United Nations Environment Programme

Pilot demonstration project on the sustainable use and management of resources in the Arun valley

Evaluation report on project GF/5022-01-01

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Acronyms and abbreviations

ASEAN	Association of South-East Asian Nations
CFUG	Community forest user groups
DDC	District Development Committee
FECOFUN	Federation of Community Forests User Groups Nepal
GEF	Global Environment Facility
IDRC	International Development Research Centre
IUCN	World Conservation Union
LFA	Logical framework analysis
MAPPA	Medicinal and Aromatic Plants Programme in Asia
NETTLAP	UNEP Network for Environmental Training at Tertiary Level in Asia and the Pacific
PAC	Programme Advisory Committee
PRA	Participatory rapid appraisal
RRN	Rural Reconstruction Nepal
ROAP	Regional Office for Asia and the Pacific
SACEP	South Asia Cooperative Environment Programme
SALT	Sloping agriculture land technology
SARO	South Asia Regional Office
SODEC	Society Development Centre
UNEP	United National Environment Programme
VDC	Village development committee

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Executive summary

A. Introduction

1. The project's overall goal was to promote the conservation, sustainable and equitable use of biodiversity resources through community participation, management and use of traditional knowledge. The project was located in the three village development committees of Num, Hatiya and Pawakhola in the Arun Valley of Sankhuwasabah district in the north-eastern part of Nepal. Intense grazing and browsing by livestock, unrestricted forest cutting and hunting by local people and herders, shifting cultivation and unsustainable extraction of herbal medicinal plants were identified as the major problems. The major aim was to facilitate a process and organize the local communities' knowledge base, collective strength and institutions in the sustainable use and management of natural resources. Biodiversity conservation, community forest management and sustainable livelihood and capacity-building and the installation of micro-hydro-plants were the major activity components of the project.

B. Evaluation results

2. The project has generated much valuable information about the biodiversity and natural wealth of the area, including information regarding community uses and needs of forest and other resources of the area. While many aspects of community-based assessments were integrated in the operational plans of the community forestry user groups, the findings of the scientific studies could not be integrated into the project. If one problem was the time taken to complete the studies, the other was that the studies focused on longer-term recommendations of a more scientific nature and concentrated less on the immediate needs of the community.

3. The project has extensively facilitated the organization and mobilization of community-based organizations in improving forest management practices and in establishing different testing and demonstration plots for chiraito cultivation, multipurpose plant nursery, vegetable production and kitchen gardening and tea nursery. In an environment that was largely characterized by open access and the unregulated harvesting of all forest products, community management of forest resources and regulation of harvesting was a major change. With the active participation of all the community forestry user groups in the management, some benefits are already apparent. This approach also fits well with government approach to community forestry and the risks expected of a mismatch between project focus and government priorities appear to have been reduced.

4. The introduction of micro-hydro-plants, peltric sets and solar units has brought electricity to the area. The systems are working and about 450 households have electricity in their homes. Adequate measures to ensure sustainability appear to be in place. In addition, environmental awareness-raising has been an important activity of the project at the local level.

5. Some components that were not given adequate attention are equity and benefit-sharing and the use of electrical energy for processing chiraito.

6. The overall assessment is that the project has been considered by the local people a very useful intervention. Their participation in all aspects of the project including meeting some of the significant costs is a good indication of their ownership and support.

C. Lessons learned

7. Better planning is needed to benefit from expensive scientific studies. Four scientific studies were completed under the project. The scheduled completion date (the synthesis report completion date is February 2003) made it difficult to alter the project activities, as these were already in their last year of functioning. The studies have also recommended mostly long-term activities, such as maintaining a biodiversity register and

developing the area as a so-called "bio-village**",** that do not directly support the existing community-based project activities.

8. More clarity is needed in terms of specific activities to tackle equity issues. Although given emphasis in the project document, how this is to be achieved is not clearly identified. Greater clarity is needed in terms of which aspects of equity – including, among others, gender, ethnicity, income and asset distribution and geographical distribution – are being addressed by the project and how. There was no baseline analysis of equity issues on which a specific set of activities could be implemented.

9. A conscious effort is being made to ensure that the project follows the right course. A mid-term evaluation could have identified some of the above-mentioned issues and looked into other aspects of the project and recommended needed changes in direction, activities and budgetary allocation if found necessary. There was no external review on the course taken by the project.

10. Greater care is needed while designing project advisory and steering bodies so that the members feel a responsibility to participate and contribute. Almost one third of the programme advisory committee members could not or did not participate. Either prior commitment was not obtained or something else prevented their participation. If participation is considered essential then efforts must be made to ensure that this happens.

11. Working in a conflict situation is a new experience that requires learning by doing in the conflict area. This needs to be monitored and lessons distilled for the future. The flow of project activities was influenced by the changing intensity of the conflict at the local level. All the different organizations at the local level had to make adjustments, including negotiation with the conflicting parties to ensure that project activities continue. There must be some documentation of this experience.

D. Conclusions

12. The project has succeeded in mobilizing the community to manage its forest resources. It has also succeeded in bringing electricity to the area and raising environmental awareness. While there are encouraging signs that the communities and other stakeholders will sustain activities, new problems will require continuing support and inputs to the community groups. People in the three village development committees are experiencing significant changes for the first time in their lives. There are community-level institutional changes, such as working through user groups and household level changes – access to electricity, vegetable growing, better awareness about improved cultivation of non-timber forest products. While it is in the interest of the community and the households to continue these activities, there are new problems, challenges and opportunities that require external guidance, support and intervention if the gains made so far are to be sustained.

13. Small project areas always face the danger that they might become islands in a sea of environmental degradation. What is happening to the larger area surrounding the three village development committees? There is a strong need to develop a bigger integrated area development plan for the entire Arun Valley. Three village development committees represent only a very small part of the valley. If degradation continues unchecked in the larger area, this will make it increasingly difficult to conserve this small area. It is therefore essential that adequate attention be given to the larger area by bringing together all the different stakeholders in the greater Arun Valley.

