Promotion and Adoption of Renewable Energy Technologies by Removing Barriers and Reducing Implementation Costs		

<b>Location</b>	Tanahu	Bandipur/ Keshabtar	4
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	20	285	1011
<b>Duration</b>	04/06-07/08		
<b>SGP Grant (US\$)</b>	30,000		
<b>Cofunding (US\$) Cash and kind</b>	43,594		46,197
<b>Total Grant (US\$)</b>	119,791		

To facilitate sericulture farmers in adopting renewable energy technologies, a solar home system useful for both lighting the house and the silkworm rearing room have been installed for a total of 42 families. Likewise, 52 families have helped to build toilet attached biogas plants. Cumulatively, a total of 339 tons of carbon emission/per annum has been reduced.

Fifty separate silkworm-rearing houses were constructed with financial assistance from the United Nations Environment Programme. The production of cocoons has risen by an average of 13 kg per month in these houses. As silk production enterprises are dependent on mulberry trees, 135,000 seedlings were planted. With new technologies and increased plantation, the average farmer earned NRs. 12,496 more each season.

In collaboration with the Parental Stock Seed Cocoon Resource Centre, Bandipur, the project conducted different capacity building programs including commercial farming and disease infection initiative. As a result, surrounding communities have also started silk rearing.

## Co-funding partner

United Nations Environment Programme, Alternative Energy Promotion Centre, Biogas Support Programme Nepal, Parental Stock Seed Cocoon Centre



Silkworm cocoons ready for silk rearing, Bandipur, Tanahu



Silkworm larva feeding on mulberry leaves, Bandipur, Tanahu

### Background

Gagalphedi village development committee (VDC) lies just 20 km away from the capital city but is no different from any remote village in Nepal. The village lies on the outskirts of the Shivapuri National Park and people exploit Shivapuri Forest to meet all their forestry needs. They use wood to make houses and firewood to cook food and collect fodder for livestock. The fact that the production of local liquor is one of the major income-generating sources for local people puts still more stress on the nearby forest. The earlier GEF-SGP supported project 'Sustainable Energy and Women Empowerment Project introduced vermin composting which was well liked by farmers. But since production was limited to tokaris (a bamboo basket) there was a need to institutionalize the initiatives in a systematic manner. This project aimed to demonstrate how a small-scale local initiative could be transformed into a cooperative-level vermin compost business.

### Main objectives

- To conserve the environment and enhance the livelihoods of people through fodder cultivation, bio-agriculture and livestock farming

### Main activities

- Constructing biogas plants and installing improved cooking stoves (ICSs)
- Producing vermis and vermi-composting.
- Promoting afforestation

### Major achievements

In order to promote renewable energy technologies, the project supported to install 179 ICS which resulted in an annual savings of 214.8 MT of firewood, NRs. 2,899,800, and 447.5 tons of carbon emission per

<b>Project No</b>	NEP/04/12		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Gagal Samudaik Samanwaya Samiti		
<b>Operational Programme</b>	OP#6 – Promoting the adoption of renewable energy by removing barriers and reducing implementation costs		

<b>Location</b>	Kathmandu	Gagalphedi/ Bajrayogini/ Sundarijal	15
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	27	1900	2120
<b>Duration</b>	04/2005-03/2007		
<b>SGP Grant (US\$)</b>	22,707		
<b>Cofunding (US\$) Cash and Kind</b>	64,194		5,518
<b>Total Grant (US\$)</b>	92,419		

year. Likewise, the construction of 36 biogas plants saved 259,200 kg of firewood and NRs. 1,296,000 and 252 tons tons of carbon emission per year.

To promote organic farming, vermin-culture was promoted. Half a million worms and 45,000 kg of vermi compost were produced, earning NRs. 50,580 and NRs. 44,680 respectively from their sale. To systematize the vermis, cemented beds were constructed for the production of vermin compost in a large scale. Successful farmers reaped multiple benefits from vermin-composting, including a 30-40% reduction in the use of chemical fertilizers. Their success provided women vermin-composters with recognition and respect from their families and communities and they were an inspiration to other local women farmers.

### Co-funding partners

Local communities, Biogas Support Program, District Forest Office, District Agriculture Development Office



Vermi-compost is a nutrient-rich manure



Vermis reared in cemented bed in Gagalphedi, Kathmandu

# COMMUNITY BIO-BRIQUETTE AND LIVELIHOOD PROJECT

## Background

The initial success of biobriquette made from Eupatorium (project NEP/03/12) has opened up possibility of replication in more than 12,000 community forestry users groups in Nepal. Since invasive and unwanted Eupatorium (banmara) weed is used to produce the biobriquette, it not only provides energy to the rural households but also improves the forest health. Thus the project aims to promote this technology in different regions of Nepal.

