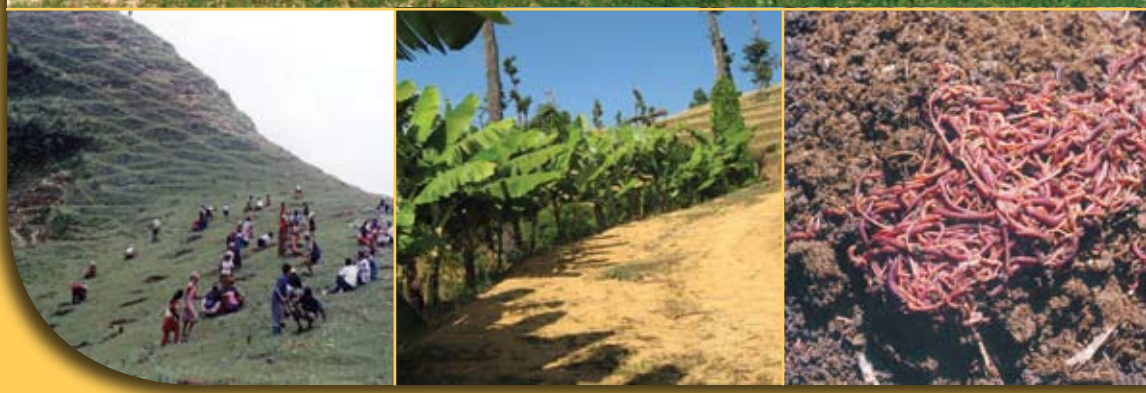
The GEF Small Grants Programme Nepal

PROJECT PROFILES

PART I



SGP The GEF Small Grants Programme

PRAGATI

SGP The GEF Small Grants Programme

Project Profiles (Part I)

Fist Edition December 2008

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Cover Page 1. Rupa lake in Kaski; 2. Group meeting in Makwanpur; 3. Drying handmade paper in Baglung;
4. Saras crane in Mustard field in Lumbini; 5. Plantation in Panchase, Kaski;
6. Roadside banana plantation, Makwanpur;
7. Vermis (earthworm) farming in Gagalphedi, Kathmandu

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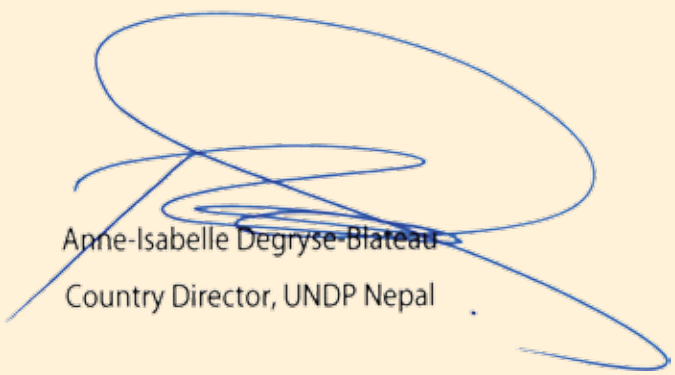
FOREWORD

The GEF Small Grants Programme (SGP) of the United Nations Development Programme in Nepal provides grants upto US$ 50,000 to community based organizations and non-governmental organizations to address global environmental problems while promoting the livelihoods of the poorest and vulnerable communities such as indigenous Chepangs in Makwanpur and nomadic Rautes in the mid-western hills. Since its inception in 1998, SGP has supported many small innovative projects ranging from transforming the forest killer weed Banmara into bio-briquettes to the production of marketable crochet knit bags, thanks to the introduction of solar home lighting systems, to vermin compost and bio-pesticide production.

All of these initiatives also promote climate change adaptation and disaster risk reduction, such as the installation of over 6,200 Solar Tuki (lamp) in 22 districts which saves 223 kilo liters of kerosene which in turn saves emission of 350 tons of CO2 per year. Looking at the impacts and effectiveness of the programme it has been proven that "small can indeed be beautiful"'

I would like to thank Small Grants Programme team for compiling this inspiring and important set of selected SGP project profiles which will help disseminate the lessons and these tested innovative approaches and facilitate their replication, like the bio-briquettes production from Banmara which has by now been replicated in 37 districts.

I hope that the beneficiary communities will in time reach out to other communities to share with them their newly acquired acknowledge and successes in a growing chain of solidarity and transformation.



Anne-Isabelle Degryse-Blateau

Country Director, UNDP Nepal

PREFACE

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

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

Since its inception in late 1998, SGP Nepal has funded over 92 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 profile of selected SGP projects which were implemented during 1998-2007. 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 in subsequent volumes.

We would like to thank Mr Vivek Dhar Sharma and Pragati Nepal Team especially Mr Dhruba Gautam and Ms Maneesha Rajbhandari for their effort in compiling information regarding individual projects and printing in this form. Thanks are also due to Mr Basanta Subba 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 through conserving the local environment.

GEF Small Grants Programme

ACRONYMS

AAN	Action Aid Nepal
AEPC	Alternative Energy Promotion Centre
ANSAB	Asia Network for Sustainable Agriculture and Bio-resources
BSP	Biogas Support Programme
CBD	Convention of Biological Diversity
CBOs	Community-Based Organizations
CBR	Community Bio-diversity Register
CCPI	Community Cottage Paper Industry
CETF	Community Environment Trust Fund
CF	Community Forest
CFUG	Community Forest Users Group
COPE	Community-Owned Primary Education
DADO	District Agriculture Development Office
DDC	District Development Committee
DEO	District Education Office
DFDP	Decentralized Financing Development Programme
DFID	Department For International Development
DFO	District Forest Office
DSCO	District Soil Conservation Office
DUDBC	Department of Urban Development and Building Construction
FCC	Forest Conservation Committee
FSC	Forest Stewardship Council
GEF	Global Environment Facility
GO	Government Organization
GoN	Government of Nepal
HELP	Home Employment and Lighting Package
HHs	Households
HLF	Himalayan Light Foundation
ICIMOD	International Centre for Mountain Development
ICS	Improved Cooking Stove
IGA	Income Generating Activity
INBAR	International Network for Bamboo and Rattan
IPM	Integrated Pest Management
IUCN	The World Conservation Union
JICA	Japan International Cooperation Agency
LFP	Livelihood and Forestry Programme
LGP	Local Governance Programme
LI-BIRD	Local Initiatives for Bio-diversity, Research and Development
MEDEP	Micro Enterprises Development Programme
MoFSC	Ministry of Forest and Soil Conservation
MoPE	Ministry of Population and Environment
N/A	Not Applicable or Available
NARC	Nepal Agriculture Research Council
NGO	Non-Governmental Organization
NSC	National Steering Committee
NSCFP	Nepal Swiss Community Forestry Project
NTB	Nepal Tourism Board
NTFP	Non Timber Forest Product
OP	Operational Programme
PDDP	Participatory District Development Programme
PFE	Panchase Forest Ecosystem
ppb	Part per Billion
PSBS	Prototype Solar Boiling System
RCIW	Rural Community Infrastructure Work Programme
REDP	Rural Energy Development Programme
RRN	Rural Reconstruction Nepal
SALT	Slopping Agriculture Land Technology
SCDP	Sustainable Community Development Programme
SDC	Swiss Development Cooperation
SGP	Small Grants Programme
SHS	Solar Home System
SIMI	Smallholders' Irrigation Market Initiative
SRI	System of Rice Intensification
STN	Seed Tree Nepal
TRPAP	Tourism for Rural Poverty Alleviation Programme
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
US$	US Dollar
VDC	Village Development Committee
WECS	Water and Energy Commission Secretariat
WHO	World Health Organization
WI	Winrock International
WLED	White Light Emitting Diode
WWF	World Wildlife Fund

CONTENTS

The GEF Small Grants Programme of UNDP

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, 101 countries participate in SGP having ratified the conventions on biological diversity and climate change. The funding to date comprises US$ 247.2 million from GEF and US$ 242.8 million from other partners in cash or in-kind equivalents. The maximum grant amount per project is US$ 50,000, but averages around US$ 20,000. Grants are channeled directly to CBOs and 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 non-governmental organizations (NGOs), community-based organizations (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

Thy 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 persistent organic pollutants 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, democracy, flexibility, and transparency are cornerstones of the SGP approach. The programme encourages and supports the participation of communities, local people, NGOs, CBOs (community-based organizations), and other stakeholders in all aspects of programme planning, design and implementation:

- The formulation of country programme strategies;
- 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.

The flexible decentralized structure of SGP encourages maximum country and community-level ownership and initiative.

Focal Areas

The Global Environment Facility's Small Grants Programme (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 elimination of 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. Land degradation, particularly habitat destruction and deforestation as they relate to three focal areas is also eligible for funding.

Operational Programmes

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

Biodiversity

Projects are funded that support or promote the conservation and sustainable use and management of biodiversity in ecosystems (including agrobiodiversity and agroecological systems).

- OP1 - Arid and Semi-Arid Ecosystems
- OP2 - Costal, 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.

- 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.

- 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).

- OP15 - Operational Program on Sustainable Land Management

POPs - Persistent Organic Pollutants

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 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.

- 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 reconcile 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 National Steering Committee (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 secretary to the National Steering Committee (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.

The GEF-SGP Nepal Programme

The SGP was launched in Nepal during 1993/94 for a short period (about one year). It resumed in full swing only in late 1998. By 2007, GEF-SGP had provided support to 92 projects in three phases - Phase I, II, and III with 2, 50 and 40 projects respectively. The third phase of SGP Nepal was started in 2005 and ended in 2007. The fourth operational phase (2008-2010) of SGP has started from July 2008.

Geographical Coverage

The SGP projects are spread across five development regions, covering 39 districts, 104 Village Development Committees (VDCs), and 9 wards of five Municipalities. The project coverage is given in table 1:

Table 1: Geographical Coverage

Development Regions	Number of Districts	Number of Municipalities	Number of VDCs
Eastern	7	1	10
Central	11	1	34
Western	9	3	28
Mid-western	7	-	15
Far-western	5	1	17
Total	**39**	**5**	**104**

Status of Grants

SGP support includes 83 Full Grants and 9 Planning Grants, out of which 36 are ongoing projects and 56 have already been phased out.

Majority of the focal area projects are related to biodiversity conservation (45) followed by climate change (30) and land degradation (10). Apart from these, 7 more projects are implemented on cross-cutting themes e.g., capacity building, documentation, participatory monitoring and evaluation, and knowledge management.

SGP has already disbursed a total of US$ 3,244,211 in three phases, out of which the amounts allocated to biodiversity conservation, climate change, land degradation and capacity building are US$ 1,548,251, US$ 1,162,830, US$ 331,352 and US$ 201,778 respectively.

Cofunding

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$ 3,680,415 has been generated. Of which, US$ 2,970,513 is in cash and US$ 709,902 in kind equivalent.

BIODIVERSITY CONSERVATION

SGP supports projects that promote the conservation and sustainable use of biodiversity in ecosystems (including agrobiodiversity and agroecological systems). In order to be eligible for grants under this focal area, Nepal has ratified Convention of Bio-diversity (CBD). Priority is given to the project located in areas that contain globally significant biodiversity. Such sites may include ecosystem or constituent species threatened or at risk and a hot spot. The sites may also contain habitats that are important to migratory species or have a significant presence of endemic species.

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

In Nepal, SGP supported projects under biodiversity conservation include conservation of important forest and wetland ecosystems and such as Panchase Forest, Gwalekh Forest, Kakrebihar Forest, Ghodaghodi lake (Ramsar site), Rupa lake, Jakhera lake and Taudaha lake. In species conservation, the projects include conservation of Dolphin, Saras crane and commercially important non timber forest products and aromatic plants. Two of the projects also support in policy formulation such as maintaining community biodiversity registers and formulating local and national forest certification standard for community forestry. Following 15 of the biodiversity conservation projects have been briefly described in this chapter;

1 Dolphin Conservation Project
2 Panchase Biodiversity Conservation Project
3 Community Biodiversity Register for Acquisition and Utilization of Biodiversity
4 Sustainable Development Project
5 Community Forestry and Environment Conservation
6 Jakhera Wetland and Chure Conservation Project
7 New Distillation Units for Sustainable Management and Processing of NTFP
8 Alpine Biodiversity Conservation Project
9 Gwalek Watershed and Biodiversity Conservation Project
10 Kakrebihar Biodiversity and Culture Conservation
11 Integrated Human Ecology Project
12 Promoting Community Managed Wetland to Uplift the Livelihood of Rural Farmers and Biodiversity Conservation
13 Taudaha Freshwater Ecosystem Management for Sustainable Development
14 Forest and Environment Conservation Project
15 Gwalek Biodiversity Conservation Project

Project No	NEP/03/06
Focal Area	Biodiversity
Grantee	Dolphin Conservation Centre (DCC)
Operational Programme	OP#2 – Coastal, marine and freshwater ecosystems

Location Districts/ VDC/Tot. Ward	Kailali	Bhajani		6
No. of CBOs/HHs M/F	3	150	N/A	N/A
Duration	6/2004 - 2/2005			
SGP Grant (US$)	7,000			
Cofunding (US$) Cash and Kind	10,584		8,450	
Total Grant (US$)	26,034			

Background

The Gangetic river dolphin (*Platanista gangetica*) is found in the Karnali river system of Nepal. But this endangered freshwater dolphin locally called "Swasu" is disappearing fast from the river system due to various anthropogenic activities such as indiscriminate fishing, construction of high dams without fish ladder and river pollution. During the rainy season, this highly intelligent mammal or 'the son of river' is seen swimming around the swollen river of Kanda, Patharia and Mohana – the tributaries of the Karnali river. But very few people believed there were dolphins in Nepal.

Main Objectives

Conservation of dolphin by increasing awareness and addressing livelihood issues.