E. Overall assessment of the pilot demonstration project on sustainable resource use and management in the Arun Valley

14. The following are the ratings for the pilot demonstration project on the sustainable use and management of resources in the Arun Valley:

CATEGORY	RATING	REMARKS
(a) Achievement of objectives and planned results	3	Weak on equity and benefit-sharing, trade, marketing and processing of non-timber forest products. Weak on regional sharing of findings.
(b) Attainments of outputs and activities	2	Most activities implemented and outputs available except for a few (see table 1).
(c) Cost-effectiveness	3	Project has experienced delays and difficulties in transporting materials to remote area. Some funds still remain unused.
(d) Impacts	3	Apart from impacts of infrastructure (energy, drinking water and irrigation), other impacts will take longer to be determined.
(e) Sustainability	3	Organizational arrangement at the local level looks reasonable. Some benefits from project activities will continue. Mainstreaming project activities, policies and regulatory framework and establishing financial and economic instrument are relatively weak, however.
(f) Stakeholder participation	2	Excellent at district and local level. National and regional level could have been better.
(g) Country ownership	3	Local level strong. District level reasonable. National level weak.
(h) Implementation approach	2	Effective partnership at district and local level. Incorporation of lesson from other projects, monitoring and evaluation, use of logical framework analysis (LFA) could have been stronger.
(i) Financial planning	3	Some remaining balance in project funds. Not clear about the extent to which committed co-financing support by UNEP was fully used. Reporting on use of funds as per project outputs activities not required.
(j) Replicability	3	Pilot demonstration model results yet to be fully established. Regional replicability supported only by information sharing.
(k) Monitoring and evaluation	3	Monitoring through progress report and substantive report reasonable. No evaluation by UNEP. Internal evaluation reports not kept. Discussion with individual project staff-members revealed regular evaluations and feedback, however.
Overall rating	**3**	

Note: The UNEP rating system used is as follows:

1=	Excellent	(90– 100 per cent achievement)
2=	Very good	(75–89 per cent)
3=	Good	(60–75 per cent)
4=	Satisfactory	(50–59 per cent)
5=	Unsatisfactory	(less than 49 per cent)

I. Project identifiers

15. The following are the project identifiers.

Project title:	Arun Valley sustainable resource use and management pilot demonstration project
Project number:	GF/5022 – 00
Geographical scope:	Nepal
Implementation:	Rural Reconstruction Nepal (RRN) PO Box 8130 Lazimpat, Kathmandu Nepal
Duration of the project:	36 months Commencing: February 2001 Completion: January 2004 (extended by three months to April 2004)
Cost of the project:	US$ 800,000

II. Introduction

A. Background

16. The project area of the Arun Valley consists of three village development committees in Sankhuwasabah district in the north-eastern part of Nepal, which is connected to the Tibetan Plateau of China (map 1). In terms of its physical geography it is part of a high mountain zone but in biological and climate terms**,** it covers all the bioclimatic zones of the country, ranging from 800 m to 6,000 m. A total of 8,952 people of mixed ethnicity inhabit the project area, with a population density and average household size of 14.09 and 5.07 respectively.

17. The project area lies on the western edges of the Eastern Himalayas, one of 18 biodiversity hot-spots of the world, and is also considered one of the deepest valleys in the world. Dominated by a monsoon climate, rainfall is over 4,000 mm per year and the area also harbours cloud forests – absent from other parts of Nepal. The area is renowned for its rich biodiversity, with over 30 types of natural vegetation and over 3,000 species of vascular plants. It has a large abundance of rhododendrons (25 species out of Nepal's 30), 50 species of prime roses, 45 species of orchids, 80 species of fodder trees and shrubs, and over 60 species of medicinal plants. The birdlife is also remarkable, with 325 species. There are over 25 species of mammals.

18. People, mountains and monsoon have come together to produce a complex blend of diversity, opportunities and pressures. The poor people of the area had high expectations of change from the proposed Arun III large-scale hydroelectric project. The project failed to materialize, however, and the poor people of the Arun Valley continue to eke out a meagre living from forest encroachment, slash-and-burn ("khorea") cultivation, overgrazing and illegal hunting and poaching. The project areas lie outside the Makalu Barun National Park and there were no conservation and forest management activities by any agency.

19. Following mounting national and international concerns about the threat to biodiversity resources of global significance in the Arun Valley, urgent action at the local level to address the major problems was considered imperative. Following intensive discussions a number of threats were identified: intense grazing and browsing by livestock, unrestricted forest cutting and hunting by local people and herders, shifting cultivation and unsustainable extraction of herbal medicinal plants. These problems could be addressed by reducing human pressure on forest and pristine ecosystems, by protecting

endangered and threatened species and their habitats, by promoting awareness and social consciousness among local communities about nature conservation and by facilitating greater participation of the local people in the management of natural resources.

20. UNEP worked together with the organization Rural Reconstruction Nepal (the local executing agency) to seek Global Environment Facility (GEF) funding for the pilot demonstration project on the sustainable use and management of resources in the Arun Valley**.** The GEF trust fund provided $625,000 to the project, with additional contributions from UNEP ($50,000), RRN ($75,000) and local sources ($50,000).

21. The main aim of the project was to mitigate major threats to natural resources, especially the forests and water, from human activities and to evolve a pilot management project with locally tested and proved solutions for integrating community participation in the management of natural resources (forest, soil and water) which would integrate traditional knowledge, skills and principles. The primary objective was to evolve, analyse and organize the traditional knowledge of local communities and apply them in the conservation and sustainable use of biodiversity in the eastern watershed area of Arun river, one of the world's unique mountain ecosystems with globally significant biodiversity. The major emphasis was to facilitate a process and organize the knowledge base of local communities (understanding and experiences), collective strength and institutions in the sustainable use and management of natural resources. It had four major components: biodiversity conservation, community forest management, sustainable livelihood, and capacity-building and the installation of micro-hydro-schemes.

B. Evaluation objectives and scope

22. The overall objective of the evaluation is to establish the impact of the project and to review the implementation of planned project activities, outputs and outcomes against actual results. Lessons from project implementation have been identified and documented and recommendations made. The evaluation covers all key activities undertaken as described in the project document (GF/5022-00) (see annex I below).

C. Methodology

23. The methodology as outlined in the terms of reference for the evaluation (GF/5022-01-01) has been followed:

(a) Desk review of project half-yearly reports, substantive reports, workshop reports, (annex II);

(b) Review of all published scientific studies, newsletters, CD-ROMs (annex III);

(c) Interviews with former and present RRN staff (annex VII);

(d) Consultation with UNEP/UNEP GEF staff;

(e) Consultation and interviews with government representatives, district development committees, village development committees, other agencies such as the South Asia Cooperative Environment Programme (SACEP), the Association of South-East Asian Nations (ASEAN), the World Conservation Union (IUCN), the Medicinal and Aromatic Plants Programme in Asia (MAPPA) and the UNEP Regional Office for Asia and the Pacific as available in person, by phone and through email.