## Main objectives

- To mitigate deforestation through the promotion of beehive briquettes as an alternate source of fuel

## Main activities

- Producing briquettes and marketing the surplus
- Developing the Banasapati Gueentha (Biobriquette) Production Unit in Bisankhu Narayan
- Establishing and promoting biobriquette in different regions
- Improving production technology by developing a simple compaction tool, improving grinding machines, running tests to determine optimum composition, developing low-cost technologies for monitoring composition and quality control, mobilizing non-timber forest products, refining stoves to achieve maximum efficiency

## Major achievements

The project built local capacity to produce biobriquette at Banke (Mid west Nepal), Jhapa (estern Nepal) and Tanahu (West Nepal) and established Banasapati Gueentha Production Unit in Bisankhu Narayan for the sustainability of the project’s endeavour. Cumulatively, these units produced 48,500 bio-briquettes during the project tenure and NRs. 388,000 was earned by selling them at NRs 8 per briquette. The production of bio-briquettes by using the invasive banamara plant has

<b>Project No</b>	NEP/SGP/OP4/CORE/09/15		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Integrated Development Society – Nepal		
<b>Operational Programme</b>	OP#6-Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs		

<b>Location</b>	Lalitpur/Tanahu/ Banke/ Jhapa	Bishanku Narayan, Turture, Kamdi, Shantinagar	4	
<b>Districts/VDC/Tot. Ward</b>				
<b>No. of CBOs/HHs M/F</b>	3	847	1355	1500
<b>Duration</b>	09/09-04/11			
<b>SGP Grant (US\$)</b>	20400			
<b>Cofunding (US\$) Cash and kind</b>	29161		11199	
<b>Total Grant (US\$)</b>	60760			

multiple benefits: it conserves biodiversity; it reduces human pressure on forest resources and mitigates the deforestation rate. Due to regional approach of dissemination, the bio-briquette from Eupatorium has become popular among the community forests users which have led them to amend their operational plant to produce bio-briquette.

The project also supported briquette production unit at Bishankhu Narayan with grinder and compaction machines and different briquette moulds. Likewise, low cost briquette stove made from mud was also developed and promoted. A mechanical engineering student at Nepal Engineering College wrote a thesis on the sustainability of bio-briquettes in Bishankhu Narayan.

## Co-funding partners

German Embassy, CECI/SAHAKARYA Project, non-governmental organizations and community based organizations



Biobriquettes ready for use



Invasive weeds of Eupatorium adenoforum: raw material used for Biobriquette making

## Background

In urban areas, waste management is a huge problem. According to Clean Kathmandu Valley (CKV) study, nearly 435 ton per day of solid waste is generated in Kathmandu valley. Of this waste, 72% is biodegradable and has immense potential of generating biogas. This project aims to produce biogas from urban waste products (particularly kitchen waste) that could substitute liquefied petroleum gas used in the kitchen and consequently reduce the release of methane gas from the decomposition of such wastes.

## Main objectives

- To contribute toward the mitigation of climate change by developing an institutional multipurpose biogas plant (IMBP) to demonstrate how the waste from a fruit and vegetable market can be handled
- To build capacity by training stakeholders to construct an IMBP which utilizes vegetable and fruit wastes, and to disseminate this knowledge

## Main activities

- Designing an IMBP, estimating its cost, and selecting a company/community to construct it
- Feeding the completed IMBP, biodegradable raw material and monitoring its operation
- Preparing manuals and conducting trainings in operation and maintenance

## Major achievements

Three demonstration IMBPs have been successfully installed in three different locations; carbon dioxide emissions are reduced by 2,580 kg every year.

Of the three IMBPs, the IMBP at Mirabel Resort Hotel in Dhulikhel, Kavre District, is the most efficient one. It produces 60 m<sup>3</sup> (1260 MJ) gas per

<b>Project No</b>	NEP/OP3/2/07/14
<b>Focal Area</b>	Climate Change
<b>Grantee</b>	Nepal Solar Energy Society
<b>Operational Programme</b>	OP#6 – Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

<b>Location</b>	Lalitpur/Kavre	N/A	N/A
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	N/A	N/A	N/A
<b>Duration</b>	06/07-10/08		
<b>SGP Grant (US\$)</b>	14,922		
<b>Co-funding (US\$) Cash and Kind</b>	16,057	1,000	
<b>Total Grant (US\$)</b>	31,979		

month and saves 1.81 cylinders of LPG and 90 kg of carbon dioxide. This is followed by IMBP at Namuna Machhindra Secondary School of Lalitpur which generates 48m<sup>3</sup> (1008 MJ) of gas per month and saves 1.5 cylinders of LPG and 72 kg of carbon dioxide. The IMBP installed at the office in the environmental section of the Lalitpur Sub-Municipality Committee generates 36m<sup>3</sup> (756 MJ) of gas per month, saving the office 1.08 cylinders of LPG and preventing 53.99 kg of carbon dioxide from being emitted into the atmosphere.

A total of 72 individuals—24 representatives of the environmental sector, 24 non-governmental organization officials, and 24 potential entrepreneurs of 12 municipalities—were trained on IMBP. A comprehensive manual on IMBP in Nepali was prepared and distributed to stakeholders and organizations.