Main Activities

Formation of eco-clubs, Dolphin sub-centers and CBOs, training programmes to strengthen group efforts, preparation and publication of brochures and other awareness materials for dissemination to raise awareness of the importance of dolphin conservation among tribal fishermen such as Raji, Majhi and Tharu, and local schoolchildren, collection of catapults to dissuade cattle herders from hunting, initiation of 'goat and boar for all' campaign, encouraging community members in afforestation activities.

Major Achievements

The project has been an eye opener for critics who did not believe that Nepal has dolphins. For the first time, Dolphin Festival was organised, where more than 5000 people participated. Among the participants were journalists who had for the first time seen the dolphin from a very close range. In the grassroots, the project formed 5 new Dolphin conservation sub-centres and 9 new eco-clubs, enhancing environmental stewardship to protect the riverine mammal. The project also initiated the first ever trans-boundary interaction meeting with Indian conservationists in Dudhawa National Park and Lukhnow in India regarding the conservation of Dolphin.

The Dolphin Conservation Centre with the support from the project also published a book in Nepali entitled "Dolphins of the River Mohana" written by Mr Bhoj Raj Shrestha. Mr Shrestha is a dedicated campaigner of wildlife conservation and has initiated the catapult collection campaign to discourage killing of birds. He collected over 3000 catapults. Eco-club members from local schools are helping him in collecting more catapults. This earned him the nickname "Catapult Father" affectionately given by local students. He has established a mini bird sanctuary in his own private land. With the implementation of dolphin conservation project, the hunter-turned-conservationist, has directed his focus to dolphin conservation - thus earning yet another nickname "The Dolphin Father". A survey conducted by the centre recorded 131 dolphins in the swollen river of Mohana. However, wildlife scientists are still not convinced with this number. The project also erected a view tower to view dolphins and provided support to 86 households to rear pig and goat. The beneficiaries of the support mostly include members from the Rajhi and Majhi communities - the indigenous fishermen who live near the river.

Cofunding Partners

WWF , CBOs and Schools.

Cultural programme organized during exhibition of Dolphin conservation awareness activities.

Gangetic Dolphin in the Mohana river.

PANCHASE BIODIVERSITY CONSERVATION PROJECT

Project No	NEP/03/04			
Focal Area	Biodiversity			
Grantee	Machhapuchre Development Organization (MDO)			
Operational Programme	OP#3 - Forest ecosystems			
Location Districts/ VDC/Tot. Ward	Parbat/ Syangja/ Kaski	Arther/ Bansing/ Bhadure-tamagi		19
No. of CBOs/HHs M/F	56	1937	422	1253
Duration	6/2004 - 6/2006			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	46,651		33,434	
Total Grant (US$)	130,085			

Background

The Panchase forest is an important block of forest in the mid-hills of the country. Although the forest covers an approximate area of 10-12 Km^2 and is spread over Kaski, Parbat and Syanja district of West Nepal, it is not connected with any protected areas. The Pachase Forest Ecosystem (PFE) is a major source of water for agricultural and domestic use in the surrounding area and a primary source area for a number of local wetland including Phewa lake. Furthermore, PFE is rich in biodiversity and is a home to a number of important wildlife species including the Himalayan black bear and common leopard. The forest also harbors rare and endemic plants (orchids, rhododendron). Both the Hindus and Buddhists consider the Panchase forest and the Panchase mountain peak (2509m) as sacred religious sites.

Main Objectives

Conservation and management of Panchase Forest ecosystem, promotion of ecotourism and alternative energy technology, adoption of green technologies for sustainable livelihood with diversified income generation activities.

Main Activities

Preparation of Tourism Master plan with trekking routes, demarcation of Panchase forest, facilitation for community forest handover, plantation and nursery management, promotion of NTFP, installation of ICS and solar home system, establishment of cultural museum, initiation of off seasonal vegetable farming, beekeeping and plantation of coffee.

Major Achievements

The project prepared GIS map of Panchase area and supported Nepal Tourism Board (NTB) develop a tourism master plan. The master plan has identified important trekking (tourism) routes, religious sites, natural landscapes and 5 sacred peaks of the area as tourist destinations. The project also facilitated handing over of 12 community forests conserving 867ha of forested land, benefiting 1138 hhs. The forest inventory carried out with the support of the project documented 300 plant species including 100 NTFPs and 107 species of orchid. Around 35,000 saplings were planted in the Panchase area. The saplings were produced in the three plant nurseries established with the support of the project. The installation of 978 ICS and 100 solar home systems in the project area were aimed to reduce biotic pressure in the forest.

The project provided training to 107 participants on off-season vegetable farming and as a result of that the local farmers have experience of earning a total of Rs 1,700,000 by selling vegetables during the project period. Beekeeping and coffee plantation have also helped local community members to make steady income. The project also provided support for a number of infrastructure development initiatives for the promotion of tourism activities such as the setting up of a museum showcasing the cultural heritage of indigenous Gurung people, improving trekking trails, and the construction of view tower and notice board for tourism information.

Cofunding Partners

Japan International Cooperation Agency (JICA), LFP/DFID, NTB, Panchase Area Users Development Committee, Tara Gaoun Development Board, UNICEF, VDCs, DDCs and CBOs.

Off season vegetation is a steady source of income for the villagers.

Community plantation in Panchase area.

COMMUNITY BIODIVERSITY REGISTER FOR ACQUISITION AND UTILIZATION OF BIODIVERSITY

Project No	NEP/02/10
Focal Area	Biodiversity
Grantee	Local Initiatives for Biodiversity, Research and Development (LI-BIRD)
Operational Programme	OP#13 - Conservation and sustainable use of biological diversity important to agriculture

Location Districts/ VDC/Tot. Ward	Kaski	Begnas, Rupakot Leknath		6
No. of CBOs/HHs M/F	17	954	445	630
Duration	12/2002 - 3/2005			
SGP Grant (US$)	40,000			
Cofunding (US$) Cash and Kind	24,481		3,191	
Total Grant (US$)	67,672			

Background

Nepal, as a signatory nation to Convention of Biodiveristy (1992) and member of World Trade Orgnisation (1995), had to register and patent for all biological products and their processes. The country had to protect her bio-resources, local knowledge, skill and technologies by the end of 2006. For that reason the Community Biodiversity Registration (CBR) was equally concerned with the documentation of local species along with the associated knowledge and practices. CBR refers it as "a record kept in a paper or electronic format by community members, of the genetic resources (landraces) in community, including information on their custodians, passport data, agro-ecology, cultural and use values".

Main Objectives

Document the status and local value of biodiversity along with associated knowledge, strengthen local people's livelihood strategies by increasing access to information and resources, create awareness for sustainable utilization of biodiversity at local (community), regional and national levels, capacity building and empowerment of working partners including farm communities.

Main Activities

Selecting species for registration, implementing registration, production and marketing of valuable crop varieties, local fish and forest species, revitalizing farmers' co-operatives, introducing netting to protect endangered species like wild rice, fish and lotus, support for forest nursery of valued plant species, organize diversity fair and initiation of community seed banking.

Major Achievements

The project recorded valuable information on the biological resources used by the communities and demonstrated the social, economic and environment benefits that could be generated from the sustainable management of local biodiversity. The community had maintained a total of 17 CBRs of 447 priority species/varieties of three broad groups of biodiversity viz. crops and horticulture, NTFPs and forest biodiversity, and wetland diversity. The project initiated two new approaches or community tools to facilitate the CBR documentation process. The "Diversity fair" where farmers display the biological diversity, served as participatory avenue for farmers to select species for registration. Likewise, "Four-cell Method" was also introduced for diversity expansion, in -situ conservation and/or marketing of selected species for CBR. Local communities used CBR as a community decision making tool to value add and pilot 21 different community-based biodiversity management plan and income generation activities such as cocoyam (Maseura) making, beekeeping, goat keeping, selling local seeds, making bio-pesticide, marketing of medicinal herbs and fish farming.

In order to gain control over their bio-resources and associated traditional skills/ knowledge, all farmers in project area jointly declared the biodiversity they are associated with by endorsing the document on bio-wealth of the Rupa and Begnas Lake area.

The CBR committee was set up as a common forum of farming communities for the continuance of the management of community plans. Skill enhancement and empowerment initiatives such as training/ orientation, exposure visits and participation in joint field visits were also carried out to enhance local capacity for the management of CBR activities.

Cofunding Partners

CBOs, Development Fund Norway, International Plant Genetic Resource Institute, LI-BIRD, NARC, DDC, Lekhnath Municipality and VDCs.

Transferring Traditional Knowledge from older generation to younger generation. A grand-daughter is helping her grandpa to maintain CBR.

A magnificent view of Rupa wetland after conservation.

Background

The pristine Ghodaghodi Lake Area is spread over an area of 2,563 ha of forests and 14 lakes and ponds. The landscape is remarkable for its rich biodiversity and serves as a corridor between the Terai plains and the Siwalik hills. The lake system consists of fingerlike projections and is characterized by different wetland types including ox-bow lakes, swamps, marshes, reservoirs, ponds and paddy field. The forest area comprises tropical deciduous Sal (*Shorea robusta*) and *Terminalia tomentosa* and mixed deciduous riverine forests. This remarkable ecosystem provides home to 30 species of mammals including the endangered Tiger (*Panthera tigris*), Hispid Hare (*Caprolagus hispidus*), smooth coated otter (*Lutrogale perspicillata)*, common otter (*Lutra lutra*), swamp deer (*Cervus duvaucelli*), clouded leopard (*Neofelis nebulosa*) and the sloth bear (*Melursus ursinus*). It is also inhabited by 140 species of birds including the threatened vulture, adjutant stork and the near-threatened Indian spotted eagle. Majority of the inhabitants of this area are the indigenous Tharus - one of the most underprivileged communities in the lowlands of Nepal. The lake area is also an important religious site with a shrine dedicated to Ghodaghodi – a deity. Local people celebrate a traditional festival called Agan Panchami in December by worshipping and offering animals to the deity and take holy dip in the lake. The lake is severely affected by eutrophication and other anthropogenic causes such as rapid deforestation and overgrazing which have exerted negative impact on the biodiversity.

Main Objectives

Biodiversity conservation through local capacity building for sustainable management of local forest resources, wetlands and sub-watersheds.

Main Activities

Formation of CBOs, support for biogas and ICS installation, management of Ghodaghodi lake and its watershed area, promotion of Non-timber Forest Products (NTFPs) and construction of Irrigation canals and check dams, adult literacy on environment management, income generation activities (vegetable farming, poultry, goat keeping, bee keeping and fish farming).

Project No	NEP/95/G52- 1 (Phase I)			
Focal Area	Biodiversity			
Grantee	Sustainable Development Facility (SDF), Kailali			
Operational Programme	OP#3 Forest ecosystem Freshwater ecosystem			
Location Districts/ VDC/Tot. Ward	Kailali	Kotatulsipur, Sandepani, Ramsikharjhilla		5
No. of CBOs/HHs M/F	68	2101	1631	581
Duration	12/1998-12/2000			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	30,939		11,556	
Total Grant (US$)	92,495			

Major Achievements

The project succeeded in motivating community members in the conservation of the Ghodaghodi wetland system. These CBOs themselves set the norms for conservation activities, which included a ban on fishing in the lakes, livestock grazing in the lake site and encroachment in the wetland area. By mobilizing the CBOs, the project initiated the plantation in 66 ha. of land which included open lands adjoining lake side and open forest areas. The CBOs were also mobilised in promoting NTFPs such as Lemongrass, Citronella, Palmarosa and Black piper in 1.4 ha of community forest land. The project implemented both capacity building and income generating activities, which included both agro and non-agro-based enterprises such as vegetable farming, small scale poultry farming, retail shops, goat rearing beekeeping and fish farming. The project also provided support to CBOs for the installation of 53 toilet-attached Biogas plants and developed Prithvipur as a model Eco village having 16 biogas plants, well-managed pig huts, clean roads with properly managed manure pits. Likewise 52 improved cook stoves (ICS) were also installed with the objective of developing Chherahi as model ICS village. The CBOs also constructed irrigation canals and check dams facilitating irrigation in 72 ha of land, whereas the construction of small ponds for fish farming provided steady income to 128 indigenous Tharu community members.

Cofunding Partners

AEPC, DCC, VDC, CBOs, Poverty Alleviation Programme, Safer Motherhood Programme.

A glimpse of Ghodaghodi Lake

Community participation in awareness program

Project No	NEP/95/G52, 2 (Phase -I)			
Focal Area	Biodiversity			
Grantee	Samudayik Digo Bikash Karyakram (SADIKA)			
Operational Programme	OP#3 Forest ecosystem			
Location Districts/ VDC/Tot. Ward	Salyan	Kalimati Rampur, Kalimati Kalche , Kaprechaur		8 VDC
No. of CBOs/HHs M/F	55	1,061	808	310
Duration	12/1998-12/2000			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	10,367		11,227	
Total Grant (US$)	71,594			

Background

Salyan is one of the hardest conflict and food deficient districts in the Mid-west Development Region of the country. Kachuwa Pond (1.5 ha) in Kalimati Rampur is an important wetland because it harbours around 200 threatened Indian black turtles (*Melanochelys trijuga indopeninsularis*). This species of turtle nearly disappeared from the mid-hills of Nepal. Although the pond shrinks to 0.3 ha during the dry season, it provides ideal habitat to the threatened species. The pond is also sacred to the Hindus. Hence, the area is important and warrants immediate intervention to conserve the turtle and manage the ecosystem through a participatory approach by integrating livelihood issues.

Main Objectives

Conserve the wetland and improve hill ecosystem through the development of sustainable and self-governing community-based organizations.

Main Activities

Wetland conservation, protection of springs, registration and management of community forestry, establishment of community nurseries, community plantation, installation of ICS, construction of toilets and drinking water facilities, formation of CBOs, capacity building, awareness generation, micro credits and income generation activities.