D. Limitations of the evaluation

24. It has been almost four years since the project started and eight months since it was formally ended. During this period there was also no mid-term evaluation. Staff-members have dispersed and so has some of the materials. Even the web site has only one page of information on the project. Chasing after former staff-members engaged in other activities has not been easy. The project area has been seriously affected by the increasing insecurity in the country. People from the area have dispersed and have not been easy to locate for consultations.

25. The relatively short duration of the project makes it difficult to assess the actual impact on the major problems identified simply based on progress reports and interviews without a comprehensive field-based evaluation. To undertake such an evaluation would not be feasible, however, given the present insecurity prevailing in the area.

III. Evaluation of the project

A. Objectives of the project

26. The project's overall goal was to promote the conservation and the sustainable and equitable use of biodiversity resources of the area, through community participation and management. This was broken down into nine objectives, ten outcomes and five activities related to the outcomes. For each objective, outcome and activity, a set of indicators was also identified.

27. The objectives and outcomes are reviewed after a discussion of the implementation of the project activities. A summary table showing the implementation rating of the project activities is provided in table 1.

B. Implementation of the project activities

1. Generation of baseline social, economic and biophysical information, scientific assessment (inventory) and monitoring of biodiversity resources

28. Generating baseline information on resource use patterns, the demographic situation, existing development efforts and their impacts on people, resources and biodiversity was a basic objective of the project and therefore an important activity with 16 per cent of GEF support allocated for this purpose. Baseline social and economic information was generated for the village development committees of Num, Hatiya and Pawakhola, involving seven community forest user groups. This covered village development committee-level information: location, area, cultivated area, forest area, total population, number of facilities, livestock characteristics, in addition to household information such as household size, sex, source of income and expenditure patterns.

29. The other studies undertaken included studies of forest resources and consumption patterns, an inventory of five community forest user groups by non-timber forest product resources and an operational plan of five community forest user groups prepared in association with district forest staff and the Federation of Community Forest User Groups Nepal (FECOFUN).

30. Scientific studies carried out by specialized firms in detailed consultation with local knowledgeable people focused on the inventorization and assessment in three village development committees of, first, forest biodiversity; second, agricultural biodiversity; third, general biology, ecology and mode of reproduction of threatened wildlife species; and, fourth, synthesis.

31. The coverage and findings of some of the scientific assessments are briefly discussed below.

(a) Forest resources and consumption survey (completed in September 2002)

32. This describes the usage of the forest resources timber, fuel wood, fodder, ground grass, leaf litter and the preference ranking of forest products, including the assessment of other forest resources, such as climbers, mushroom, lichens, wild animals and avifauna. Other items described include non-timber forest products, an ethno-botanical review, the changing scenario of community forests, traditional forest management systems and problems of community forest user groups.

33. Six community forest user groups and 89 respondents participated and have identified many practical issues regarding forest management and non-timber forest product cultivation (people-preferred species. These include the identification of different species of plants preferred by the local people for use as firewood, fodder and timber. It

also identified plants used by different ethnic groups in their family rituals and traditional forest management practices. The other interesting finding is that, according to the respondents, even in the short time since the project on forest protection was launched, many of the birds and some of the threatened wildlife are already beginning to reappear. The study is a comprehensive coverage of the forest uses in the three village development committees of Num, Hatiya and Powakhola.

(b) Comprehensive report on forest and agro-biodiversity

34. As the title suggests, this 62-page report, completed in 2002, covers a wide variety of issues such as biophysical features, faunal diversity and threatened wildlife. It also examines agro-biodiversity and proposes a plan of action and a monitoring and evaluation system. Its main recommendations include the establishment of a local register of biodiversity resources and indigenous knowledge for systematic bio-prospecting exercises geared towards an exploration of commercially valuable genetic and biochemical resources. It also suggests the development of a bio-village concept for integrating local resource endowments with biotechnology, bio-information, renewable technology and communication technology. It emphasizes the need for strict land use planning, productive management of forests and the development of eco-tourism.

(c) Inventorization and assessment of biodiversity resources

35. This was conducted in three village development committees of Sankhuwa Sabah in the Arun Valley, in February 2003. The focus of this 51-page report is on agro-biodiversity and covers the areas of crop production, vegetable diversity, cash enterprises, fruit diversity, crop reproduction, food security, livestock and fodder diversity, indigenous knowledge, ethno-botany and threats to agro-biodiversity and endangered species. The report points out that there are many land races whose genetic potential with respect to yield and resistance to insects and diseases needs to be assessed. Both vegetables and fruits are scarce in this area and the potential for their development is quite good. Cardamom farming should be integrated under the sloping agricultural land technology (SALT) technique in areas affected by shifting cultivation.

(d) Final report No. 3 on the general biology, ecology and mode of reproduction of threatened wildlife species (February 2003, 51 pp.) in the village development committee No. 3 of Sankhuwasabah district in the Arun Valley

36. All three village development committees are biodiversity hotspots and the area is rich in herpeto-fauna, fish and insect life, many of which are still undocumented. Some of the birds and animals are seen as crop raiders. Illegal trafficking and poaching has been reduced. This study underscores the need for more careful documentation and research of the area, given its largely unknown biology and ecology. Seventeen new species of insects have been reported from the Arun Valley alone. The loss of forests from cardamom farming, shifting agriculture and indiscriminate grazing are major threats to the wildlife of the region.

(e) Final report No. 4: synthesis (February 2003, 111 pp.) on the inventorization and assessment of biodiversity resources in three village development committees of the Sankhuwasabah district in the Arun valley

37. This collates what was previously identified in a synthesis of the different reports – proposing such actions as preparation of a land-use map, the creation of a village development committee register of biological diversity, developing protocols for bio-prospecting, mapping out forests and the preparation of conservation plans including those for sacred forest sites. Other actions proposed include discouraging the private use of community forest areas, such as the leasing of land for cardamom cultivation, and the development of both cooperative farming and processing for cardamom and chiraito, demarcating the Arun Bird Sanctuary, developing and awareness of materials, forming a district wildlife management authority, the establishment of the scientific culling of wildlife and the development of a bio-village.