## Co-funding partners

UN-HABITAT, Lalitpur Sub-metropolitan City, Centre of Energy Studies/ Institute of Engineering/Tribhuvan University



Feeding the IMBP at Hotel Mirabel, Dhulikhel



Burning gas produced from IMBP digester

## Background

Elephant jungle safari in Sauraha, one of the most popular tourist hubs of Chitwan National Park, is a dream for visiting tourists. There are as many as 165 elephants for jungle safari and other adventures like elephant polo which takes place once a year with visitors coming from all around the world. Sauraha however, is plagued by the problem of unmanaged elephant waste. Each elephant produces 130 kg of dung a day, resulting in 165 elephants producing 21.5 metric tones of dung a day. This is generally a nuisance and dumped in a place called ‘Malkhad’ to dry naturally. The dried dung is later burnt emitting CO<sub>2</sub> into the atmosphere. On the other hand, the use of chemical fertilizers greatly pollutes rivers and wetlands affecting the biodiversity. The Royal Chitwan National Park and Buffer Zone Management Plan (2001-2005) also recognizes “poor sanitation and dung disposal system in Hattisa” as a major issue.

## Main objectives

- To manage elephant waste efficiently in order to mitigate climate change
- To improve the livelihoods of local people

## Main activities

- Constructing vermin composting plants, inoculating them with worms, testing the quality of vermin compost, harvesting and marketing vermin compost
- Preparing a video documentary and a training manual on vermin composting
- Conducting trainings in waste management, vermin composting, integrated pest management, organic farming

## Major achievements

Two medium-sized vermin-composting plants (shade house) were constructed to manage the dung of elephants. Till date, they have

<b>Project No</b>	NEP/OP3/2/07/18		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Pesticide Monitor Nepal		
<b>Operational Programme</b>	OP5# - Removal of barriers to energy efficiency and energy conservation		

<b>Location</b>	Chitwan	Bachhuli	1
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	15	60	70 15
<b>Duration</b>	07/07-08/08		
<b>SGP Grant (US\$)</b>	14,500		
<b>Cofunding (US\$) Cash and kind</b>	1714		NA
<b>Total Grant (US\$)</b>	16,214		

produced 30 tons of vermin compost and reared more than 1 million worms. Elephant dung that used to be dumped previously is now utilized as a resource. The semi digestive elephant dung is very good feed for vermin and produce vermin compost. Vermi-compost is sold at NRs. 15 per kg and vermin at NRs.1 per worm, both locally. The vermi-compost plant is a good place for educational tourism as well. After participating in the vermin composting training, 60 women have started vermicomposting in their own houses.

The project partnered with Bird Conservation Society promoted Paryabaraniya Krishak Manch to promote and sustain the vermin-composting plants. The project prepared a video documentary and a training manual to increase awareness, foster technical knowledge and disseminate good practices regarding vermin composting.

## Co-funding partners

Community based organizations, non-governmental organizations and recipient communities, Paryabaraniya Krishak Manch



Vermi-compost making from elephant waste in Sauraha, Chitwan



Earthworm-Red Wiggler (*Eisenia fetida*) used in vermicompost making

### Background

Among the several renewable energy technologies available in Nepal, hydropower is a particularly successful one since there are extended local manufacturing base, favorable government policy, and financial support. Hydropower is especially appropriate for providing electricity to mountain and hill communities at the pico level (less than 5kW) as the technology required is small, manageable and inexpensive. Bullingtar and Raipur village development committees (VDCs) of Nalwalparasai and Tanahun districts respectively are suited to installing hydropower plants: they have dense but scattered settlements with 18-20 households in each cluster, a suitable water resource, and, due to their geographical location, are unlikely to be linked into the national gridline. The fact that pico-hydro electricity can help a community establish a rural enterprise that reduce drudgery and generate employment is a big incentive for setting up a plant.

### Main objectives

- To secure global environmental benefits in the area of climate change mitigation (by reducing the emission of greenhouse gases) through community-based approaches that enhance the livelihoods of local people

### Main activities

- Installing seven pico-hydro power plants, forming groups to maintain and operate them, and establishing a pico-hydro service and information centers
- Mobilizing community established total fund (CETF)
- Conducting capacity-building training in pico-hydro repair and maintenance, pico-hydro utilization, and enterprise development.

### Major achievements

The seven pico-hydro plants namely Bhrikuti, Devaki, Damauli, Sandkhola, Kusunde, Setekhola A and Setkhola B (ranging from 2 kW to 6.7 kW) installed collectively generated 24.2 kW of electricity to the

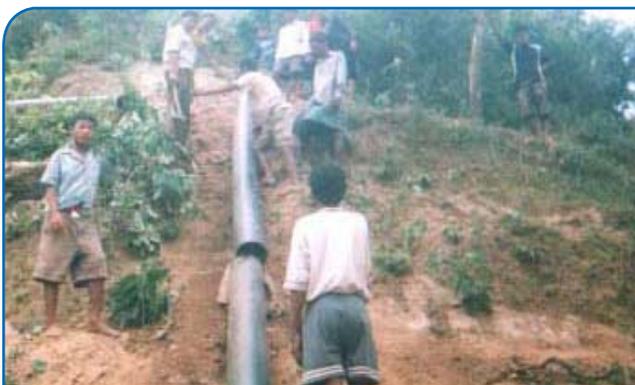
<b>Project No</b>	NEP/05/04		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Rural and Alternative Energy Pvt. Ltd.		
<b>Operational Programme</b>	OP#6-Promoting the adoption of renewable energy by removing barriers and reducing implementation costs		
<b>Location</b>	Nawalparasi,	Bullingtar, Raipur	7
<b>Districts/VDC/Tot. Ward</b>	Tanahun		
<b>No. of CBOs/HHs M/F</b>	32	255	804 850
<b>Duration</b>	10/05-06/07		
<b>SGP Grant (US\$)</b>	49679		
<b>Cofunding (US\$) Cash and kind</b>	58513		18547
<b>Total Grant (US\$)</b>	126739		

benefit of 1,654 members of 255 families. This has reduced kerosene consumption by 90% and mitigated the adverse health effects associated with kerosene lighting and fatwood burning. Electricity has been supplied regularly as regular repair and maintenance of plants has kept them in good condition. The trained staffs at the local pico-hydro service centre provide timely maintenance at low cost.