Major Achievements

Like political, social, economic and all other aspects of national life, the project activities also could not remain unaffected by the insurgency in the district. Despite hardships and uncertainties, the locally acceptable conducive working approach and full support from the community enabled project to implement its activities. With local support, the project succeeded in involving 80% of households (HHs) on settlement basis and was able to mobilize them. The project encouraged CBOs to implement rotational grazing for sustainable harvesting in the forested areas, manage multi-purpose nurseries, and carried out plantation in 15 ha of land. Likewise, the project facilitated handing over of two community forests to the local communities, benefiting 795 households (HHs) of the area. In order to conserve the Kachuwa pond, community members were mobilized to plant trees of different local species and ensured the growth of vegetation around the pond. They also constructed a gabion wired check dam to retain water in the pond. The project support included installation of 127 Improved Cooking Stoves (ICS) and 13 biogas plants.

The social development activities included protection of 12 spring sources and implementation of 7 drinking water schemes. A wooden bridge was also constructed in the project area to facilitate local inhabitants. The project also set up a revolving fund at the VDC level named Community Environment Trust Fund which was successfully mobilized to initiate micro-enterprises as part of economic development activities. The fund was mobilized 2.4 times and the repayment rate was also found satisfactory.

With the lessons learned from the project, SGP assisted Sustainable Community Development Programme (SCDP) of UNDP implemented by National Planning Commission, in formulating the Sustainable Development Agenda for Nepal. The working modality adopted by SGP project and SCDP was reflected as one of the best practices in 10th Five-year Plan of the (National Planning Commission) GoN.

Cofunding Partners

AEPC, CBO, DDC, VDC.

A Community forest in Salyan

Saving and Credit group meeting

JAKHERA WETLAND AND CHURE CONSERVATION PROJECT

Project No	NEP/01/02
Focal Area	Biodiversity
Grantee	Community Sustainable Development Organisation (CSDO)
Operational Programme	OP#2 - Costal, marine and freshwater ecosystems, forest ecosystem.

Location Districts/ VDC/Tot. Ward	Dang	Sonpur		9
No. of CBOs/HHs M/F	47	1027	634	434
Duration	4/2001 - 12/2003			
SGP Grant (US$)	40,000			
Cofunding (US$) Cash and Kind	43,581		9,020	
Total Grant (US$)	92,601			

Background

Jakhera wetland lies at the foothills of Chure hills in Sonpur VDC of Dang, west Nepal. This wetland covers an area of 7 ha of land and is an important wintering ground for several species of migratory birds. Rapid siltation from the fragile landscape of the Chure hills has reduced the size of the lake. The DDC regards this wetland as a good picnic spot and it could be developed as a tourism area. District Soil Conservation Office (DSCO) was also involved in protecting this rapidly disappearing wetland. Besides supporting valuable biodiversity, the wetland also serves as a water storage body for irrigation for the people living downstream. Members of the local indigenous Tharu community also fish in the wetland.

Main Objectives

Improve hill and wetland ecosystem through the mobilizations of self-governing CBOs and ensure sustainable livelihoods of local people.

Main Activities

Biodiversity inventory, wetland and its watershed conservation, develop picnic spot and boating, fish farming, plantation, ICS and biogas construction, capacity building.

Major Achievements

The SGP initiated the formation of a district level Jakhera Wetland and Chure Conservation Coordination Committee under the chairpersonship of the DDC. Its members consist of representatives from the line agencies of the district. The Committee prepared a joint work plan for the protection of Jakhera and the fragile ecosystem of the Chure hills. After demarcating the wetland area, a 350m long barbed-wire fence was constructed around the western and southern boundary of the lake to prevent potential encroachment. The project also initiated the construction of a check dam to store more water in the wetland. In the same vein, the CBOs initiated the practice of rotational grazing in the watershed area of the lake and installed 23 biogas plants and 68 ICSs with the objective of minimizing biotic pressure in the local forest. It also provided support for the establishment of a temporary nursery and over 5,000 seedlings produced by the nursery have been planted in the watershed area. According to a biodiversity survey, the area supports 48 species of trees, 14 species of shrubs, 19 species of herbs, 9 species of climbers and 19 species of medicinal plants. Likewise, the wetland is home to 17 species of mammals including common leopard and himalayan black bear, 31 species of birds including 5 species of migratory birds, 15 species of reptiles, 8 species of fishes, and 21 species of invertebrates.

After cleaning the wetland, the members of CBOs have begun fish farming in the pond. The project also developed the site as a picnic spot and constructed entry gate with ticket counter and provision of boating to attract more picnic lovers. With the steady income generated from fish farming and service charge from picnic spot, the community members are involved in the conservation of the wetland.

The project was also successful in mobilizing other resources. With the support from Rural Reconstruction Nepal (RRN) and Rural Community Infrastructure Work Programme (RCIW), a dirt road that links the wetland with the highway has been graveled.

Cofunding Partners

CBO, DSCO, Fish Development Centre, RCIW, DDC, VDC, RRN and SCDP

Collecting fuelwood is regular chores for the villagers.

Boating in Jakhera for eco-tourism promotion

Project No	NEP/04/11
Focal Area	Biodiversity
Grantee	Deudhunga, Multipurpose Cooperative (DMC),
Operational Programme	OP#3 - Forest ecosystems

Location Districts/ VDC/Tot. Ward	Dolakha	Marbu, Suri, Lankuri		17
No. of CBOs/HHs M/F	24	250	N\A	N\A
Duration	4/2005 - 3/2006			
SGP Grant (US$)	33,378			
Cofunding (US$) Cash and Kind	24,144		345,04	
Total Grant (US$)	92,026			

Background

Nepal earns a significant amount of foreign currency by exporting Medicinal and Aromatic Plants (MAPs). But Nepal can earn even more from essential oil extracted from these MAPs. The Deudhunga multipurpose cooperative, in Dolakha, is currently extracting essential oils from wintergreen (*Gaultheria fragrantisima*), juniper (*Juniperus communis*/*Juniperus indica*) leaf and berry, mugwort (*Artemisia vulgaris*), silver fur (*Abies spectabilis*), anthopogan (*Rhododendron anthopogan*) and calamus (*Acorus calamus*) and selling them in the international market. However, the cooperative is using iron lining distillation vessels, which produces low quality essential oils. Thus the project aims to install 3 steel-lining distillation units with boilers at different clusters in Dolakha which not only reduce the amount of fuelwood but also help produce quality essential oils for international market.

Main Objectives

Initiate the processing and sustainable harvesting of NTFPs such as wintergreen, juniper leaf and berry, abies, anthopogan, artemisia and calamus to produce essential oils, ensure domestic and international marketing of the products and enhance economic growth of local community.

Main Activities

Procurement and installation of stainless steel distillation units with their accessories, mobilization of collectors to collect leaves and berries of MAPs, distillation of collected parts to extract oils, train collectors on sustainable harvesting practices.

Major Achievements

The project successfully installed three distillation units. The first and second units consist of oil tank of 2400 litres with condensers, oil separators and attached boilers. These distillation units were installed for the use of Napke Yanmara CFUG (Community Forest User Groups) of Lakuri Danda VDC and Pathibhara CFUG in Shyama VDC respectively. The third one was a test portable unit with an attached boiler and was installed in Kathmandu to test the new essential oil.

The new distillation units improved the efficiency in the production of essential oil. In the iron lining (M/S) distillation unit, 150 kg of firewood was used to distil 300 kg of raw wintergreen and produce 1.5 kg (0.5%) of wintergreen oil. Time consumed for the entire process was 12 hours. On the other hand, the new S/S distillation consumed 160 kg of firewood to distil 500 Kg of raw material in 11 hours and produce 3.5kg (0.7%) of wintergreen oil. The wintergreen oil retained natural brown color and no further treatment with oxalic acid was required. The new distillation unit also had a chain pulley system and storage tank which greatly eased the extraction work.

Managing community managed processing unit has never been easy. In order to manage the unit, all the CF users were convinced to amend the CF operational plans, facilitating the sustainable harvesting of MAPs. With the support from Nepal Swiss Community Forestry Project (NSCFP), the cooperative developed an inclusive model to involve the poorest of the poor in the enterprise. NSCFP purchased 30% of the share, which was distributed to the poorest in the village.

In Dolkha 18 CFUGs with 6545ha of forest land were certified with the initiation of ANSAB. ANSAB also supported in obtaining organic certification of essential oil from German based Lacon Gmbh. The organic as well as forest certification opened up international market for the essential oils, especially in Europe and America. At present, the unit is producing 10 types of essential oils namely Abies, Anthopogan, Artemisia, Calamus, Jatamasi, Juniper berry, Juniper needle, Valerain, Wintergreen and Zanthoxylum. The project also influenced the government to reduce tax on wintergreen leaves from NRs 1 per kg to NRs 0.25 per kg.

Cofunding Partners

Action Aid Nepal (AAN), Public Partner Alliance, ANSAB, Male International Himalayan Bio-Trade Private Ltd, NSCFP, FECOFUN, DFO and CFUG.

Purchasing raw material from community forest for essential oil extraction

Extracting essential oil in steel lining distillation unit

ALPINE BIODIVERSITY CONSERVATION PROJECT

Project No	NEP/98/G52/04			
Focal Area	Biodiversity			
Grantee	Alpine Biodiversity Conservation Project			
Operational Programme	OP#1 Arid and semi-arid eco-systems			
Location Districts/ VDC/Tot. Ward	Jumla	Tatapani, Chandannath		10
No. of CBOs/HHs M/F	26	523	268	292
Duration	12/1999-12/2001			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	37,860		4,157	
Total Grant (US$)	92,017			

Background

Jumla District is one of the most inaccessible and remote districts in Nepal with a low human development index. The average life expectancy in Jumla is only 44 years, which is 11 years less than the national average. It takes about a week's walk to reach there from Surkhet, the nearest road head. The air service is also not reliable because of the rugged terrain and unpredictable weather of the region. Moreover, majority of the local people cannot afford pay the air fare. However, owing to the rugged terrain and inaccessibility, Jumla District is rich in Non-Timber Forest Products (NTFPs). But many of the valuable species are threatened and/or on the verge of extinction due to unsustainable harvesting practices.

Main Objectives

Conserve and manage valuable NTFPs for sustainable livelihoods of the Jumli people.

Main Activities

Cultivation of rare and high-value medicinal and aromatic plants, conservation of high-mountain biodiversity, NTFPs management, ICS, SHS, toilet construction and income generation activities, formation of CBO, micro credit.

Major Achievements

The project facilitated the formation of CBOs who were instrumental in domestication of rare and high-value medicinal plants. Likewise, the project also introduced SHSs and develop market for SHS. During the project tenure, altogether 200 SHSs were installed. The project also initiated the cultivation of major NTFPs such as Padamchal (*Rheumn australe*), Sugandhwal (*Valeriana jatamansi*), Jatamansi (*Nardostachys grandiflora*) and Bojho (*Acorus calamus*) in 0.4 hectare of land. About 4500 seedlings of *Pinus wallichiana* were planted in different community forests and private land. CBOs set aside and protected more than 75 ha of land for plantation. The CBOs also started saffron cultivation. Ex-situ conservation of Saffron, enhanced their income generation activities. The project initiated the distribution of 80 metallic ICSs for the households of the project area. These ICSs consume 18 percent less firewood.

With the active participation of CBOs, two drinking water systems were established, which helped bring social harmony among different communities living in the village. Today, Dalits also drink from the same tap. Likewise, the construction of 287 toilets in the locality has improved the sanitary conditions in the village.

Cofunding Partners

AEPC, ANSAB, District Partnership Programme, DSCO, High School, Member of Parliament Fund, CBOs, DDC, DADO, DFO and VDC.

Collection of NTFP is one of the major economic sources in Jumla

Jumlis in their cultural attire

Project No	NEP/98/G52/05
Focal Area	Biodiversity
Grantee	Tripura Sundari Village Development Association (TSVDA)
Operational Programme	OP# 3 & 4 – Forest and Mountain ecosystems

Location Districts/ VDC/Tot. Ward	Baitadi	Gwalek, Nagrajun		11
No. of CBOs/HHs M/F	68	1100	846	360
Duration	12/1999- 12/2001			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	27,403		49,468	
Total Grant (US$)	126,871			

Background

Baitadi District lies in the remote Far-western region of the country. The Gwalek forest in Baitadi covers 2571 hectare of land and is spread over eight VDCs. The forest also has a very famous site called the Gwalekdham, a holy place for the Hindus. The forest patch also serves as a 'major watershed ' and provides drinking water to the district headquarters and adjacent settlements. Owing to human induced activities, the forest now is facing tremendous resource degradation that has led to disturbances in the mountain watershed ecosystem.

Main Objectives

Conserve the Gwalek forest by improving the socio-economic conditions and livelihoods of local people.

Main Activities

Conservation of Gwalek watershed, community forest management, promotion of NTFP, community plantation, support to irrigation, drinking water and springs, installation of ICS, schools, non-formal education, formation of CBOs and micro enterprises.

Major Achievements

The major outputs of the project include the protection of the vast Gwalek forest through the management of seven community forests in the periphery. Likewise, other accomplishments include the establishment of two nurseries, plantation of 200 cluster of Nigalo, 6000 cuttings of Napier and more than 5,000 seedlings of different tree species in the watershed area. The construction and distribution of 264 ICS have reduced the demand for firewood, decreasing biotic pressure in the Gwalek. One of the highly commendable works of the project was community participation in various social development activities. The contribution of the local community in kind was worth US$ 49,468, which was almost equal to the SGP support. With the active participation of the community members, the project succeeded in conserving seven springs, implementing 14 drinking water schemes, constructing two school buildings and three boundary walls in the school premises and constructing 535 toilets. The other activities carried out with the participatory involvement of the community were the construction of one flour mill and improvement of 3.5 km long trail. The project also mobilized a revolving fund (Community Environment Trust Fund) of US$ 32,000 equivalent benefiting more than 190 households. In a nutshell, despite uncertainties and adverse working conditions, the project succeeded in fully integrating socio-economic and environmental components in achieving the objectives.