38. It is pointed out that the proposed measures will help both migratory birds and wildlife crossing to and from Tibet and the Indo-Gangetic plains, as well as maintain the water resources of the area, thereby benefiting downstream populations. There is also a proposal for the comprehensive monitoring of the Arun environment.

39. Where information generation and scientific studies are concerned, it may be concluded that this component of the project has been successfully carried out and completed. Furthermore, some of the findings of the different studies have been incorporated to improve the practical aspects of the project, as follows:

(a) The quality of community-based forest management activities has been improved through a better understanding of the resource base, problems and potentials and by incorporating these considerations in the operational plans of community forest user groups;

(b) Identifying the preferences of local people in terms of different plants and the promotion of preferred species by the project have enhanced its local support and ownership;

(c) A number of critical areas that require longer-term research and development focus (such as the improvement of shifting cultivation) have been identified.

40. A number of clear limitations have also been identified. The detailed scientific assessments were completed in early 2003. While some of the findings from participatory assessment were included in the community forest user groups operational plans, the discoveries from the scientific studies came quite late, leaving little time for the project to incorporate some of the more important ones. In this sense, the studies could have more carefully identified action that could have been undertaken immediately by the project and those that required a longer-term focus.

41. The available studies represent a very valuable contribution for better understanding the biodiversity resources of an important part of the eastern Himalayas. The studies are field-based and provide a comprehensive account of the resources in the three village development committees of Num, Hatiya and Pawakhola. The studies are an important contribution to the limited literature on the critical ecosystem of the East Himalayas.

2. Community-based management

42. Community-based sustainable management and the use of forest resources based on the scientific understanding of forest biomass regeneration and the community needs, designing and developing community and agroforestry systems to meet fuel wood, fodder and timber requirements of the community, development and management of the buffer zone, cultivation of high-value low-volume horticultural crops, apiculture, sericulture and the establishment of small-scale cottage industries for the diversification of economic opportunities were the important components of this activity.

43. The initial focus of the project was on group formation if not already in existence and, if already established, then increasing the group's activity in the management of natural resources. Increasing the number of community forest groups and enhancing their capacity to plan, manage and monitor and participate in other project activities became an important task for the project. At a time when there was an almost complete political vacuum because of the absence of elected leaders and representatives, working with informal groups such as community forest user groups, local non-governmental organizations and other user groups became the obvious choice for the project. This option also became the most practical choice, as insecurity created by the Maoist insurgency left no space for outside organizations to play any role in the local area. The village development committees selected by the project were remote and therefore not part of the regularly visited area by the district development authorities.

44. All of these reasons strengthened the role of the community forest user groups in the project. They became a crucial part of the project implementation set-up. Organized local participation commitment and ownership, such as that demonstrated by the

community forest user groups in the project area, is essential for the sustainable management of local natural resources.

45. When the project started its activities only the Num village development committee had three community forest user groups, registered a couple of years ago. Pawakhola and Hatiya did not have any such community-based organizations and the local people were very sceptical about forming such a body as they felt that it would restrict their free access to and their use of forests. Earlier efforts had not succeeded. Many interactions and community-level meetings were organized for an open discussion of group formation and its advantages and drawbacks. After considerable persuasion, including the information that the project could not operate without the formation of the community forest user groups, the village assembly approved their formation and three new community forest user groups were established.

46. The community forest user groups had overlapping jurisdiction in forest areas. Clear demarcation of these areas and operational plans became necessary. The project helped to prepare these operational plans in association with the district forest office and FECOFUN and became the main annual working plan of the community forest user groups.

47. The capacity development of the community forest user groups both to implement the operational plan and monitor its progress was undertaken. Several training activities were also organized for improving the capacity of the community forest user groups (see annex III). Seeing the activities of the community forest user groups, many villages outside the project village development committees requested that the project helped them to organize into community forest user groups. Wherever feasible these were integrated into ones already in existence.

48. Regular interaction with the different community forest user groups for discussing their problems with the implementation of the operational plans, identifying new forest activities and related training, monitoring, developing non-timber forest products and other sources of income generating activities has continued throughout the project period. Monitoring by members and project staff of the community forest user groups has helped to develop a better understanding of the traditional knowledge available on local natural resources use and management, as well as the scientific knowledge about flowering, fruiting and the trading of non-timber forest products.

49. Community forest user groups have also become the major institutional vehicle for increasing the participation of women in the project activities. Female members of the community were encouraged to participate in the training programmes. The women members of the community forest user groups became very active in the formation of vegetable growing farmer groups. These groups participated actively in sharing know-how on seasonal and off-season vegetables. In addition, members of the community forest user groups participated in the non-timber forest products exposure visits to other parts of the country.

50. There was some confusion about community forest user groups not being allowed to manage non-timber forest products in their community forest areas. After discussions with the district forest office this doubt was resolved, which encouraged community forest user groups to play an important role in local natural resources management.

51. A review of the implementation of this component indicates that the mobilization of the community in the form of community forest user groups was initially difficult but has become an inseparable aspect of the project implementation. The community forest user groups have been involved in all aspects almost by default because there is no space for outsiders in the present context of Maoist insurrection. Some aspects of this component have not been implemented, however. Thus, there was no establishment of small-scale cottage industry for processing local non-timber forest products.

52. It is also not clear whether the arrangements for leasing out marginal forest land to the local community were conducted in a legal manner. This might have been achieved informally, as the area is fairly remote and in the present context unlikely to be monitored carefully by the district forest office.

53. The extent to which the experiences and problems encountered by the Nepal-UK Community Forestry Project was internalized into the formation of the community forest user groups is also not clear. While women's participation is evident, the same cannot be said of the disadvantaged groups. It may be noted that the presence of these groups in the three village development committees was not specifically identified in the social and economic survey and has not been referred to in the implementation of project activities.

54. Livelihood and an income-generating option to reduce poverty and empower local people did not constitute a direct focus but rather was built into their activities. Based upon the requests of the community forest user groups and the endorsement of these activities for the community by the village development committees, a number of income-generating activities were supported in addition to the natural resource management activities. These included livestock and pasture management where training was provided on animal health. On-the-spot vegetable gardening was provided in eight sites with 200 farmers participating. Vegetables seeds and fruit saplings were distributed at a nominal price and collected amounts were deposited in the accounts of respective community forest user groups. Support for drinking water and irrigation was provided along with training on beekeeping.