The skills of disadvantaged people were increased through various capacity-building trainings, including commercial beekeeping and orange orchard production. The project has mobilized Rs 1,982,192 as CETF for income generation and Pico-hydro schemes. Apart from Pico-hydro, a total of 156 families benefited from goat keeping, and pig farming. Twenty-five farmers benefitted from beekeeping training and bee-hive support. During the project tenure, with the mobilization of CETF, people earned NRs 4,524,000.

### Co-funding partners

Alternative Energy Promotion Centre, District Development Committee, Bullingtar, Raipur VDCs, local CBOs, Rural and Alternative Energy Pvt. Ltd



A pico-hydro under construction in Bullingtar, Nawalparasi



Participants during bee-keeping training in Bullingtar, Nawalparasi

## Background

The fact that the northern areas of Bara districts are forested while settlements are located 35-50 km to the south, near the Indian border, has effectively barred local people from firewood from forest. However, there is adequate public/communal land suitable for agro-forestry available at the local level. Introducing agro-forestry-related activities can help conserve government forests and communal land, provide livelihood opportunities for the ultra-poor, save firewood collecting time, see wasted land utilized wisely, and prevent encroachment. Likewise, establishing school gardens would also enhance stewardship among the school students.

## Main objectives

- To mitigate deforestation and build local capacity for biodiversity conservation by promoting the utilization of local resources

## Main activities

- Producing beehive briquettes
- Installing improved cooking stoves (ICSs)
- Initiating public agro-forestry
- Establishing school gardens

## Major achievements

To mitigate deforestation, two women's groups were helped in producing 7000 briquettes, whose sale for NRs. 7 each earned 17 families a regular income. The groups also made and sold 802 mud stoves for NRs. 30 each, for total earnings of more than NRs. 73,000. Also, six ICSs promoters installed 300 ICSs in as many houses for NRs. 175, earning more than NRs. 52,000. These endeavors prevented the release of 334.10 tons of carbon dioxide gas annually (197.10 tons from the ICS and 137 tons from the briquettes), helping in the global drive to reduce emissions. At the same time, the indoor environment was improved because ICS have chimneys.

<b>Project No</b>	NEP/05/08
<b>Focal Area</b>	Climate Change
<b>Grantee</b>	Rural Region and Agro-forestry Development Centre
<b>Operational Programme</b>	OP#5 & 6—Removal of Barriers to Energy Efficiency and Energy Conservation, and Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs

<b>Location</b>	Bara	Dumbarbana/Lipanimaal/ 8
<b>Districts/VDC/Tot. Ward</b>		Ramputokani/Buniyaad/ Bhaluhi-bharwaliya
<b>No. of CBOs/HHs M/F</b>	3	332 N/A 332
<b>Duration</b>	02/06-01/07	
<b>SGP Grant (US\$)</b>	19590	
<b>Cofunding (US\$) Cash and Kind</b>	3792	1171
<b>Total Grant (US\$)</b>	24553	

A total of 35 poor and landless families gained access to 2 ha of public land on which to practice agro-forestry. Each family has planted more than 350 seedlings of different fodder and forage tree species and now earns about NRs. 40,000 annually selling seasonal and off-seasonal vegetables. This project has not only increased greenery and boosted economic activity but also helped reclaim degraded public land. The major beneficiaries are women as, in an effort to promote women's empowerment, only women were involved.

In addition, local communities learned innovative ideas and skills for earning by mobilizing local resources. School gardens were established in five schools, benefiting 3,553 children. Green patches have been developed and a healthy environment for children created.

## Co-funding partners

BISEP-ST, Forest Task Group, local communities, District Forest and Soil Conservation Offices Bara



Interaction with women for private/public agro-forestry impacts in Bara



A school eco-club member taking care of school garden in Bara

## Background

Traditionally, the Newar, an indigenous group living in the Kathmandu Valley, had a waste management system: they used household waste as manure and fertilizer for crop production. In 1987, the Solid Waste Management and Resource Mobilization Act was passed, authorizing the Solid Waste Management and Resource Mobilization Centre as the responsible body for reorganizing waste management in the Kathmandu Valley. With assistance from the German Technical Cooperation, the government established a communal container collection system, opened Teku Transfer Station and Composting, and managed waste at the Gokarna landfill. When this landfill was closed in 1993 because of disputes, waste began to be dumped on riverbanks and the city suffered from the failure to manage solid waste. Although the government, through its Biogas Support Programme subsidizes the construction of individual biogas plants that use cow dung, there is no subsidy for institutional biogas plants that use municipal waste.