Cofunding Partners

Community Based Economic Development, School, DDC, VDC, DFO, CFUG and CBO.

Community at work in Bhuldanda, for drinking water. Low caste Bhuls are untouchables in Gwalek, Baitadi

Developing young conservation Stewards in School.

KAKREBIHAR BIODIVERSITY AND CULTURE CONSERVATION

Project No	NEP/98/G52/06
Focal Area	Biodiversity
Grantee	Sustainable Development Facility (SDF), Surkhet
Operational Programme	OP#2 and OP#3 – Forest and Mountain ecosystems

Location Districts/ VDC/Tot. Ward	Surkhet	Latikoili		7
No. of CBOs/HHs M/F	23	337	321	298
Duration	7/2000 - 9/2005			
SGP Grant (US$)	48,000			
Cofunding (US$) Cash and Kind	60,677		3,020	
Total Grant (US$)	111,697			

Background

Kakrebihar forest, as the name suggests (in Nepali), is shaped like a cucumber seed and covers an area of 167 hectares of forested land interspersed with Sal (*Shorea robusta*) and pine (*Pinus roxburghii*) trees. The interspersion provides a suitable habitat for several common wildlife species including the shamber dear, the population of which is decreasing due to various human induced activities. Apart from the plant and animal diversity, this area also has archaeological and cultural significance. At the top of a small hillock, there is old temple ruins with beautiful stone artifacts. With proper measures for the conservation of local biodiversity and publicity about the ancient artifacts, Kakrebihar has the potentiality for eco-tourism, which may provide opportunities for sustainable livelihood for local people.

Main Objectives

Conservation of biodiversity and protection of the historically important archeological site of Kakrebihar, while promoting the cultural heritage of the indigenous Tharu community.

Main Activities

Participatory community-led biodiversity rehabilitation and conservation activities, facilitation of excavation of artifacts, Sal-leaf plate making, NTFP management, regular patrolling in the forest, maintenance of village roads, construction of drainage canal and ICS installation, CBOs formation, livestocks and vegetable farming, rope making and publication of brochures.

Major Achievements

Since the inception of the project, there had been a collaborative effort in the conservation of Kakrebihar. The Department of Archeology (DoA) had excavated the temple ruins and unearthed 2026 exquisite ancient artifacts which recite the saga of ancient times. The excavation revealed that there was a 13-meter long Shikhar styled temple but the basic questions such as who constructed the temple, who and how it was demolished still remain unanswered. The DoA has prepared a blueprint for the reconstruction of the temple. The project was successful in mobilizing local community for the protection of these artifacts during the excavation. The Ministry of Population and Environment (MoPE) provided support for the construction of a fireline inside the forest and fence the forested area. The District Forest Office (DFO) was involved in the plantation and protection of the forest. The community was also involved in the operation of two nurseries which produced more than 27,000 seedlings and planted in both private and community land. The Local community has imposed their own rules regarding the conservation of the forest. Apart form banning cattle grazing in the forest, poaching was completely stopped. With the project's "One house- one ICS campaign", altogether 256 ICSs were constructed. The Department of Forests eventually declared Kakrebihar as a conserved forest.

At its early stage, the project focused its attention in the formulation of settlement-based CBOs in the periphery of the Kakrebihar forest. These CBOs formulated their own plan of development initiatives and submitted them to the Village Development Council for approval. In this way, the project ensured a bottom up approach and successfully integrated CBO plans in the planning process of the Village Development Council. In order to complement the initiatives of the local people, the project provided support for the establishment of a Tharu museum and set up scholarship programme for the children of the indigenous Tharus. In the same vain, the project also initiated economic activities such as "Goat and Pig for all", community farming, Sal-leaf plate and rope making.

Cofunding Partners

CBO, Center for Rural Technology (CRT), DoA, DFO, MoPE, VDC, DDC.

Exquisitive artefact after excavation in Kakrebihar, Surkhet.

Women members engaged in rope making

INTEGRATED HUMAN ECOLOGY PROJECT

Project No	NEP/02/03			
Focal Area	Biodiversity			
Grantee	Seed Tree Nepal (STN)			
Operational Programme	OP#3 - Forest ecosystems			
Location Districts/ VDC/Tot. Ward	Parbat	Durlum, Khurkot		16
No. of CBOs/HHs M/F	27	307	158	293
Duration	7/2002- 2/2005			
SGP Grant (US$)	45,000			
Cofunding (US$) Cash and Kind	16,777		3,431	
Total Grant (US$)	65,208			

Background

Nepal exports a significant volume of non-timber forest products (NTFPs) and wooden handicrafts to the international market. The buyers, on the other hand, want to ascertain that these products are harvested from sustainably managed forests. Thus forest certification by an internationally recognized third party can provide benchmark to ensure Nepal's export of NTFPs in the long run. And, since there is no accredited certification institution in Nepal, forest certification is very costly. The project focused more on developing certification standard based on the principles of Forest Stewardship Council rather than certifying the forest and its products.

Main Objectives

Initiate certification system for forest produce in the area, and conserve forest ecosystem by balancing it with human economy and ecology.

Main Activities

Orientation on forest certification to CFUGs, local standard preparation, nursery management, and support to drinking water, irrigational canal, ICS and Biogas plant construction, CBO formation and mobilization.

Major Achievements

The Integrated Human Ecology Project, implemented in Parbat District, was the first of its kind in Nepal to initiate forest certification procedure. The project was initiated in two of the 13 existing Community Forests. The project was able to successfully raise the forest certification issue and educate the community forest users at the grassroots level. It was a major breakthrough when Jhauri and Salleri CFUGs prepared the first ever Community Forestry Operational Plan by incorporating principles and indicators of forest Stewardship Council (FSC). The new local standard played a pivotal role in bringing about significant change in the attitude and behaviour of local community. With a provision of helping the poor members of the community mentioned in the local standard, the CFUG leased forest land to women and the disadvantage groups in the community. It also provided loans with lesser interest rate to the target group for income generating activities. The CFUG also increased women representatives to 33% in their committees and reclaimed forest land from encroachers. In order to raise awareness on forest certification, the project published Handbooks on "Initiating Forest Certification in Nepal and leaflets on Forest Certification" - both in English and Nepali.

During the project period, the project provided support for the installation of 45 biogas plants and 75 ICS to reduce firewood pressure from the local forest. Similarly, the project initiated the formation of four eco-clubs in local schools to develop environmental stewardship in the young minds. The project also provided support for the establishment of three nurseries to produce and distribute seedlings of grass, vegetable and tree species as preferred by the community. In the same vein, supports were also provided to construct 8 drinking water systems and 6 irrigation channels which benefited 197 HHs.

Cofunding Partners

CBOs, Nawa Chetana Community Development Centre, OUEST, STN, VDC, DDC, DFO and CFUG.

Jhauri Community Forest was first to amend operation plan, incorporating local standard for forest certification

Women member in their regular meeting

PROMOTING COMMUNITY MANAGED WETLAND TO UPLIFT THE LIVELIHOOD OF RURAL FARMERS AND BIODIVERSITY CONSERVATION

Project No	NEP/03/08
Focal Area	Biodiversity
Grantee	Lumbini Crane Conservation Centre (LCCC)
Operational Programme	OP#3, Forest Ecosystem Conservation

Location Districts/ VDC/Tot. Ward	Rupandehi	Khudabagar, Madhubani		6
No. of CBOs/HHs M/F	4	56	39	17
Duration	6/2004 - 12/2005			
SGP Grant (US$)	23,000			
Cofunding (US$) Cash and Kind	41,322		2,342	
Total Grant (US$)	66,664			

Background

Lumbini, the birth place of Lord Buddha, is one of the 9 cultural World Heritage Sites, in Nepal. It is also important for wetland ecosystems as it has a number of permanent and temporary wetlands. These wetlands are the home to globally endangered bird species like the white rumped and slender billed vulture. They also support the threatened Sarus Crane. Although Lumbini is holy sites of both Hindus and Buddhist, majority of the inhabitant surrounding the areas are Muslims.

Main Objectives

Conserve the critical wetlands and the endangered species dependent on them through community initiated activities.

Main Activities

Formation of wetland user groups to manage the wetlands, financial investment to generate income for the HHs, dissemination of information through local FM radio on wise use of wetland and the conservation of surrounding biodiversity, annual monitoring of threatened species (vultures, cranes and storks).

Major Achievements

Thanks to the local knowledge, increased number of Sarus Crane was observed when community members were involved in crane count. The community census recorded 87 cranes which included 15 pairs of cranes with egg and 8 pairs preparing to nest compared to 11 cranes when community members were not involved. Additionally during the census, 18 globally threatened lesser adjutant stork with three nests and 150 white rumped vultures were also recorded. Prior to the census, the members were trained on basic procedure of crane and nest counting.

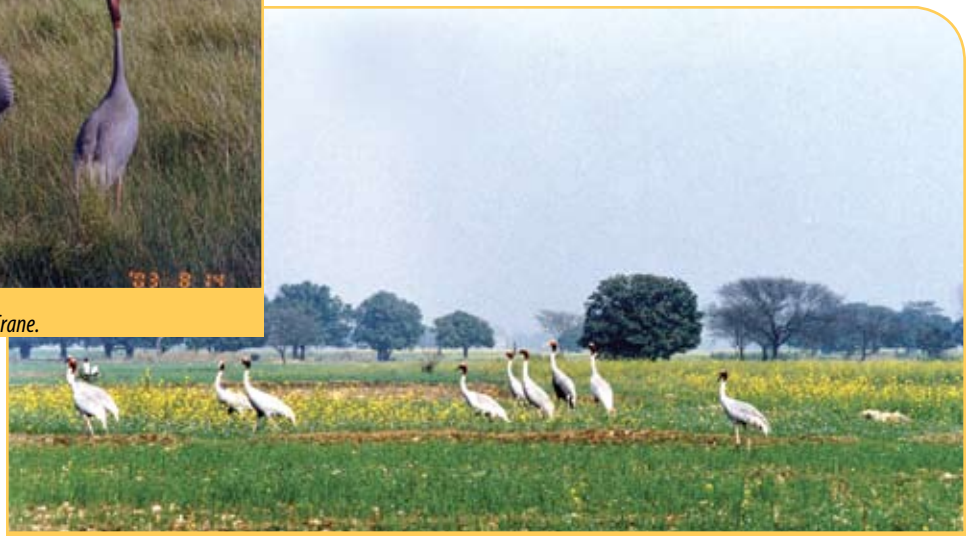
The fish farming in the wetland also started benefiting local communities. The project provided community members support to buy fingerlings and as a result of that the Bahunkoti Community Forest User Group (Chiliya) earned US$ 850 from the sale of first lot of fish harvested from the wetland. Likewise, the community groups from Khudabagar and Khangai also earned US$ 650 and US$ 350 respectively from their wetlands. Earlier, these wetlands were used only for irrigation in the village.

As part of conservation awareness, the project also reprinted the leaflet on "Birds of Lumbini" and distributed to participants of the World Buddhist Conference. Likewise, the support for 26 episodes of FM radio programme about crane conservation helped in disseminating awareness on the importance of conserving wetlands and the endangered crane especially to Muslim community. The project also joined hands with Tourism for Rural Poverty Alleviation Programme (TRPAP) and built watch tower, visitor shed and a trail inside the crane sanctuary.

Cofunding Partners

CBOs, Ecosystem Conservation Society, International Crane Foundation, Pacific Asia Travel Association, TRPAP/UNDP, Vanderbilt Family Foundation, DFID, Lumbini Development Trust, International Buddhist Society, SIMI Nepal, DDC,VDC and CBOs.

Nest of Sarus crane has increased in Lumbini after community initiated conservation of Sarus Crane.



Sarus Crane flocks in mustard field in Lumbini.

Project No	NEP/04/15
Focal Area	Biodiversity
Grantee	Spiny Babbler Organization, Kathmandu
Operational Programme	OP#2 - Costal, marine and freshwater ecosystems

Location Districts/ VDC/Tot. Ward	Kathmandu	Chobar		1
No. of CBOs/HHs M/F	15	303	98	205
Duration	4/2005 - 3/2006			
SGP Grant (US$)	25,000			
Cofunding (US$) Cash and Kind	8,000		3,000	
Total Grant (US$)	36,000			

Background

Taudaha, one of the two remaining natural lakes in the Kathmandu Valley, covers an area of 4 ha of land. Located in the south-west of the Valley, it is a home to some 118 species of bird representing 28 different families including the migratory birds from Northern Himalayas. Likewise, the lake harbours 39 species of aquatic plants and rich fish fauna which includes 36 Taxa of macro invertebrates mainly Oligochaeta, Ephimeroptera and Mollusca. The lake has also its cultural significance. According to the legend, Karkotak Nagraj and Nagrani (the King and Queen of Serpents) and Lord Ganesh reside in the pond and thus no fishing and boating are allowed. The lake is surrounded by agricultural field and eutrophication resulting from the intensive use of chemical fertilizers and pesticides in upstream, is the major threat to the wetland.

Main Objectives

Initiate community-based Taudaha wetland conservation by generating awareness in a manner that incorporates the use of alternative media/ art forms such as art, poetry and theatre, and bring improvement in the livelihoods and income of the local agriculture based community.

Main Activities

Formation of working committees, collection of baseline data on socio-economics and biodiversity of the project area, production and dissemination of awareness material on biodiversity conservation and forest ecosystems, organise arts events, community drama, and implement income generation activities.

Major Achievements

The project was able to capture the religious belief of older generation and blend that with the enthusiasm of young generation to conserve the Taudaha lake. The project also proved that artwork such as drama, poem, poetry, paintings could be effective tools to sensitise both younger and older generation to conserve the lake.