55. The livelihood and income-generating activities, aside from the forest resources and non-timber forest product activities, constitute a relatively small part of the project. Furthermore, support for activities like training do not always translate readily into additional income for the local people. The report does not indicate how or who benefited from these livelihood-related activities – although it must be noted that all of the activities supported have been based on the requests of the local community forest user groups.

3. Participation approaches, benefit-sharing and testing of suggested options

56. There were a number of interrelated components to this activity – the identification of policy and economic incentives for promoting the local community involvement in forest management, of suitable approaches to the equitable sharing of benefits and the building of stakeholders' capacity to use traditional knowledge for the benefit of biodiversity conservation and sustainability. These aspects were integrated and incorporated in testing different models of participatory resources management approaches for biodiversity conservation and sustainable use.

57. This was the most complex activity of the project. It sought to link local project activities that were small-scale and limited (in duration, coverage and resources) with broader issues of policy and economic incentives, equitable sharing of benefits and the use of traditional knowledge in a manner that would add greater value. Replication possibility was being considered. Given these considerations, this activity has focussed on implementing the following components.

(a) In-situ chiraito seed production

58. Chiraito seed production has been a relatively new activity for locals who were used to harvesting naturally growing plants in the past. The efforts here were to identify appropriate areas in the forest, demarcate these as seed production areas and respective community forest user groups were responsible for the monitoring of these in-situ seed production areas.

(b) Establishment of chiraito cultivation in all three village development committees

59. The main objective here was to compare in-situ and ex-situ cultivation of chiraito. Three different conditions of agro-ecology (high altitude, middle hills and valley bottoms) and land condition (natural forest, cultivated private land and shifting cultivation land) were used to establish the six sites.

60. Seeds were collected from naturally occurring plants and the monitoring of the impacts of transplanting, seed broadcasting, weeding and no weeding and other factors were undertaken. This was implemented both by community forest user groups and project staff. In all, 26 members of community forest user groups also participated in these trials on their own agricultural land.

61. The initial results (January–June 2003) are considered satisfactory with 40 – 60 per cent germination in all agro-ecological settings indicating a wide range of areas for cultivation in the future.

62. The focus on chiraito has been prompted by the preferences of the local people, who reported that some 35 – 40 per cent of their cash income derived from its sales. Because of excessive harvesting in the past, collectors had complained that regeneration had been limited. After the introduction of community forest user groups managing the forest area and regulating the harvesting of forest products, the conditions were reported to have improved in a short period of time. Chiraito cultivation, even on private land, was encouraging. The initial lack of firm knowledge in the areas of seed collection, preparation and propagation has been improved by the project as it has widely disseminated the necessary expertise among the members of the community forest user groups.

(c) Multipurpose plant nursery

63. In response to the demands of the community forest user groups, five plant nurseries were established. They included plants for timber, fodder, herbs, medicinal plants, non-timber forest products and fruits. These nurseries used local knowledge in managing the different plants.

(d) Vegetable production and kitchen gardening

64. Vegetables are largely absent from the project area. Indeed, except for a few locally available wild green plants, people did not cultivate them at all. Many childhood diseases in the area were related to the deficiency of vitamins and minerals. As a result, a community meeting was organized to discuss the importance of the vegetable to human health, especially with regard to children and lactating woman. Women and school children were mobilized to set up vegetable nurseries in their backyards. On-the-spot training on kitchen gardening was provided.

(e) Tea nursery at Matsypokhari

65. This was established in response to the request of the village development committee for technical support. The committee provided the land and the project provided training to project staff, supported one nursery employee and helped to distribute 2,000 seedlings and 8,000 mature tea stems.

66. The project has successfully established demonstration plots which test options for high-value low-volume products. It has also extensively used community resources (primarily that of land and labour) in these demonstration activities. While the initial results, based on survival rates, are reported to be encouraging, more time is needed to determine clearly the overall performance of these demonstrations. Beside the inherent interest of the community in following through each demonstration, it is not clear who would do the monitoring, keep records and make assessments of their overall performance.

67. The testing of policy and economic incentives is quite obscure. These tests would have been appropriate if production was linked with the establishment of improved processing. As indicated earlier, however, processing and using electrical energy has not been implemented owing to a lack of suitable technology in the area.

68. Similarly, the testing of suitable approaches to an equitable sharing of benefits has not been apparent. While it is clear that there has been a substantial participation and input by the community, the question does remain as to the extent of participation in activities by disadvantaged groups.

69. The specific application of traditional knowledge has also been limited and this may be due to the inherently few possibilities where the value added would be greater than what the community was already receiving. One area where traditional knowledge was used has been in the identification of preferred plants. Another area of its input was the in-situ site selection and the cultivation of chiraito.

4. Establishing a micro-hydel scheme and training skilled workers and a company manager

70. This activity was allocated nearly 50 per cent of the overall budget and, notwithstanding many obstacles, the project has succeeded in providing electricity to the households in its allocated area. Micro-hydel plants (i.e., plants with a capacity of up to 500 kW) were installed in two locations of the Num village development committee, benefiting a total of 254 households. Peltric sets were also installed in two locations, one each in the Pawakhola and Hatiya village development committee, benefiting a total of 62 households. Training was provided to the operators and the managers of both the micro-hydro plants and peltric sets. Related to this project was the provision of drinking water supplies benefiting 18 households and 50 students in the Pawakhola village development committee, with 78 households benefiting from an improved water mill. It should also be mentioned that one village development committee received a solar system in lieu of the micro-hydro plant (details may be found in annexes IV A and IV B below).

71. If it were not for the difficulties encountered more people could have benefited from this activity. The first major problems were encountered in transporting the micro-hydro plant equipment. Because of the insecurity of the area, private operators did not participate and an army helicopter was used, which on account of its heavy work schedule, could only transport the goods three months after it had been booked. Also because of insecurity, each part of the electromechanical equipment was released only after a thorough examination by the army. Some equipment, such as the electric wires, was released only in limited quantities, restricting the number of houses that could be connected. In addition, the equipment had to be carried by porters from the district headquarters after it had been dropped by helicopter to the project site. The construction at the plant site was also frequently hampered by the Maoist activities as well as those of the security forces.

72. The community played an important role in making electricity a reality in the project area. A general assembly of the community forest user groups was organized for a public hearing on the activities needed for the establishment of the plants. The proposal for the community to bear all the local costs (about 30 per cent of the total cost), carry out mass plantings, contribute unskilled labour and transport equipment to the project site was unanimously supported. An energy users committee of between seven and eleven members was also formed for the management of the plant, as well as for the distribution of power and the recovery of charges.