## Main objectives

- To create awareness and motivate local people to reduce, recycle, and manage the waste produced in their households and communities

## Main activities

- Constructing a biogas plant at Budhanilkantha School and a pilot model biogas plant at WEPCO
- Supporting the green circle initiative to recycle paper
- Providing training and door-to-door counseling in solid waste management, distributing buckets, and collecting waste

## Major achievements

A 6 and a 50 cu m biogas plant were constructed on the WEPCO and Budhanilkantha School premises respectively to demonstrate biogas conversion. In the face of the successes of the WEPCO's waste fed metal biogas plants, the government started to provide subsidies for the construction of a number of institutional biogas plants that use household waste. The project is advocating a policy change so that a subsidy or innovative compensation mechanism is provided to institutions that manage solid waste through biogas. A total of 54 such biogas plants have been replicated all over Nepal.

The project also helped expand the collection of household waste and prevented altogether 962.9 tons of waste from going to a landfill every

<b>Project No</b>	NEP/03/07		
<b>Focal Area</b>	Climate Change		
<b>Focal Area</b>	Women Environment Preservation Committee (WEPCO)		
<b>Operational Programme</b>	OP#6 - Promotion and Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs		

<b>Location</b>	Kathmandu,	KMC, LSMC	5
<b>Districts/VDC/Tot. Ward</b>	Lalitpur		
<b>No. of CBOs/HHs M/F</b>	6	1200	1276
<b>Duration</b>	09/05-08/07		
<b>SGP Grant (US\$)</b>	26000		
<b>Cofunding (US\$) Cash and kind</b>	16987	8450	
<b>Total Grant (US\$)</b>	51437		

year. It was calculated that about 7 tons of waste has been generated daily from 1,861 families living in 1,096 houses. Half a ton has been managed at the household level by the women of 400 households, who segregate their own waste at home, producing their own compost. Of the remaining 6.5 tons, 4 tons is dumped in the municipal container and 2.5 tons of waste is used to produce compost. The 500 kg of waste which is not composted (300 kg of plastic and 200 kg of metal) is recycled. Overall, this initiative recycles 912.5 tons of solid waste per annum. Likewise, through green circle initiative, 72 tons of waste paper are collected from member organizations (which include banks, hotels, and other public institutions) every year of which 70% is recycled.

The project supported to set up environment library and training center at WEPCO and institutionally develop WEPCO to manage waste management. WEPCO has served as women-led-demonstration center and more than 50,000 have visited the demonstration site till date. As part of environment campaign, WEPCO has established 47 eco-clubs having more than 500 student members. Recognizing the role of WEPCO in environmental conservation and solid waste management sectors; it was honored with the international award 'SEED Gender Equality Award' in 2011 from UNEP/IUCN/UNDP. Likewise, it has also secured national awards like 'Women Environmental Conservation Award' in 2011 from Ministry of Environment, 'Solid Waste Management Award in 2011 from Ministry of Local Development.

## Co-funding partner

Ministry of Science Environment and Technology, Lalitpur Sub-Metropolitan Committee, Chaudhary Group, Budhanilkantha School



Meals preparing from waste fed biogas



Waste fed biogas under construction in Budhanilkantha School, Kathmandu

# SUSTAINABLE LIVELIHOODS FOR DISADVANTAGED GROUPS BY ENHANCING THE ALTERNATIVE USE OF ENERGY (RICE HUSK STOVES)

### Background

Rice husk is the outer covering of paddy and accounts for 20–25% of its weight. In fiscal year 2007-08, Nepal produced 4,299,246 metric tons of paddy which if milled to produce rice could generate over 945,834 metric tons of rice husks as by product. It has heating value of 13–15 MJ/kg, which is lower than most woody biomass fuels. The husk would be stacked for disposal or thrown to river or burned on road side to reduce its volume.

In Purainiya, Bara, there is no forest nearby and farmers use traditional stoves for which they need to make cow dung cakes and buy fire wood. These stoves produce large amount of smoke whose inhalation results in many respiratory infections, especially among women and children. As rice husk are found in abundance, the project promoted rice husk stove to convert the rice husk biomass waste into fuel for domestic use. The prototype of stove was brought from China.

### Main objectives

- To promote eco-friendly rice husk stove

### Main activities

- Manufacturing, distributing, installing, and repairing rice husk stoves
- Training local iron smiths to make rice husk stoves
- Conducting information dissemination workshops

### Major achievements

Already 772 families have begun to cook using locally available rice husks in new rice husk stoves. The stoves have become so popular that local iron workshops are finding it hard to meet the growing demand. Metal Nepal Pvt. Ltd. and Environment Friendly Energy Company make 300 stoves daily in Bhairahawa. Metal Nepal Pvt. Ltd. alone has manufactured 96,000 stoves, while many other workshops in Bara and Parsa districts manufacture 25-30 stoves per day. Local ironsmith Mr. Bishwonath Thakur manufactures 5-10 stoves per day and, incredibly, sells all of them. The subsidy to the ultra-poor provided by the Bara and Parsa Forest Coordination Committees, Environment Unit of District