While demarcating the Taudaha boundary, a campaign - "My Taudaha" was launched. During this campaign, local people from all walks of life including students, local youths, women and elder people participated in different awareness activities such as drama, song, poem, poetry and painting competition and exhibition, sending powerful message to all about the importance of conserving the Taudaha lake and developing sense of ownership. The project ensured periodic organisation of Theatre Workshops in different schools by inviting parents and local civil society members to further enhance the environmental stewardship. The project also produced Leaflets, stressing the importance of conserving Taudaha and a video documentary highlighting the conservation efforts.

The local people organised a religious offering (Dhanya Parva) in the premises of the Taudaha Lake. With this money and the support from Department of Urban Housing Development and Building Construction (DUDBC), the local community built a Taudaha Gate and a concrete stairway to promote tourism activities in the area. The project also provided support for income generating activities such as vegetable farming, goat rearing, beekeeping, pickle making, and vermi-composting.

Cofunding Partners

Community, ICIMOD, Ford Foundation, Outreach and Communication Centre, Shanti Griha (BMZ- Germany) and DUDBC.

Newly constructed entry gate to Taudaha.

Demarcating Taudaha pond with traditional culture.

FOREST AND ENVIRONMENT CONSERVATION PROJECT

Project No	NEP/01/04			
Focal Area	Biodiversity			
Grantee	Samudayik Digo Bikash Karyakram (SADIKA)			
Operational Programme	OP#3 - Forest ecosystems			
Location Districts/ VDC/Tot. Ward	Salyan	Dhanabang, Kalimati, Kalche, Kaprechaur		28
No. of CBOs/HHs M/F	75 nos	1351	946	475
Duration	9/2001 - 12/2003			
SGP Grant (US$)	48,000			
Cofunding (US$) Cash and Kind	2,580		10,446	
Total Grant (US$)	61,026			

Background

After the successful implementation of the Environment and Community Forest Protection Project, Samudayik Digo Bikash Karyakram (SADIKA) expressed commitment again to protect the forest biodiversity and ecosystem in Salyan district. The Dhanbang VDC, where insurgent related incidents were very high, was selected as the site for the implementation of this project. The degraded forest of the VDC represents sub-tropical to lower temperate forest ecosystems. This forest plays an important role in the livelihoods of local villagers. They are heavily dependent on continued supply of firewood, fodder and timber for household and agricultural use. Thus the sustainable management of the forest resources can contribute significantly to their livelihoods.

Main Objectives

Improve hill ecosystem through the development and mobilization of sustainable and self-governing community-based organizations.

Main Activities\

NTFP cultivation and plantation, creation of green enterprises, CF conservation, ICS and SHS installation, support to irrigation pond, road construction, school, women empowerment and eco-clubs formation, CBOs formation, micro credit.

Major Achievements

Even during the peak of insurgency in the district, the project successfully convened its activities in the Dhanbang VDC of Salyan District. The project initiated dialogues and a number of meetings with the conflicting parties for the implementation of project activities. Despite uncertainties and the general breakdown in law and order situation, the project was able to form 22 CBOs and mobilize 19 existing set ups formed earlier with the support from CARE Nepal. Likewise, the project also facilitated in the registration of 2 new community forests. The CBO members planted 6,000 seedlings in 5 ha of degraded forest land, which included 1230 seedlings of *Cinnamommum Glaucoscence*, 1050 *Xanthoxylum*, 1030 Sugandawal (*Valeriana jatamansi*), 100 bamboo, 1500 Amliso (*Thysanolaen maxima*), 850 Chiraito (*Swertia chiraita*) and 500 Cardamom. The project also provided support for the installation of 14 SHSs and 183 ICSs.

As part of socio-economic development initiative, the project mobilized Rs 2.6 million as revolving fund (known as Community Environment Trust Fund) to 399 poor members of the local community. Nearly 48 percent of the beneficiaries were from Dalits or low caste groups such as blacksmith, traditional tailors, shoe makers and goldsmith. Of the total amount, nearly Rs 2 million was paid back and also earned an interest of Rs 78,000. The project joined hands with the members of CBOs and CFGUs and provided support for the construction of 13.5-Km long road, 3 irrigation ponds, 427 toilets and support for 4 local schools. The community members actively participated in the development activities, which not only contributed to the conservation of natural resources but also helped in conflict resolution and peace building process.

Cofunding Partners

DDC, VDC, DFO, Community school and CBOs.

Community meeting in Salyan

Ginger plantation with seed fund

Project No	NEP/02/02			
Focal Area	Biodiversity			
Grantee	Tripura Sundari Village Development Association (TSVDA)			
Operational Programme	OP#3 - Forest ecosystems			
Location /Districts/ VDC/Tot. Ward	Baitadi	Gwalekh, Nagarjun and Durgasthan		27
No. of CBOs/HHs M/F	87	1396	1088	457
Duration	7/2002 - 4/2005			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	55,784		10,107	
Total Grant (US$)	115,891			

Background

The success and experience gained from Watershed Biodiversity Conservation Project (NEP/98/G52/05) encouraged implementation of biodiversity conservation project in Durgasthan VDC of Baitadi District, Far West Nepal. The Gwalek forest, spread over 8 VDCs and in an area of 2571 ha of land, is very significant for its rich biodiversity and diverse forest ecosystem. Gwalekdham, which lies at the top of Gwalek hill, is a sacred site for the Hindus. The Gwalek watershed is the source of drinking water for the people living in the District Headquarters.

Main Objectives

Conserve Gwalek forest and enhance living standard of local rural people.

Main Activities

Establishment and management of nurseries, production of fodder plants, management of NTFP, ICS installation, support to school, irrigation canal and trail improvement, formation of CBOs, initiation of micro credit, conduct environmental education classes for the CBOs.

Major Achievements

The project was able to capture the religious belief of older generation and guide younger generation to conserve the sacred Gwalek forest. As a result, the community members banned illicit felling of trees and started rotational grazing in the forest. The project also facilitated handing over of two forests spread over 53 ha of land to 208 users. Multi-purpose nurseries established and managed by CBOs produced 15,000 seedlings of different NTFPs, which were distributed among the members of local CBOs. The project also provided support for the installation of 629 ICS to reduce the pressure of firewood from the forest. With the cofunding by the CBOs both in cash and kind, the project replaced traditional grinding machines in four flour mills with four improved Water Turbines benefiting 132 HHs. Similarly, the project supported eight drinking water schemes which benefit 128 HHs and 652 students of 3 schools, built 1.2km-long cement-lined irrigation canal benefiting 115 HHs, and constructed a 1.7 km-long trail linking Gwalek VDC with the District Headquarters. The project also constructed the building of Kedar Nagarjun Secondary School in conjunction with local CBOs and with the support from DFDP. Shree Kedar CBO was awarded as the best CBO in the Far and Mid-West Region of Nepal on the occasion of the inauguration of the first regional office of UNDP (Nepal) in Nepalgunj. The CBOs constructed their own building, installed ICS in all the members' houses and provided support for drinking water facilities to the Bhul (Dalit) community.

Cofunding Partners

DDC, DFDP, CSP, Local Schools, VDC and CBOs.

Managing community Nursery for seedling production.

Community members engaged in Forest inventory.

CLIMATE CHANGE MITIGATION

SGP can support a wide range of project under climate change mitigation focal area. In order to be eligible under this focal area, Nepal has ratified United Nations Framework Convention on Climate Change (UNFCCC). SGP supported projects contribute to removing the cultural, institutional, technical and financial barriers and promote dissemination of renewable and alternative energy technologies. These projects primarily involve building local capacity, raising public awareness on climate change and energy conservation and efficiency.

In Nepal, SGP has supported in promoting biogas, solar home system, micro hydro, improved cook stove, rice husk stove, bio-briquette, bamboo eco-house, electro-bus and solar Tukis. These projects have not only reduced the emission of CO_2 in the atmosphere but also helped conserve forest ecosystems. Following 12 such projects have been briefly described in this chapter:-

1. Displacement of Kerosene Lamps by Low Cost WLED based solar photovoltaic (PV) Lighting System
2. Community Briquette Project
3. Community Biogas Demonstration Project
4. Electro-bus Project
5. Paper and Power Project
6. Bamboo Eco-housing Project
7. An Integrated Biogas Programme for Environment Conservation and Sustainable Development
8. Solar Village Electrification Demonstration Project
9. Energy and Development Project
10. Promotion of Community Managed Rural Energy Development
11. Solar Energy for Environment and Community Development
12. Alternative Energy for Environmental Conservation through Women Empowerment

DISPLACEMENT OF KEROSENE LAMPS BY LOW COST WLED BASED SOLAR PHOTOVOLTAIC (PV) LIGHTINING SYSTEM

Project No	NEP/04/14			
Focal Area	Climate Change			
Grantee	Centre for Renewable Energy (CRE)			
Operational Programme	OP#6 - Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs			
Location Districts/ VDC/Tot. Ward	Illam/ Morang	Panchakanya /Yansila		N\A
No. of CBOs/HHs M/F	3	620	N\A	N\A
Duration	4/2005- 3/2007			
SGP Grant (US$)	46,000			
Cofunding (US$) Cash and Kind	173,876		0	
Total Grant (US$)	219,876			

Background

The Government of Nepal (GoN) made tremendous effort to supply electricity to the remote households through solar home systems (SHSs) by providing subsidy via Alternative Energy Promotion Centre (AEPC). AEPC has also developed Nepal Interim PV Quality Assurance (NIPQA) mechanism and more than 50,000 SHSs were installed in the remote Himalayan huts of Nepal. But there are still 2.4 million households, especially in the remote rural areas, who still use kerosene lamp or pine fatwood for home lighting. High initial investment cost of a typical SHS is the limiting factor for its wider dissemination. Thus a low cost alternative to the conventional SHS such as the Solar Tuki (lamp) was considered to more effectively displace kerosene lamp or the use of fatwood in rural households. This alternative is affordable for poor households even without government subsidy. Studies have shown that a rural family uses approximately 3 litres of kerosene and disposes 2 units of disposable battery per month. A single household spends around US$ 2.2 for home lighting. Likewise, at the cost of a conventional SHS, more than ten units of proposed Solar Tukis could be installed which may save over 40 litres of kerosene and over 20 units of disposable dry cell batteries in a month.

Main Objectives

To displace Kerosene Lamps by Low Cost White Light Emitting Diode (WLED) based solar photovoltaic (PV) Lighting System.

Main Activities

Install solar tukis, training on Solar *Tuki* operation, demonstrations on its use, repair and maintenance and quality assurance, micro financing, providing employment opportunities.

Major Achievements

The project was able to develop quality solar Tukis and installed 620 solar Tukis with two years warranty in two of the project VDCs. In collaboration with ECCA and with the financial support of Development Market Place and Nepal Development Market Place Fund of the World Bank, the Light for all Campaign' gained momentum and installed 14,000 additional solar tukis in 22 districts of the country. Initially, the project produced a booklet on Solar Tuki, which was instrumental in drafting "Karnali Ujyalo" campaign of the GoN for home lighting in the Karnali region. The distribution of over 14,500 tukis saved 3625K litres of kerosene, which would in turn save the emission of 8907M tons of CO_2. The project published a Solar Tuki Manual with a colour diagram which is very handy for Solar Tuki Technicians' training. In collaboration with Winrock International, the project is also developing a Project Idea Note (PIN) for possible funding from Clean Development Mechanism.

As village settlements in Nepal are scattered, the project encouraged and mobilized bare foot entrepreneurs to reach the scattered communities. The success of "Light for all campaign" was due to the basic facts that Solar Tukis were cheaper, reliable and micro-credit institutions are willing to provide loan to purchase the Tukis. It is a win-win approach for both the buyer and entrepreneurs. Likewise, it is a low-risk business for local financial institutions, as Solar Tuki itself can be used as collateral to the loan. On the other hand, the buyers could also easily pay the loan by saving money which would otherwise be spent in purchasing kerosene and battery.

The local financial institutions were mobilized from the early stage of the project and gradually the Solar Tuki business flourished resulting in the establishment of 3 Solar Tuki Manufacturing Industries, 19 Solar Tuki Implementing Organizations, and 22 village level Service Centres. Likewise, the project also trained 65 village level technicians to insure after sales service.

Cofunding Partners

DDC, Gramin Samudayik Bikash Sanstha, Karnali Bachat Tatha Rin Sahakari Sanstha, Kavre Samaj Sewa Samiti, Manakamana Mahila Bahuuddhesiya Sahakari Sanstha, Shree Bachat Tatha Rin Sahakari Sanstha, GMDF and NMDF of World Bank, WI and ECCA.

Solar Tuki industry in Biratnagar

Using Solar Tuki by community member

COMMUNITY BRIQUETTE PROJECT

Project No	NEP/03/12
Focal Area	Climate Change
Grantee	Integrated Development Society (IDS) Nepal
Operational Programme	OP#6-Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Lalitpur	Bisankhunarayan		1
No. of CBOs/HHs M/F	1	25	0	25
Duration	2/2004 - 2/2005			
SGP Grant (US$)	5,000			
Cofunding (US$) Cash and Kind	0		1,571	
Total Grant (US$)	5,572			

Background

Eupatorium adenophorum, the shrubby perennial, is known as Banmara (the forest killer) in Nepali for its notorious action in preventing other seedlings to grow. It is found gregariously in Nepal and often invades crop fields. The Community Briquette Project in Bishankhu Narayan VDC at the outskirt of Kathmandu valley, planned to harvest this shrub to make bee-hive briquettes and decrease the fuelwood demand. The community forest in the village could meet only one sixth of cooking energy demand from the local villagers. The rest of the demand of energy used to be fulfilled by kerosene and LP gas. Removing *Eupatorium sp.* is also expected to restore health of the community forest.

Main Objectives

Mitigation of deforestation through the promotion of briquettes as an alternate community fuel source.