73. In Hatiya-4 a micro-hydro power was initially planned but because of the lack of interest and commitment of the local people, this was not put into effect. After some time, however, following a revival of interest in the proceedings, local residents approached the project office and even deposited some funds in its bank account. As planning for the other projects had made good progress, however, a micro-hydro plant was not considered feasible. Instead, a solar system was installed and it has provided lighting to 130 households, one health post and one monastery (see annex IV B).

74. The availability of electricity to 446 households has saved some of the kerosene costs of the households. It has, for the first time, provided lighting inside houses, making it possible to perform many activities not previously possible. Children can study in the evening and people can see their surroundings better in comparison to the relative darkness they lived in before. The extent to which this electricity will affect household use of firewood is not clear, however. First, it is not clear if electricity will be used for cooking. Experience in other areas suggests that the adoption of electricity and all it has to offer will take time. The right equipment, the availability and expense of electricity and the cost of training are all important aspects to be considered.

75. Second, the use of electricity for cardamom drying has not been implemented and one of the significant causes of deforestation in the area still remains unattended. Third, because of security concerns, many potential beneficiaries may have been deprived as the necessary equipment for electrical connections has not been available. Fourth, it is not clear if the disadvantaged groups have at all benefited from the supply of electricity.

76. Thus, while this project activity has been successfully implemented in spite of all the obstacles in its path, it still presents some questions for the future.

5. Awareness-raising, environmental education and dissemination of lessons learned

77. This was an important activity from the point of view of the contribution to the long-term sustainability of natural resources management and the conservation of the biodiversity of the critical ecosystem of the Eastern Himalayas. It was expected that a better understanding of the rich biodiversity of the area and its dissemination to a wider audience would contribute to strengthening conservation efforts, not just at the local level but also at the national and regional transboundary levels. Through the incorporation of environmental education at the local level in the project activities as well as in the schools, it was believed that local conservation efforts would substantially improve overtime.

78. In order to achieve these objectives the project undertook the following activities in the areas of environmental education, of conservation, health and sanitation, and of awareness-raising.

79. In the area of environmental education, eco-clubs consisting of village youth, school children and teachers were established and initiated activities in the area of conservation, health and sanitation, local cultural events, adult literacy training, tree planting on environment day, eco-camping and discussions on environmental issues. Four eco-clubs with 81 members have been very active. These eco-clubs also worked with the project to develop an environmental curriculum and to promote the literacy of women- although initially women were found to be reluctant to participate. Over time, however, 144 women from three village development committees and six community forest user groups participated, 125 of them considered to be literate by the end of the course.

80. In the area of awareness-raising, many workshops at local, national and even regional level were organized (annex III). Training sessions were organized at the local level to improve understanding and skills (annex III). In addition, the project ran the following publication programme:

(a) Production of reports on biodiversity conservation;

(b) Three issues of a conservation newsletter;

(c) Radio programmes;

(d) Arun Valley film in English and Nepali;

(e) Compact disk of the Arun Valley;

(f) Review, planning workshops every six months;

(g) Local-level seminar of stakeholders;

(h) National seminar;

(i) Regional seminar.

81. In spite of the efforts made by the project to generate an awareness of the Arun Valley, a number of limitations are evident:

(a) First, overall interaction with the government appears to have been very limited at the national level, especially with the Ministry of Forest and Soil Conservation. At the district level the support from the respective government was reasonable;

(b) Second, while the project has faced genuine problems arising out of an insecurity in its implementation, the lessons learned regarding conservation and sustainable use in biodiversity hot spots have not been distilled systematically and rigorously. The use of the scientific assessments in the project has been limited. The national and regional seminars have dealt primarily with the general problems of the Arun Valley and of conservation and not adequately with the lessons learned from the implementation of project activities;

(c) Third, both the newsletter and the CD-ROM report mostly on plans and do not discuss the actual achievements and difficulties faced by the project in the course of its implementation.

C. Achievement of project objectives and outcomes

82. The objectives and outcomes, their indicators, the plans made to fulfil the objectives and their achievements are presented below in tables 2 and 3.

1. General baseline information

83. The project has fully met this objective of generating baseline information, which consists of two types. The baseline information of social and economic status was obtained using the community and scientific assessment of forest and agricultural biodiversity, including the area's general biology and ecology. The available reports are careful and comprehensive accounts of the biodiversity resources of the area, including different aspects of traditional knowledge related to them. Some of the findings from these studies were used in tests and demonstrations undertaken by the projects, both the indicators and the plans being appropriate for the objective.

2. Evolving community-based sustainable management

84. The indicator under this objective was effective community-based approaches to forest management. The fact that community forest user groups have been the most important mechanism for the implementation of all the project activities indicates that this objective has been satisfactorily met. Under the outcomes, three of the groups identify testing and demonstration, the indicators also strongly pointing towards a greater community participation, wider benefit-sharing and increased capability among stakeholders.

85. The active participation of community forest user groups has been an important first step in the management of forest resources in an area where forests had an open access policy and suffered widespread degradation. The fact that within a short period after the management regulation of community forest user groups, the natural regeneration of chiraito had improved, some of the birds and mammals were reported to be returning and some of the communities outside the project requested the formation of community forest user groups, points towards a successfully working system where local people realize the benefits of the changes introduced. Bringing the forest areas under the community forest user groups helped to control public access and regulate the use of forest projects. If this trend continues, it will definitely contribute towards improving biodiversity in the future.

3. Using traditional knowledge for the benefit of biodiversity conservation

86. Working primarily through local community groups, there has been an extensive documentation of traditional knowledge in the areas of forest management, agro-biodiversity preservation, use of medicinal herbs and collection of non-timber forest products. Application has focused on promoting the priority preferences of the community. Except for the energy intervention and some of the vegetable seeds, all the other activities in the project have been based on local knowledge, local resources and local inputs.

4. Creating an enabling condition for the conservation of biodiversity:

87. The project pursued this goal by first establishing the community forest user groups, local-level organizations which were more or less responsible for implementing most of the activities. At a time when there was a growing absence of government organization at the local level because of political problems and insurrection, establishing the community forest user groups under the village development committees helped to overcome the institutional vacuum for local natural resources management. The project provided other support in the form of energy inputs, training, awareness-raising and limited scale income generating activities that helped to directly and indirectly reduce the pressure on natural resources.