<b>Project No</b>	NEP/OP3/2/07/03		
<b>Focal Area</b>	Climate Change		
<b>Grantee</b>	Nature and Human Development Centre		
<b>Operational Programme</b>	OP#5-Removal of barrier to energy efficiency and energy conservation		
<b>Location</b>	Bara	Purainiya	9
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	9	780	1219
<b>Duration</b>	05/07-06/08		
<b>SGP Grant (US\$)</b>	6,671		
<b>Cofunding (US\$) Cash and Kind</b>	N/A	2470	
<b>Total Grant (US\$)</b>	9141		

Development Committee and several NGOs has increased the popularity of the stove, which is even being adopted in nearby Indian markets like Lucknow and in other districts. The local Lohars and other deprived castes of Purainiya village development committee (VDC) have begun to produce stoves. Reyaj Ahamad Ansari, for example, installed a welder machine and a drill in his house and has sold 500 stoves. Each family with a rice husk stove save 5 kg of firewood per day or 1,825kg per year. The 772 stoves installed in Purainiya VDC alone save 1,408 tons of firewood or 140 trees annually, as well as NRs. 648,094.

The project has overcome the technological barrier for the manufacture of rice husk stove. Although the stove looks simple in design, the project team encountered several difficulties during its design. With the support from Sundar Metal Furniture, a Birgunj based private company; the team finally designed the stove and developed methodology and procedure in simplifying the production.

### Co-funding partners

District Forest Coordination Committee, Environment Units/District Development Committee Bara and Parsa, non-governmental organizations and community based organizations



Local women enjoying cooking in rice-husk stove, Parsa



Growing popularity of rice husk stoves led to large scale production in Bhairahawa

A note on the designation of land degradation was introduced in October 2002 after the second GEF assembly in Beijing. Nepal has ratified the United Nations Convention to Combat Desertification and hence is eligible to receive grants under this focal area.

The main causes of land degradation in Nepal are inappropriate land use, mainly rural road construction, unsustainable agricultural practices, overgrazing and deforestation. These practices are most prevalent in the Siwalik and Mahabharat hills. SGP has supported communities in practicing organic farming, shifting cultivation and recycling municipal waste. The following four land degradation reduction projects are described in this chapter

- 1 Indigenous Knowledge and the Role of Fibrous Plants in Environmental Conservation and Livelihoods
- 2 Judibela Community-Based Integrated Watershed Management Project
- 3 Promotion of Organic Fertilizers and bio-pesticides for Land and Environment Conservation and Agro-Entrepreneurship for Agricultural Reforms
- 4 Dahakhani Conservation and Economic Enhancement Project

## Background

The project site along the banks of the Indrawati River in Sindhupalchowk District is rich in natural resources, particularly water, land and forests. The average landholding is about seven ropani (0.33 ha) per family though 11% have less than five ropani (2,625 sq. m). More than 80% of the total land area is dry (without irrigation). Fibrous plants such as agave, sabai grass (*Eulaliopsis binata*), broom grass and bamboo were selected for use in the rehabilitation of eroded land and the improvement of livelihoods because they are readily available and widely used in making ropes, hedgerow, stabilizing landslides, and feeding livestock. Thus, the indigenous knowledge and technology to plant, manage, and process these species were combined for their management and marketing.

## Main objectives

- To improve the livelihoods of indigenous communities and promote environmental conservation through the intensive management of indigenous knowledge-based forestry and agro-forestry practices

## Main activities

- Establishing nursery and planting and managing fibrous plants and multipurpose trees/herbs,
- Managing and developing community and rehabilitating degraded forest
- Documenting indigenous knowledge on the conservation and wise use of fiber and medicinal plants

## Major achievements

More than 40,000 plants, of which nearly 25,000 were fibrous plants, grown from three local community nurseries were planted in community forests, on community wasteland and on private land. About 10 ha of degraded forest and land were rehabilitated and 5 km of stream and newly constructed village road banks was stabilized through agave, sabai, and bamboo plantation.

Indigenous knowledge about the conservation and wise use of fibrous, medicinal and aromatic plants and bamboo was documented and the locals were made aware of the role such knowledge can play in

<b>Project No</b>	NEP/OP3/1/06/10		
<b>Focal Area</b>	Climate change		
<b>Grantee</b>	Community Forestry Research and Training Centre		
<b>Operational Programme</b>	OP#3 Forest ecosystem		

<b>Location Districts/VDC/Tot. Ward</b>	Sindhupalchowk	Sangachowk, Thulosiruwari, Bhotsipa, Sipapokahre, Bhimtar	7
<b>No. of CBOs/HHs M/F</b>	19	154	503 533
<b>Duration</b>	05/06-07/08		
<b>SGP Grant (US\$)</b>	49,823		
<b>Cofunding (US\$) Cash and Kind</b>	1,785		8,733
<b>Total Grant (US\$)</b>	60341		

environmental conservation and management and economic development. These activities helped for the management of indigenous knowledge-based forestry and agro-forestry practices.