Main Activities

Establishment of community briquette training centre, briquette production and marketing, information dissemination, community awareness, briquette making training.

Major Achievements

The major breakthrough in briquette production was achieved when there was acute shortage of LP gas and kerosene due to the blockade in the valley by the political unrest. The women members of the community who were earlier reluctant in briquette making were compelled to do so. And once they started, they never looked back. They produced over 10,000 briquettes of which 2000 were consumed by themselves. The community members earned US$ 1,000 by selling 8000 briquettes. Using 2000 briquettes for cooking also meant saving nearly US$ 2,000, which they would otherwise have spent in buying fossil fuel like kerosene. With the support from UNDP Country Office, the project also made a documentary on "Makings of Briquettes" which was telecasted by Nepal Television. The project also supported to establish a community briquette training centre which has also provided training to different community groups of other districts.

Cofunding Partners

CBOs, IDS Nepal, ICIMOD, Forest Users Group and UNDP Country Office.

Burning briquette produces little smoke.

Women members making bee-hive briquettes from Banmara.

Project No	NEP/04/13
Focal Area	Climate Change
Grantee	Chetana
Operational Programme	OP#6 - Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs

Location Districts/ VDC/Tot. Ward	Sarlahi	Bhatipur, Jabdi		18
No. of CBOs/HHs M/F	50	771	96	942
Duration	4/2005 - 9/2006			
SGP Grant (US$)	30,000			
Cofunding (US$) Cash and Kind	23,549		16,889	
Total Grant (US$)	70,438			

Background

The typical problem of most of the lowlands villages in Nepal is the unavailability of firewood due to rapid and unchecked deforestation in the past for agricultural development following the eradication of malaria in the 1960s . Most of the lowlands or Terai, which once used to be densely forested, have now been converted into agricultural field. Local villagers of Jabdi and Bhaktipur VDCs of Sarlahi District in the lowlands typically use agriculture waste and cow dung cake to cook their food, which lead to a well-known paradox- that "Nepalese farmers cook their rice with rice and wheat with wheat". This paradox is true in the sense that if cow dung used in the field, it yields wheat and rice. On the other hand Nepal showed tremendous progress in installing biogas in the past few years. But the service is limited to middle class families with a few cattle and some agricultural land. For those households with no cattle, community biogas plants may be a viable option to meet their household energy demands.

Main Objectives

The project aimed to demonstrate the use of biogas at the community level, where even the poor members of the community could share the facility of the biogas.

Main Activities

Construction and operation of community managed biogas plant, Construction of ICS, individual biogas plants, formation of CBOs, micro credit scheme, trainings, vermi-compost, irrigation , permaculture, off season vegetable farming and goat keeping.

Major Achievements

The project successfully installed 3 community biogas plants of 35 cu.m volume benefiting 18 households, of which six households have no cattle. Likewise, the project also provided support for the construction of 120 individual biogas plants. In addition, the project provided support to irrigate 5 ha of agricultural land, benefiting 22 households. As a part of capacity building programme, the project carried out activities such as initiation of vermi-composting, tailoring training for local women, goat farming, vegetable farming, agro forestry, permaculture and the construction of ICS. After the project provided training on vermin composting, local communities adopted organic farming and bio pesticide. With the promotion of commercial vegetable farming , some CBOs earned about US$ 450 from the plantation and selling of asparagus alone. Likewise after the ICS construction training, altogether 180 ICS were installed during the project period. In the same vain, after the training on tailoring training, 10 local women started a tailoring enterprise for income generation. Furthermore, three retail shops had also been established in the village.

With the project success, the NGO was also able to generate cofunding from World Neighbourhood Programme, who have generously supported the NGO in establishing three health clinics and one community house.

Cofunding Partners

Chetana, World Neighbourhood Programme, BSP, VDC and CBOs.

Using Community Biogas for household purpose

Producing vermis and manure by managing biogas slurry.

ELECTRO BUS PROJECT

Project No	NEP/03/03
Focal Area	Climate Change
Grantee	Himalayan Light Foundation (HLF)
Operational Programme	OP#11 - Promoting environmentally sustainable transport

Location Districts/ VDC/Tot. Ward	Kathmandu	Kathmandu		N/A
No. of CBOs/HHs M/F	N/A	N/A	N/A	N/A
Duration	12/2003 - 4/2005			
SGP Grant (US$)	33,000			
Cofunding (US$) Cash and Kind	194,884		0	
Total Grant (US$)	227,884			

Background

Clean air is the dream of all city dwellers. In order to decrease the level of air pollution, the GoN put a ban on Vikram Tempo (a three-wheeler notorious for CO_2 emission) and allowed zero-emission 3-wheeler electric vehicles to ply on the streets of Kathmandu. This initiative could not get any momentum as the Government banned the registration of new 3-wheelers of any kind due to limited carrying capacity of Kathmandu's roads. The vehicular emission can be reduced by introducing bigger vehicle of larger capacity with new zero-emission alternatives and replacing the 20-year-old vehicles operating in the streets of the Valley, which create far more pollution than their share of emission. Since that Nepal has a zero emission hydro-power electricity supply which will produce 1.5 GW of surplus electricity per annum in the near future, the use of electric vehicle would move Nepal towards further energy sufficiency, reduce pollution and preserve precious foreign currency now used to import non-renewable heavily-adulterated polluting fuels. It will also generate additional revenue for the government through the Nepal Electricity Authority.

Main Objectives

Operate (three) electro-buses for public transportation and acquire financial and technical data to evaluate the electro-bus technology, disseminate the findings to all stakeholders, which would serve as the basis for policy formulation to involve private entrepreneurs for wide scale replication.

Main Activities

Data acquisition and financial/technical evaluation of the electro-bus technology and the dissemination of findings, stakeholders meetings and public awareness seminars, workshops on the technology and introduction of private sector as project collaborator.

Major Achievements

The project produced electro-buses of 3 prototypes. The electro-bus I was the first EV bus prototype developed in Nepal and it was the ice-breaker for the new technology. Electro-bus II clearly demonstrated the feasibility of the electro-bus technology in Nepal's context. Electro-bus III had a float chassis and was a more advanced model and stronger than previous two electro-buses. These electro-buses were used for demonstration and was a major breakthrough for the promotion of electric vehicles in Nepal. One of the vehicles was handed over to a private institution to transport tourists from Tribhuvan airport to Thamel (a popular tourist destination), and the other two vehicles are used as 'demonstration' by projects. But unfortunately, the vehicle could not ply in the road due to existing syndicate system and higher initial investment.

Cofunding Partners

British Embassy's Climate Change Challenge Fund, Swiss Development Co-operation and UNDP.

3 prototypes of Electric Buses lined up during inauguration

Electric Vehicle for public transportation

Project No	NEP/01/03
Focal Area	Climate Change
Grantee	Himalayan Light Foundation
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Baglung	Lekhani		8
No. of CBOs/HHs M/F	9	90	2	129
Duration	9/2001 - 2/2003			
SGP Grant (US$)	49,000			
Cofunding (US$) Cash and Kind	16,406		3,844	
Total Grant (US$)	69,250			

Background

After successful implementation of Solar Village Demonstration Project in Bongadovan, Himalayan Light Foundation initiated Paper and Power Project at Lekhani VDC in Baglung. The project consists of two components. The first component includes the production of handmade papers and stationeries by using Lokta (*Daphne bholua*) in village based cottage industry which is found in hill forests of Nepal. The second component includes the introduction of SHS for household lighting to the poor communities who could not afford SHS even with the subsidy from the government. Thus the conceptual package of the project is to provide SHS to the poor villagers in loan with pay back system by working in the paper cottage industry.

Main Objectives

Support to members of poor rural communities for the installation of SHSs without collateral, and impart skill developing training to produce handicrafts at local levels for sustainable income generation.

Main Activities

Installation of solar home system ensuring after sales service, establishment of Lokta (Handmade Paper) cottage industry, capacity building of locals to run the cottage industry, construction of trails.

Major Achievements

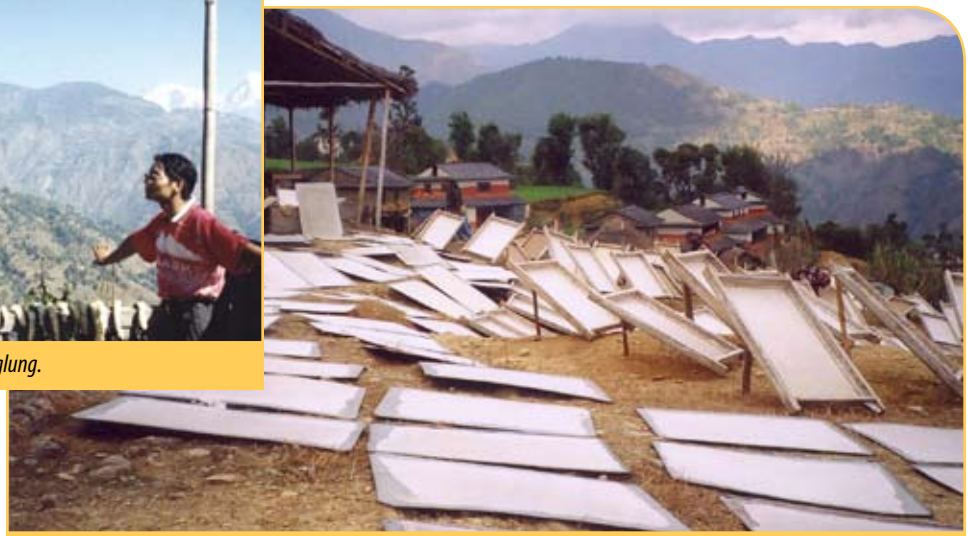
The project provided solar home system to 92 households. Likewise the project had also established hand-made paper cottage industry where the solar beneficiaries had the opportunity to work and payback the loan of SHS. The beneficiaries were trained on the different processes involved in the production of handmade paper from Lokta such as harvesting and beating, paper dyeing and paper making (using both traditional and Japanese method). The villagers not only made traditional papers but also produced different stationery articles in the village adding value to the paper.

Besides, they also learned to use local plant species such as Aloe, *Eupatorium* and the barks of orange, pomegranates and walnut (which were of no use in the village until then) as raw material for paper production. For the regular supply of the raw material, the villagers had prepared a community-led sustainable Lokta harvesting plan. It was being planned to use the concept of this project along with the activities of the solar village electrification and demonstration project to up scale a medium-sized SGP project. On the other hand, Strategic project of US$ 149,090 had been implemented in Sri Lanka and India to replicate this modality.

Cofunding Partners

AEPC, Cottage and Small Industry Training Centre, CFUGs , VDC, Lotus Energy, Nepal Yantrashala, Punit International, Solar Development Committee and CBOs.

Monitoring the installation of SHS in Lekhani, Baglung.



Drying handmade paper in community paper cottage industry, Lekhani Baglung.

BAMBOO ECO-HOUSING PROJECT

Project No	NEP/03/01
Focal Area	Climate Change
Grantee	Resource and Environmental Conservation Society Nepal (RES-N)
Operational Programme	OP#5 - Removal of barriers to energy efficiency and energy conservation

Location /Districts/ VDC/Tot. Ward	Kanchanpur	Krishnapur		3
No. of CBOs/HHs M/F	22	500	463	27
Duration	12/2003 - 12/2005			
SGP Grant (US$)	39,000			
Cofunding (US$) Cash and Kind	30,270		6,940	
Total Grant (US$)	76,210			

Background

The GoN abolished Kamaiya (bonded labor) from western part of the country in July 2000.The bonded laborers celebrated the day they were liberated with mirth and merriment but the question of their livelihood, especially in absence of "food, shelter and cloth" is still a big challenge. The Landless Settlers' Problem Resolution Commission has identified total number of Kamaiyas as around 7,000, and out of which 58% are found to be living under the open-sky. The GoN has started providing 0.16 ha of land to each Kamaiya family for their settlement but the construction of house still remains a problem. The intervention of the project is to demonstrate bamboo eco-house, which is economically viable and ecologically sustainable that could be a suitable alternative for the Kamaiyas.

Main Objectives

Promote bamboo cultivation by ascertaining sustainable use of natural resources and link it with socio-economic and environmental benefits and construct bamboo eco-house for Kamaiyas.

Main Activities

Bamboo plantation and propagation, bamboo eco-house construction, agroforestry, construction of ICS and biogas plant, promotion of bamboo- craft.

Major Achievements

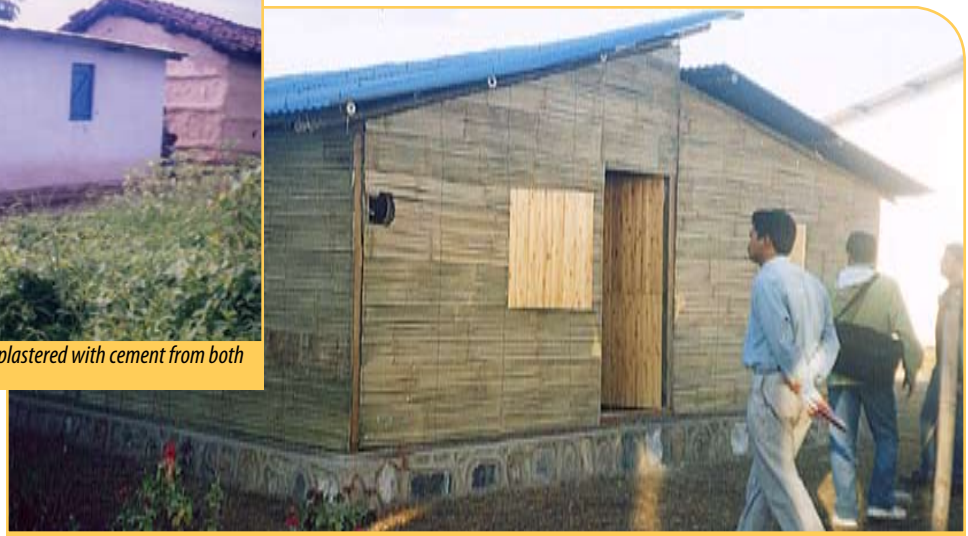
Bamboo is considered as poor man's timber. In far west Nepal, it took quite some time for project to create awareness on the importance of bamboo cultivation and even harder time convincing people that bamboo house is actually possible. But once convinced, they started bamboo plantation in 30 ha of land. These plantations have not only helped in the extension of bamboo cultivation, in far west Nepal but also contributed to carbon sequestration as bamboo absorb 40% more CO_2 than other trees.