5. Finding economic and policy incentives to promote the traditional knowledge of communities for biodiversity conservation

88. It was initially difficult to convince the community members to participate in the community forestry user groups. Many viewed them as posing a restriction on their free

use of forest resources. They had, however, also realized that many of the forest products were decreasing rapidly, especially in the case of chiraito, the source of some 35–40 per cent of the cash income of the households. Providing economic support for both in-situ and ex-situ cultivation of chiraito and using the traditional knowledge of the people through the community forest user groups were both important activities of the project. The people have found the initial result to be quite encouraging both in in-situ and ex-situ cultivation. Some of the shifting cultivation areas have also been brought under this test and demonstration. A few more years of experimentation may be necessary to indicate the precise nature of economic and policy incentives needed for sustainable production and harvesting of chiraito.

6. Analysis of possible options for equitable sharing of benefits

89. Women have been encouraged to participate in the community forest user groups. Particular income generating activities were supported due to the demands of the women. It is not clear to what extent the disadvantaged groups have benefited from the project activities.

7. Promoting the use and development of alternative energy renewable resources

90. This is clearly the most successful aspect of the project. Electricity is now available to some of the households in the project area. The extent of reduction in fuelwood needs to be assessed separately. The combined effects of regulated harvesting, a micro-hydro power supply, the use of solar systems and the planting of fast growing trees will contribute towards conservation of the forest resources of the area and needs to be monitored in the future.

8. Exploring and implementing livelihood income-generating activities

91. The project has supported livelihood-related activities such as beekeeping, vegetable growing, fruit cultivation, livestock improvement, irrigation and drinking water projects.

9. Disseminating and replicating findings

92. The project has attempted to disseminate the results through workshops and publications, including the use of audio-visual products.

93. Replication in terms of the scaling up of present project activities and the adoption of project type activities by outside – namely, non project – organizations is yet to be seen. Chiraito production techniques bode well for the future, however.

D. Planning in the light of the outcomes and results obtained

94. Outcomes 1–4 are directly related to the activities discussed above. Outcomes 5, 6 and 7, however, deal with broader issues, going beyond the project. Outcome 5 deals with the regional impact of preserving threatened species. Outcome 6 deals with replicable models of community-based forest resources management and outcome 7 deals with replicable approaches to deal with the root causes of biodiversity loss through enabling conditions.

95. The usefulness of the community forestry user group model has been well tested in other parts of Nepal. Lessons learned from the experiences had in Nepal have been applied with some variations. The model was used by the project as the main institutional mechanism for biodiversity conservation.

96. The use of traditional knowledge in the community forest user group model has been fairly extensive. Given the specific characteristics of the area, major reliance has been placed on the effective use of innovative local solutions and knowledge.

97. Community-based approaches are undoubtedly the most promising solutions for dealing with the root causes of biodiversity loss. Alone, however, they are inadequate and need to be supported by efforts to promote human resources development, diversification of the economy and improvement in basic physical and social infrastructure.

E. Usefulness of the indicators

98. Indicators were provided for all the objectives and outcomes. While some were specific, others were vague. The specific indicators were identified under the objectives of generating baseline information, evolving community-based sustainable forest management practices and promoting the use and development of energy renewable resources. In all of the above objectives the achievements more or less match the indicators.

99. In a number of other objectives, such as using traditional knowledge for the benefit of conservation, creating enabling conditions for conservation of biodiversity, finding economic policy incentives to promote the traditional knowledge of the community, analysing possible options for the equitable sharing of benefits, exploring and implementing livelihood income-generating activities and the replication of findings, the indicators are very broad and reflect changes in processes and conditions that are not specifically attributable to the project alone. The achievement identified in table 2 indicates that some efforts were made to move towards the directions of the proposed indicators for the above objectives. With regard to the outcomes, all the indicators are very broad. One can only say at present that project activities are moving in the general direction of the indicators.

Table 1: Project activity implementation rating

Objectives and activities	Targets planned	Rating
1. Scientific assessment and monitoring of biodiversity resources (including inventory and stock taking)	1. Biodiversity mapping indexing stock taking and inventory	2
	2. Mappings, indexing and inventory preparation of agricultural biodiversity	3
	3. Study of general biology, ecology and mode of reproduction of threatened species	2
	4. Development and implementation of in-situ and ex-situ conservation and sustainable use plan and strategy	2
	5. Monitoring of the biodiversity conservation and its sustainable use.	3
2. Community-based management	1. Engage local communities and stakeholders in the conduct of scientific assessments monitoring, use of forest resources and support for alternative livelihood options	3
	2. Sustainable management and use of forest resources.	2
	3. Designing and developing community and agro-forestry systems to meet fuel wood, fodder and timber	3
	4. Development and management of buffer zone	–
	5. Cultivation of high value low volume horticultural crops	3
	6. Establishment of small-scale cottage industry (Lokta paper making)	–
	7. Formation of CFUGS and establishment of CF in community and degraded forest land	2
	8. Arrangement for leasing out the marginal forest land to local communities	–
	9. Internalize knowledge from the Nepal-UK Community Forest Project	3
3. Conduct participatory approaches for coming up with policy and economic incentives in order to promote local community involvement in forest management-suitable approaches to equitable sharing of benefits-building capacity of stakeholders in using traditional knowledge for the	1. Testing suggested options	3
	2. Formulation through participatory processes involving all local stakeholders	2
	3. Advocacy, networking, seminars and workshops to educational parliamentarians and drafting bylaws if necessary	3

benefit of biodiversity conservation and sustainable use		
4. Establishing micro-hydel schemes and training skilled workers and a company manager	1. Feasibility and detailed design work 2. Finalization and purchase of hydro equipment 3. Construction and installation work 4. Human resources development and training to run and maintain the scheme. 5. User group formation and development of operational modalities including meeting recurrent costs 6. Work our technical support from Arun Hydro-Power Development Company	1 2 2 2 2 –
5. Dissemination of lessons learned on • Use of economic and policy incentive for promoting local community involvement in biodiversity conservation • Equitable sharing of benefits • Building capacity sharing of stakeholders in using traditional knowledge for biodiversity conservation and sustainable use	1. Publication of research findings reports, preparation of manuals 2. In-country seminar and workshops 3. South Asian Regional Seminar 4. Feed into relevant components of SACEP, ASEAN, IUCN Japan, NETTLAP	3 3 3 3

Note: A dash "–" indicates that activities did not happen.