The project created more than 25 community based groups, 19 income-generating groups and supported to form six community forest user groups, and enabled each to draft a livelihood improvement plan. More than 150 families have for the first time established small permanent kitchen gardens while six families have started small-scale commercial organic vegetables farming. The latter produced and sold about 2 tons of vegetables over the last years, earning more than NRs. 119,000 (about NRs 25,000 /family) per annum. The 12 deprived families that got three goats each have, on average, almost doubled the number of goats they produce each year and earned an average of NRs. 60,950 annually. Forty families grew watermelons along 5 ha of riverbank, earning NRs.19,650 each.

A revolving fund of NRs. 120,000 was provided to each, Jan Milan Savings and Credit Cooperative and Majhi Bikas Samaj so that these two community institutions could carry forward the project's interventions in a sustainable way.

## Co-funding partners

District Livestock Service Office, District Forest Office, District Soil Conservation Office, Leasehold Forestry and Livestock Programme



Plantation of *Agave americana* for fiber production in village road, Sindhupalchowk



Women participating in the conservation literacy class, Sindhupalchowk

## Background

Judibela village development committee (VDC) is situated at the foothills of the Siwalik (Churia) hills near the Hardiya River and has been badly affected by flooding and riverbank cutting. In 2004 alone, it flooded 33 houses and an irrigation canal, partially damaged 185 households, and dumped sand on 134 ha of cultivable land. Most of the population is poor and has small or no landholdings for agriculture. The forest nearby the VDC has been over-exploited because people are dependent on forest products and because both human and animal population has grown rapidly. The result has been more frequent and devastating floods and higher rates of erosion.

## Main objectives

- To improve the management of degraded watersheds and water runoff-affected areas
- To help reduce the incidence of poverty by increasing livelihood options

## Main activities

- Constructing brush-wood check dams
- Planting seedlings along the river bank and installing improved cooking stoves (ICSs)
- Constructing an irrigation channel and stone check dam
- Constructing conservation pond and fish farming

## Major achievements

The project is successful in engaging local community in managing and reclaiming flooded land in Ban Tol (Judibela-9) along the Hardia river bank. By establishing eight bamboo check dams, the river has been diverted to its original course. This has helped in reclaiming 22 ha of land and minimizing the risk of river water entering the village in the future. In order to further improve the Hardiya watershed around the Ban Tol, 45,000 seedlings were planted on 61 ha of riverbanks, marginal and communal land. Immediately at the bank, amriso and bamboo were

# JUDIBELA COMMUNITY-BASED INTEGRATED WATERSHED MANAGEMENT PROJECT

<b>Project No</b>	NEP/OP3/2/07/02		
<b>Focal Area</b>	Biodiversity and Land Degradation		
<b>Grantee</b>	Centre for Social and Economic Reconstruction		
<b>Operational Programme</b>	OP# 4 & 15 – Mountain Ecosystem and Operation Program on Sustainable Land Management		

<b>Location</b>	Rautahat	Judibela	10
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	12	894	2749
<b>Duration</b>	05/07-05/09		
<b>SGP Grant (US\$)</b>	37,127		
<b>Cofunding (US\$) Cash and Kind</b>	29,607	NA	
<b>Total Grant (US\$)</b>	66,734		

planted whereas other fodder and timber species were planted in plain open land. Grasses and fruit trees were grown in the denuded slopes. The project also supported to install 130 ICS.

In the upstream of Ban tol, an irrigation channel was constructed with 300 m stone dam which has benefitted villages at Judibela-3 and Judibela-1. More than 500 families and 500 bighas (335 ha) of land have directly benefited from the irrigation channel and crop productivity have risen 5%. Land values have increased to NRs. 1,000,000 per 0.67 ha (1 bigha) from just NRs. 400,000.

Further upstream at Kunda Danda, Judibela-1, in Siwalik range a conservation pond was constructed. This has not only promoted groundwater recharge but also provided alternative irrigation facilities in the downstream. Fish farming in the pond provides a handsome income: in the first year the management committee earned NRs. 48,000 from the sale of 400 kg of fish.

## Co-funding partners

District Forest Office, District Soil Conservation Office, District Agriculture Development Office, Plan Nepal, non-governmental organizations and community based organizations



Irrigation canal under construction, Bantol, Rautahat



Community plantation in reclaimed land from flood inside Bantol. Woman community forest, Rautahat

**Background**

Unsustainable land use management and excessive use of chemical fertilizers and pesticides are the main reasons for land degradation in mountain agricultural systems. The promise of a short-term increase in agricultural production with the use of chemical fertilizers and pesticide is attractive but leaves soil more degraded than before. Degradation is most severe on sloping land where soil loss is high due to rain. The project introduced organic farming and bio-pesticides in Parbat District with the expectation that the initiative would conserve the soil and, by producing organic food, improve health. Since initial returns are less, it is necessary to provide farmers with incentives and encouragement. Mudikuwa village development committee (VDC) is rich in lapsi (Chorespondias axillares) fruit trees, but the opportunity to process the fruit locally is wasted at present due to a lack of knowledge, skill, and market.