The breakthrough was observed when the project erected 18 bamboo houses designed to suit the needs of the Kamaiyas. INBAR has provided technical support while constructing the bamboo house. A one-storey bamboo eco-house with two rooms has a lifespan of 30 years. The project also facilitated in the construction of 4 biogas plants and 180 ICS, reducing firewood consumption by 20% in the area. The five agroforestry models initiated by the project benefited 436 Kamaiya HHs. Likewise, the setting up of a Bamboo Trust Fund also benefited 55 households, which availed soft loan to community members to carry out small scale enterprises. Following the bamboo craftsman training local people produced various bamboo products. The bamboo products included wall clock, CD and cassette rack, table pen holder, wall pen holder, flower holders, table, toy rickshaw, chair, decorative temple, sofa, bengal stand, fruit case, file folder, flower case, photo frame etc. The project facilitated a market outlet for such products in the District Headquarters.

Cofunding Partners

BSP, CBOs, INBAR,DDC and VDC.

The same completed bamboo house. The house is plastered with cement from both inside and outside the bamboo walls.



Bamboo house under construction for Kamaiyas in Kanchanpur

Project No	NEP/02/06
Focal Area	Climate Change
Grantee	National Biogas Construction and Services (RGG)
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Makwanpur	Harnamadi, Hatiya, Churiyamai, Padampokhari		24
No. of CBOs/HHs M/F	202	843	1433	3096
Duration	7/2002 - 3/2004			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	147,805		27,943	
Total Grant (US$)	225,748			

Background

The GoN has been providing subsidy for biogas plants constructed by 34 government certified biogas companies. Likewise, development banks also provide loans for biogas installation. But due to lengthy process of bank loans and cumbersome paper work, farmers are normally reluctant to get the facility. Thus this project was initiated to remove such financial barriers by providing credit facility and creating revolving funds for biogas installation. The project areas also have large population of cattle (6323 cows, 5196 bulls and 3040 buffaloes (PDDP, 2002), a basic requirement for biogas production. A total of 6943 HHs (82%) in the project area use firewood for cooking. Thus the project site is not only suitable for the production and use of biogas but the intervention will also help curb deforestation and carbon dioxide emission.

Main Objectives

Support rural communities to install toilet attached biogas plants and enhance their sustainable livelihoods by helping them to implement socio-economic development activities.

Main Activities

Construction of toilet-attached biogas plants, support for local schools, construction of bridges, drinking water facilities, river training, and income generating activities.

Major Achievements

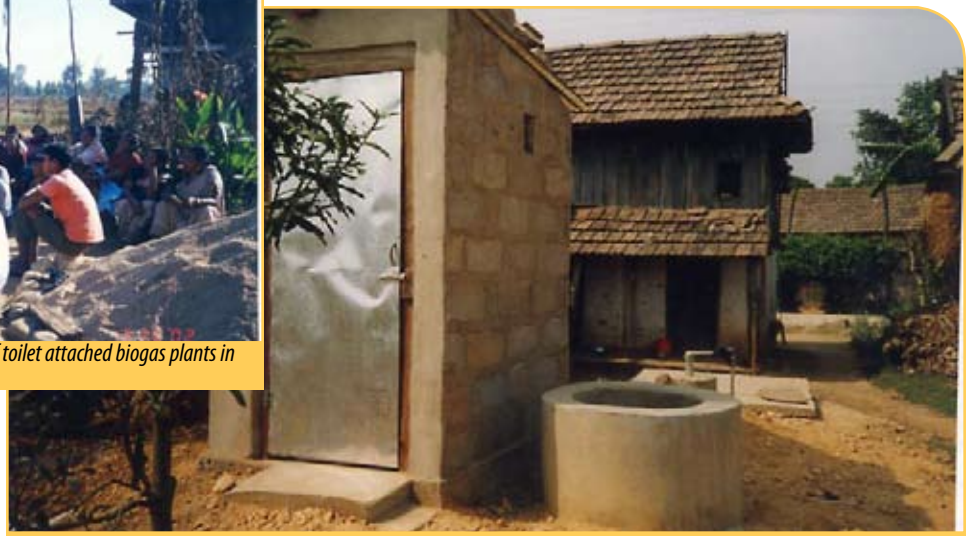
The project constructed 455 biogas plants in the project VDCs saving 2048 MT of CO_2 from emission (a biogas plant saves 4.5 MT of CO_2 from emission per annum). The 455 biogas users had to stall feed their cattle which curbed open grazing in the forest area and helped in minimizing seedling damage by trampling. Of the 455 biogas users, 75% of them connected their toilet to the biogas digester, and the farmers also started using the bio-slurry, which was really encouraging. About 79% of total nutrient requirement of soil is fulfilled by bio-slurry whereas the remaining 21% is supplemented by chemical fertilizers. However, 56% of the users complained about an increase in mosquito after the installation of biogas plant.

With regard to the construction of 455 biogas plants, the project sensitized 202 CBOs in the project area. The project also took initiative to involve other stakeholders for socioeconomic development activities by mobilizing these CBOs. The contribution of local community was also significant in the social development activities like the construction of primary school building, construction of a 10m-long bridge, initiation of four drinking water schemes and river training activities. The project also facilitated income generating activities such as vegetable farming, production of grass seed on leased land, and the establishment of vegetable nursery.

Cofunding Partners

DADO, DDC, District Education Office, BSP, Centre for Self-help Development, Commercial University Japan, CBOs, CFUGs, Local Government Programme (LGP), National Biogas Construction and Services, Plan Nepal, VDC and Bagmati Integrated Watershed Management Project (BIWMP)/EU.

Sensitising community members in installation of toilet attached biogas plants in their monthly meeting.



A toilet attached biogas plant in Hardiya VDC, Makwanpur

SOLAR VILLAGE ELECTRIFICATION DEMONSTRATION PROJECT

Project No	NEP/98/G52/03
Focal Area	Climate Change
Grantee	Himalayan Light Foundation
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Baglung	Bangadovan		9
No. of CBOs/HHs M/F	10	105	210	39
Duration	12/1999 - 6/2001			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	32,173		5,935	
Total Grant (US$)	88,108			

Background

The GoN has been providing up to 50% subsidy for the installation of solar home system in the country's rural areas. But the poor section of the rural community cannot afford the costly solar home system even with the subsidy. Thus, in a way, the rural rich are getting the subsidy actually meant for the poor. The poor people from Bongadovan, Baglung generally rely on firewood, from nearby forests for lighting and cooking. They chip out fatwood - the outer stem of pine tree locally known as Diyalo for lighting. After debarking, the trees dies slowly. This practice can have far reaching consequences globally. Burning firewood for cooking and lighting fills the house with toxic fume and smoke, inviting respiratory diseases. Under the Home Employment and Lighting Package (HELP), the project aimed at providing solar home system free of cost to poor communities.

Main Objectives

Introduce a home employment and lighting package programme for a sustainable method of Solar Home System (SHS) by providing intrinsically combined alternative income generating opportunities to rural communities.

Main Activities

Installation of solar home system, training on handicraft promotion, production of handicraft, marketing, e-commerce, and social mobilization.

Major Achievements

The project successfully installed 107 Solar Home System (SHS) during the project period out of which 105 SHS were distributed to individual households and one each to local Health Post and VDC Office. The SHSs were provided to individual household as a collateral loan. The project also provided technical training to selected local people on the SHS installation and maintenance to ensure smooth functioning of the device and self-service. The SHS beneficiaries, especially women, were trained on crochet knit handbags. After the completion of training, they produced more than 600 colorful bags as part of the process of repaying the loan. Following installation of SHS, local women worked at night to knit bags under the solar light. Their knitting skill also improved over time. The training has enabled them to understand graphic designs and synchronise colors. The confidence of local women grew dramatically, as the installation of SHS was done by their own efforts. On the other hand, the male members of the community also started lending hands in doing household chores such as fetching water and looking after the children.

Local villagers were also able to save money to buy kerosene for home lighting. On other hand, this also stopped indiscriminate extraction of fatwood and saved considerable number of pine trees from dying.

The health-post record showed lesser number of cases of respiratory problems and ailment of eyes following the installation of SHSs. The health post also started evening services under solar light. With the application of SHS schoolchildren were able to study and do homework in the evening. One school girl gave credit to SHS for her success in SLC exam. Surprisingly, alcohol consumption was reduced in the village. Under Solar light, others would notice weird alcoholic behaviour and may loose social prestige in the neighbourhood.

In the beginning, the project formed a Solar Development Committee to facilitate solar beneficiaries and monitor repayment of the loan. The committee was later registered as an NGO.

Cofunding Partners

AEPC, Lotus Energy, Mother's group, Solar Development Committee, Solar Sister, Winrock International, VDC and CBOs.

Solar Village in Bangadovan, Baglung

Women croche-knitting bags to repay loans for SHS

Project No	NEP/03/02
Focal Area	Climate Change
Grantee	Solar Development Committee (SDC)
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Baglung	Lekhani		9
No. of CBOs/HHs M/F	9	134	57	71
Duration	12/2003 - 4/2005			
SGP Grant (US$)	12,000			
Cofunding (US$) Cash and Kind	23,707		39,159	
Total Grant (US$)	74,866			

Background

After gaining experience by jointly implementing Paper and Power Project (NEP/01/03) with Himalayan Light Foundation, Solar Development Committee, a local CBO, initiated this project aiming at distributing marginalized land Dalit households Solar Home System (SHS) with subsidy and soft loan. Members of the Dalit community will work in the community cottage industry and pay back the loan taken for SHS.

Main Objectives

Preserve and manage the forest and utilize forest products for the income generation activities.

Main Activities

Facilitation and promotion of SHSs, ICS and eco stoves, installation of prototype Solar Boiling System with thermal water heating system, plantation programme, technical training on solar home system, paper product design, SHS maintenance, micro entrepreneurship and market development.

Major Achievements

The project convinced the Dalit communities to instal SHS in their house. A total of 25 SHS of 10w, 15 eco-stove and 52 ICS were installed in the Dalit households. Likewise 5 SHS of 36 W were also installed in public places. ASVIN France on the other hand supported to install parabolic Solar Boiling System with thermal water heating system and a big stove to boil Lokta for paper production. It reduced 80% fuel wood while boiling Lokta. As the part of institution building, SDC purchased land for the cottage industry and training centre and constructed boundary wall as protection against damage by livestock. So far the cottage industry has sold paper products worth US$ 9000 and stocked goods worth nearly US$ 5000. During the project period a remarkable cofunding was generated to construct 15 km Lekhani- Suldanda motorable road which not only linked Lekhani with District Headquarters but also helped to promote market for paper products .

Cofunding Partners

AEPC, Community Road Construction Committee, HLF/Solar Sisters Project, SDC, ASVIN France, DDC, VDC and CBOs.

Community Building for Handmade Lokta Paper Cottage Industry, Lekhani, Baglung

Parabolic solar cooker for Lokta boiling

PROMOTION OF COMMUNITY MANAGED RURAL ENERGY DEVELOPMENT

Project No	NEP/01/01			
Focal Area	Climate Change			
Grantee	Support Activities for Poor Producers of Nepal (SAPPROS)			
Operational Programme	OP#6: Promoting the adoption of renewable energy by removing barriers and reducing implementation costs			
Location Districts/ VDC/Tot. Ward	Okhaldhunga	Betini		9
No. of CBOs/HHs M/F	22	374	321	320
Duration	2/2001 - 8/2003			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	1,570		21,615	
Total Grant (US$)	73,185			

Background

The project VDC Betini, Okhaldhunga in Sagarmatha Zone is three hours walk from the District Headquarters. In the absence of electricity, the local people of the VDC had to rely on kerosene or fatwood for home lighting. On the other hand, the tributaries of the Sunkoshi River - Molung, Nigale and Andheri that flow through Betini - provided ample opportunities for generating hydro-electricity at village level. The preliminary feasibility study showed that the VDC had the potentiality of generating 30Kw of electricity from micro-hydropower project.

Main Objectives

Promotion of efficient rural energy systems and environmental management for enhancing rural livelihood.

Main Activities

Micro hydro power plant installation, construction of water harvesting tanks, establishment of nurseries, vegetable farming, ICS and biogas construction, irrigation facilities, vegetable farming and social mobilization.

Major Achievements

Along with other UNDP assisted programmes in the district such as Community-owned Primary Education (COPE), Rural Energy Development Programme (REDP) and Sustainable Community Development Programme (SCDP), SGP project focused its work in the construction of micro-hydro electricity plant. With the technical collaboration of VDC, DDC and REDP, the project successfully constructed a 9.05 kilowatt-micro-hydro plant from the Andherikhola (stream) by mobilizing existing community-based organizations (CBOs) formed by REDP and SCDP. This had helped in home lighting for 94 households (HHs) in Rupse where majority of inhabitants were indigenous Magers. During the entire process, community participation and resource sharing was very significant. They had to carry heavy equipment such as water turbine and penstock pipes for almost 5 days from the nearest road-head to the project site. The success of electric lighting in the Magar village had inspired people from other villages as well. This led to the active participation of the people of Dhamala Village for the construction of a 9.5Kw micro-hydro plant at Devishthan, benefiting 141 HHs. The villagers from other VDCs have also initiated the construction of micro-hydro electricity plants (peltric set) in their respective villages.

The project also constructed 20 cepaulin plastic water harvesting tank with a gravity sprinkle system, which helped in promoting off-season vegetables in the project site. Likewise, the project provided support for the installation of 4 biogas plants and 67 ICS in the area.

Cofunding Partners

REDP, COPE, SCDP, DDC VDC and CBOs.

Microhydro plant in Betini, Okhaldhunga

Cepauline plastic lining water harvesting tank has increased irrigation opportunity.

Project No	NEP/02/04			
Focal Area	Climate Change			
Grantee	Nepal Energy Development Company (NEDCO)			
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs			
Location Districts/ VDC/Tot. Ward	Lamjung/Palpa	Dhuseni, Neta/ Siluwa, Gadakot		22
No. of CBOs/HHs M/F	43	470	484	421
Duration	7/2002 - 3/2004			
SGP Grant (US$)	50,000			
Cofunding (US$) Cash and Kind	148,931		13,212	
Total Grant (US$)	212,143			

Background

The GoN has the provision of providing up to 50% subsidy for the installation of Solar Home System (SHS) in the rural areas. However, even with the subsidy, majority of the poor households in rural areas cannot afford to install the SHS. This project was implemented in the remote VDCs of Palpa and Lamjung districts of Western Nepal. The total number of HHs in Siluwa, Gadakot VDCs (Palpa), Neta and Dhuseni VDCs (Lamjung) are 859, 604, 382 and 318, respectively. Of the total 2163 HHs, 2132 HHs were using fatwood for home lighting. An impact study carried out in the project area showed majority of households using pine fatwood for home lighting. The study also revealed that a mature pine tree yields 120-150 kg of fatwood and the tree dies after the extraction of fatwood.

Main Objectives

Promotion of SHSs along with sustainable livelihood activities of local communities.

Main Activities

Installation of SHS and ICS, repair and maintenance training of SHSs, Support to school, irrigation canal and income generation activities, formation and mobilisation of CBOs.

Major Achievements

The project installed 470 SHSs with the total capacity of 9.03KW. The number of 12 Watt Power (WP), 20 WP, 32 WP, 36 WP and 50 WP were 262, 100, 5, 102 and 1, respectively. The project also ensured after-sales service of the SHS system. Installation of ICS was set as the prerequisites for SHS beneficiaries and a total of 510 ICSs were installed in the project VDCs. The extraction of fatwood was reduced significantly after the installation of 470 SHS, saving 625 pine tree per year which is equivalent to 0.5 ha of well stocked pine forest.

Following the installation of SHS, the number of radio, TV and cassette players increased in the project village by 72%, 10% and 18%, respectively. With this growing electronic market, local villagers opened two photo studios and eight maintenance service shops.

The project also supported a number of socio-economic development activities to uplift the livelihoods of local communities. These activities were successfully conducted with the significant local contributions. Activities such as school support (for 250 desk-benches, 5 chairs, and a computer literacy programme), construction of drinking water, maintenance of a 300m- long irrigational canal, construction of 2.5 km of dirt road and construction of child literacy center and a guest house were successfully carried out during project tenure. Focus was also centered on improving local sanitation and facilitated households in the construction of manure pits and 489 household toilets.

Cofunding Partners

AEPC, CBOs, CFUGs, NEDCO, Peace Nepal, School Management Committee and VDC.

Children studying under solar light

Solar panel in a typical hut in Lamjung District

ALTERNATIVE ENERGY FOR ENVIRONMENTAL CONSERVATION THROUGH WOMEN EMPOWERMENT

Project No	NEP/02/05
Focal Area	Climate Change
Grantee	Rural Community Development Society (RUCODES)
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Kavre/ Kathmandu	Methinkot, Gagalphedi		17
No. of CBOs/HHs M/F	48	1100	552	546
Duration	7/2002- 9/2004			
SGP Grant (US$)	40,000			
Cofunding (US$) Cash and Kind	50,149		16,517	
Total Grant (US$)	106,666			

Background

The project site, Gagalphedi, is adjacent to Shivapuri National Park, which forms the northern border of Kathmandu Valley, whereas Methinkot is situated in the neigboring district of Kathmandu. Although these VDCs are near to Kathmandu, basic development facilities are still lacking. The VDCs lie in lower temperate zone and are represented by the forest type which mainly consists of *Schima wallichii*, *Alnus nepalensis* and *Pinus roxburghii*. The baseline information in these VDCs showed a total of 1233 cattle, which indicated feasibility for biogas plants. The project was designed to link biogas slurry with vermi-compost.

Main Objectives

Promote the adoption of renewable energy and transfer vermi-composting and bio-pesticide technology for sustainable livelihood through organic farming and environment conservation.

Main Activities

Construction of biogas plants and vermi-compost, plantation, organic manure production, formation and mobilization of CBOs, micro credit scheme operation.

Major Achievements

The project facilitated the installation of 435 biogas plants and 516 ICS in the VDCs. Likewise, 435 HHs were engaged in organic manure production through vermis (earthworm) farming and 51 members in bio-pesticide production. At first the members used to farm vermis in a basket but as the vermis started to multiply the farming has been shifted to bigger space in farmyard. The project developed a resource and training centre in Katmandu and initiated training programme on vermin-culture. The grantee linked the programme with Nepal Coffee Promoter's Association regarding the sale of vermi-compost so that the Association could produce organic coffee.

A women co-operative called Gagal Community Coordination Committee had been formed to promote earthworm farming in larger scale. The cooperative also built a community building and planted over 17,000 tree and fodder sapling in community forests, private lands, and erosion-prone riversides.

Cofunding Partners

AEPC, Biogas Support Programme (BSP), National Agriculture Research Council, Solidarity France Nepal, Participatory District Development Programme (PDDP)/UNDP, VDCs and CBOs.

The vermin-compost -the black gold for farmers. It improves productivity without degrading soil.

Earthworm (Acenia fetida) is used to produce vermin-compost

LAND DEGRADATION

Introduced in October 2002 after the second GEF assembly in Beijing, land degradation is a relatively new focal area and supports the implementation of United Nations Convention to Combat Desertification (UNCCD). Nepal has ratified the UNCCD and hence is eligible to receive grants under this focal area.

The main causes of land degradation in Nepal are inappropriate land use, mainly unsustainable agricultural practices; overgrazing; and deforestation. These practices are most prevalent in Siwaliks, Chure and Mahabharat hills. In addition, the issue of land tenure rights for traditional slash-and- burn (Khoriya) farmers has not been wisely addressed yet. SGP has supported communities in organic farming, shifting cultivation, study on arsenic contamination in land and underground water, and watershed management. Following two of the land degradation mitigation projects have been briefly described in this chapter:-

1 Mitigation of effect of greenhouse gases through controlling slash and burn practices

2 Using Nature to Remove Arsenic

MITIGATION OF EFFECT OF GREENHOUSE GASES THROUGH CONTROLLING SLASH AND BURN PRACTICE

Project No	NEP/03/11
Focal Area	Climate Change
Grantee	Manohari Devleopment Institute Nepal (MDI-Nepal)
Operational Programme	OP#6 - Promoting the adoption of renewable energy by removing barriers and reducing implementation costs

Location Districts/ VDC/Tot. Ward	Makwanpur	Manahari, Kankada and Handikkhola		12
No. of CBOs/HHs M/F	44	1787	540	753
Duration	6/2004 - 12/2006			
SGP Grant (US$)	49,000			
Cofunding (US$) Cash and Kind	101,477		45,281	
Total Grant (US$)	195,758			

Background

The Slash and Burn agricultural with a long fallow period is considered as one of the sustainable farming practices. But with growing population and scarcity of land, the slash and burn agriculture has been practiced in a short fallow period. This has far reaching consequences on environment as well as productivity. The problem is even worse in Nepal due to its rugged terrain as soil erosion is severe in these barren slopes. In marginal land with steep slopes in Makwanpur district, Central Nepal, slash and burn agriculture locally known as Khoriya is still practiced by indigenous people like the Chepangs and Tamangs. They cultivate maize after burning the vegetation just before monsoon rain. The burning also contributes to the emission of greenhouse gases and soil loss due to wind erosion. The aim of the project was to rehabilitate the Khoriya land.

Main Objectives

Improvement in slash and burn practices by adopting various agro-forestry models such as agri-silvi-pastoral, agri-horticultural, alley cropping, and the adoption of various Sloping Agricultural Land Technology (SALT) methods to ensure sustainable level of productivity.

Main Activities

Initiate agro-forestry models with SALT technology, installation of ICS, biogas, solar home system, development of micro-irrigation systems and watermills, organic farming, goat rearing and marketing.

Major Achievements

The result of the project was outstanding as the enthusiasm of the community was equally matched by the generous support from donors and commitment from grantee. It could be regarded as one of best success stories of how partnership can trigger synergy in development and environment management. The project was able to control on slash and burn practices (shifting cultivation) in the project area. Around 438 ha of sloping marginal land was brought under agro-forestry with SALT technology, where local villagers successfully planted cash crops like banana and pineapple along with nutrient recycling tree species such as *Leucena* and *Melia*. The community members planted over 600,000 plants which include banana (134,651), pineapple (113,817), fodders (204,693), NTFPs (143,806) and other local fruit varieties. In doing so, a total of 44 community organizations with 1,667 members from 1,524 households had been mobilised. These community organisations were also engaged in saving and credit activities and generated over US$ 38,900, which was being mobilized in various consumptive and productive works. Most of the beneficiaries from the project included indigenous groups such as the Chepangs, Tamangs and Dalit (so called low caste people). The villagers had earned a total of US$ 40,000 in 2006 from the sale of banana and other fruit crops and also helped curtail food deficiency in the village. With this conversion of marginal Khoriya land to productive agroforestry land, the land value had been increased to 33-66 folds. The project also supported in promoting renewable energy technologies which included installation of 230 Solar Home Systems, 699 improved cooking stoves, 28 biogas plants and 5 improved water mills. The project developed a community learning centre in Rupachuri village where more than 500 visitors including Mr. Finnthilested, Danish Ambassador have visited the project site.

Cofunding Partners

AEPC, Royal Danish Embassy, German Development Fund, Poverty Alleviation Fund, World Food Programme, DDC, VDC, CFUGs and CBOs.

Agroforestry at slash and burn (Khoriya) land.

Banana plantation along the road side

Project No	NEP/04/03
Focal Area	Land Degradation
Grantee	Save the Environment of Nepal, Rautahat
Operational Programme	OP#15 - Sustainable land management

Location Districts/ VDC/Tot. Ward	Rautahat/ Nawalparasi	Santapur, Bisasaya		22
No. of CBOs/HHs M/F	15	150	N\A	N\A
Duration	4/2005 - 9/2005			
SGP Grant (US$)	27,815			
Cofunding (US$) Cash and Kind	10,268		15,239	
Total Grant (US$)	53,322			

Background

Arsenic is one of the slow poisons which enter human body mostly through contaminated water. The regular intake of Arsenic may cause diseases such as melanosis and hyperkerotosis which ultimately leads to ulcer and cancer. In 2002, a survey on arsenic (poisoning) was conducted in 20 Terai districts of Nepal. The result was rather shocking. Of the 21,763 tubewells tested, 5 percent exceeded 50 ppb and 21-31% exceeded 10% (the WHO standard permissible arsenic level for drinking water is 10 ppb). The survey also showed that 10 million people in Terai use wells for drinking water. This means that at least 3.1 million people are at risk from arsenic contamination. In 2003, the preliminary result of a study in Nawalparasi district showed that the soil from grazed land adjoining the soil of the jungle have twice the level of soil arsenic than the soil in the jungle. The higher content of soil arsenic in non-jungle or grazed land indicates that jungle plants uptake arsenic from the soil. The project aimed to provide arsenic-free water and reduce arsenic poison, and study arsenic cycle in nature.

Main Objectives

Research in Arsenic (identifying the relationship between jungle plants and arsenic uptake) and soil near the wells from both the forest shallow tube wells and nearby deforested village wells. Promote awareness on arsenic poisoning and demonstrate community members the techniques of removing arsenic from drinking water by using a plant fern.

Main Activities

Conduct Research on Arsenic content in tubewells and jungle plants, organize workshops for local schools, women groups, community forest user groups and health workers; create awareness about the consequences of arsenic poisoning in human body.

Major Achievements

The project organized a total of 35 workshops at village, school, university and national level to disseminate information on arsenic poisoning, related health hazards and its possible prevention. The project mobilized existing eco-clubs, farmers' groups and CFUGs in managing arsenic-free drinking water at the household level and distributed 150 filters to community members. The project was also instrumental in conserving Madhar Pond in the area. The Madhar Pond Development Committee put a ban on fishing, stopped water pumping from the wetland in dry season. The sighting of different species of birds like the crane and other animals is indicator of wetland resurgence.

The research on 'Using Nature to Remove Arsenic' revealed some interesting facts. The analysis from 88 native plants showed that 98% of plants take up concentration of arsenic. It also showed that the wetland soil accumulates up to 5 times the arsenic concentration. The soil pit analyses showed that there was decrease in arsenic level in jungle soil pits down to 30 inches. Although the top part is higher in arsenic level than the non-jungle pits, the jungle pits showed rise in arsenic uptake in roots with the depth of the pit. Arsenic in the non-jungle pits increased with depth, suggesting that deforestation does have an effect on increasing available arsenic which can potentially leak to groundwater. The soil cores reveal that sediment higher in volcanic and iron ore grains contain higher level of arsenic as well as those with higher organic debris. This research result was quite encouraging and a big bonus for Kathmandu University, which was able to generate resources to initiate the regional project titled Indo-Gangetic Plains and Yellow River Groundwater Management Project.

Cofunding Partners

Filters for family and Madhar Pond Protection Development Committee.

A simple modified filter can remove arsenic

Testing Arsenic in Tube well at Rautahat District

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