**Main objectives**

- To support local people in the promotion and use of organic fertilizers and land and environment protection through income-generating activities

**Main activities**

- Producing organic fertilizer and bio-pesticide
- Promoting social enterprise and producing Lapsi products
- Conducting capacity-building training for providing Lapsi candy processing and marketing

**Major achievements**

More than 200 families were organized into self-reliant groups to encourage independent saving and, after getting appropriate development training, have mobilized the funds to engage in agro-based income-generating activities, including crop and vegetable

<b>Project No</b>	NEP/OP3/1/06/06		
<b>Focal Area</b>	Land degradation		
<b>Grantee</b>	Parbat Community Development Society		
<b>Operational Programme</b>	OP#15-Operational Program on Sustainable Land Management		

<b>Location</b>	Parbat	Mudikuwa	6
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	16	340	495
<b>Duration</b>	04/06-07/08		
<b>SGP Grant (US\$)</b>	45,000		
<b>Cofunding (US\$) Cash and kind</b>	27,000	N/A	
<b>Total Grant (US\$)</b>	72,000		

production. The project supported to establish two social enterprises namely Mountainous Organic Products Processing and Training Centre and Community Food Processing Udhog. This has paved road to market lapsi (Chorespondias axillares), which was otherwise not valued in the village.

For the promotion of organic farming, more than 30% of group members produce organic fertilizers and bio-pesticides as local resource-based enterprises; not only do the self-reliant groups generate income but their members now have local job opportunities. Two wards of Madikuwa VDC have been declared organic villages (chemical fertilizer and pesticide-free areas).

Through a relief support fund, children from ultra-poor families receive scholarships, uniforms, and stationery so that they can attend school.

**Co-funding partners**

Agri-business and trade promotion multipurpose cooperative, British Embassy, local communities



Displaying food products (lapsi pickle)



Drying the agri product in solar dryer in Community Food Processing Cottage Industry, Mudikuwa, Parba

**Background**

Like many mountain ecosystems around the globe, Nepal’s mountain ecosystem in the Mahabharat Range is also threatened. Dahakhani area in Chitwan which lies in the Mahabharat range is a sensitive area located immediately above Chitwan National Park and serving as the Narayani River watershed. The forest ecosystem is well represented by sal (*Shorea robusta*) and its associates. But due to the ill-practice of girdling of sal trees to kill and then illegally harvest them for timber has threatened the mountain ecosystem. The resultant deforestation has been extensive and without sufficient vegetative cover, soil fertility has declined and the water cycle has been affected over the past decade.

**Main objective**

- To improve the livelihoods of local people through participatory bamboo plantation and environmental management

**Main activities**

- Carrying reforestation and land and flood plain rehabilitation using bio-engineering techniques like bamboo plantation
- Constructing micro projects like irrigation and drinking water
- Conducting capacity-building trainings in soil conservation and watershed management, and supporting income generating activities.

**Major achievements**

Out of the total 250ha of land of Dahakhani forest, the project has reforested in the degraded and naked part of the forest land through plantation. The project also supported for the rehabilitation of 135 ha of land in Khetbari area through the plantation of 12,000 bamboo trees in a strategic location. The construction of brushwood dams through bioengineering techniques helped to rehabilitate 47 ha of land in Khetbari area. The 65 improved cooking stove (ICS) installed will bring savings of 142.3 tons of firewood and 200.07 tons of CO2 per year, thereby mitigating global warming and climate change.

The project’s small supports for small scale projects have actually made a big difference. In Dahakhani-7, Pipaltar drinking water system (of 3.2

<b>Project No</b>	NEP/05/05		
<b>Focal Area</b>	Land degradation		
<b>Grantee</b>	Youth Society Nepal		
<b>Operational Programme</b>	OP#15 – Operational Program on Sustainable Land Management		

<b>Location</b>	Chitwan	Dahakhani	N/A
<b>Districts/VDC/Tot. Ward</b>			
<b>No. of CBOs/HHs M/F</b>	14	590	1780
<b>Duration</b>	10/2005 - 9/2007		
<b>SGP Grant (US\$)</b>	50,000		
<b>Cofunding (US\$) Cash and Kind</b>	39		49,838
<b>Total Grant (US\$)</b>	99,877		

km length) benefiting 50 families constructed with the resources generated from DDC Chitwan, Pipaltar community and Triveni Bikash Bank. A 2 km long road that links Simaldhap to Khetbari is now serving more than 500 families. To contribute in the environmental sanitation, 40 toilets have been constructed in Dahakhani-7, Khetbari. Syangdi Micro Irrigation scheme, which was constructed through 180 days labour contribution, in Dahakhani-3, Syangdi is now benefitting 27 families by ensuring irrigation in 35 ha of land. Similarly, the improvement of small canal at Dahakhani-7, Khetbari, has ensured irrigation for 23 ha of land.

The project helped in mobilizing 14 community based organizations resulting a saving of Rs 411,418 which is being used for income generating activities like animal husbandry, vegetable farming and horticulture. To scale up these income generating activities, Rs 1,555,134 was supported from the project as seed grants whereas Rs 4,548,536 (roughly 66%) was generated from the VDC, DDC, local and district government agencies. During the project’s tenure, altogether, NRs. 8,500,000 has been earned through the sale of agricultural products, livestock, and fruits.

**Co-funding partners**

Dahakhani VDC, Ranikhola Community Forestry User Group, District Drinking Water and Sanitation Office-Chitwan, District Forest Office



Construction of drinking water system in Dahakhani, Chitwan



A local women in her kitchen garden, Dahakhani, Chitwan





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