Table 2: Objectives, indicators, plans and achievements

Objectives	Indicators	Means of verification	Achievements
1. Generating baseline information	❑ Study reports, mapping indexing	❑ DDC/VDC village elders, social activity, teachers, interaction household survey using participatory rapid appraisal (PRA) techniques, forest resources survey including others	❑ Socio economic condition baseline generated ❑ 7 Community forest user group (CFUGs) involved in preparing baseline information ❑ Forest resources consumption study prepared ❑ Non-timber forest product resources inventory prepared ❑ Inventorisation and assessment of biodiversity resources in three VDCs.
2. Evolving community-based sustainable forest management practices	❑ Effective community-based approaches to forest management	❑ Study existing practices strengths and weakness, condition of forest eco-systems, interact with stakeholders ❑ Prepare Plans	❑ Operational plans of five CFUGs prepared and implemented incorporating findings from studies and principles of conservation and sustainable use
3. Using traditional knowledge for the benefit of biodiversity conservation	❑ Comprehensive report on indigenous knowledge system	❑ Collect local traditional knowledge from elders, herb collectors, doctors and healer ❑ Identify traditional knowledge application based on discussion with community	❑ Documentation of traditional knowledge ❑ Application in prioritization of plants to be promoted (non-timber forest products and medicinal herbs)
4. Creating enabling conditions for conservation of biodiversity	❑ Viable economic, social, and legislative programmes ❑ Improvement in economic, social and cultural lives by 25%, including plans and programmes	❑ Interaction with community forest group, formation of community forest groups, prepare operational plans for addressing biodiversity losses, promote environmental conservation education, alternative energy and income generating activities.	❑ Community forestry groups established and made the main vehicle for implementation of operational plans ❑ Prepared by the community in consultation with District Forest Office ❑ Micro-hydro plants and solar energy developed ❑ Extensive environmental conservation education through eco-clubs ❑ Income generating activities supported
5. Finding economic policy incentive to promote traditional knowledge of community	❑ Identify policy and economic incentives	❑ Identify, collect information on economic importance of non-timber forest products and help to domesticate important non-timber forest products ❑ Trade and market support	❑ Domestic cultivation of chiraito supported
6. Analysing possible options for equitable sharing of benefits	❑ Greater equity and benefit-sharing	❑ Study distribution of benefits of biodiversity, study causes for inequitable distribution	❑ Women encouraged to participate in CFUGs ❑ Supported income generating activities for women
7. Promotion, use and development of alternative energy renewable resources	❑ Reduction in fuel wood consumption by 25% ❑ 50% of project households use micro-hydro energy	❑ Study energy use pattern ❑ Identify potential sources of alternative energy and facilitate its development	❑ Micro-hydro plants in two areas ❑ Solar plants in one area ❑ Fast growing trees promoted

8. Exploring and implementing livelihood income-generating activities	❑ More sustainable livelihood activities	❑ Develop agriculture base food and non food crops ❑ Develop non-timber forests products	❑ Promotion of beekeeping, vegetable growing and fruit cultivation ❑ Helped to improve livestock activities ❑ Supported drinking water and irrigation project
9. Disseminate and replicate findings, including recommendation of suitable policy	❑ Replication upstream and downstream ❑ Tested policies shared with Governments of Nepal, China (Tibet Autonomous Region) and India ❑ Share in International Year of Mountains 2002		❑ Local workshops ❑ National Sharing workshop ❑ Regional sharing workshop ❑ Participation and presentation in IYM 2002 Meeting ❑ Newsletter **(164 organizations on the mailing list) and about 100 CDs** widely distributed

Table 3: Outcomes, indicators and achievements

Objectives	Indicators	Achievements
1. Tested and practicable methodology for using policy and economic incentive	❑ Facilitate effective participation of local community in natural resources management	❑ Establishment and mobilization of community forest user groups and other user groups for biodiversity/Alternative energy, vegetable and kitchen gardening, non-timber forest products and herb collection
2. Tested and practicable option for methodologies on equitable sharing of benefits.	❑ Increased benefit sharing among stakeholders	❑ Encouragement of women to participate in user groups ❑ Greater transparency about community problem, project activities ❑ Efforts to remove obstacles to participation in community forestry by laws, rules and regulation
3. Tested and practical solutions for building capacity of stakeholders to use traditional knowledge for biodiversity conservation and sustainable use	❑ Increased capability of local community and stakeholders to deal with sustainable management of natural resources	❑ Comprehensive study of traditional knowledge and applications ❑ Potential traditional knowledge integrated in project activities in community forestry, non-timber forest product development, hebal nursery
4. Dissemination of lesson learned ❑ Use of economic and policy incentives ❑ Equitable sharing of benefits ❑ Building capacity of stakeholders	❑ Production of workshop, seminar and study reports, newsletter, audiovisual indicating, how and where the information is being disseminated	❑ Natural resources management training on herbal medicinal plants forest management, non-timber forest product management, community forestry resources assessment, nursery man training ❑ Technical skill development training ❑ Visits ❑ Environmental awareness and adult literacy classes ❑ Livelihoods training on animal health, beekeeping, vegetable and kitchen gardening ❑ Local, national, regional sharing workshops, newsletter, film and web site, CD
5. Regional impact of preserving	❑ Increased partnership with Government for the benefit of biodiversity conservation and natural resource	❑ Regional workshop, web site

threatened species	management	
6. Replicable models of community-based forest resources management	❑ Biodiversity conserved in one of the world's most unusual mountain ecosystem	❑ Greatly strengthened community institutions actively participating in conservation and sustainable use of biodiversity resources and sharing of experience.
7. Replicable approaches to deal with the root causes of biodiversity loss through enabling conditions	❑ Effective community based enforcement of controlling access to and use of forest resources ❑ Effective policies and programmes addressing the root causes of biodiversity loss – replication of acquired knowledge and skills	❑ Project experience and activities shared in regional workshops ❑ Extensive distribution of publication ❑ Web site and production of films, CD

F. Project management

1. Institutional arrangements

100. UNEP was the GEF implementing agency for the project, which was executed by RRN, an non-governmental organization in Nepal with over 500 staff-members and volunteers engaged in rural development and conservation activities in various districts, including remote areas such as that of the Arun Valley. RRN was expected to establish close working relationships with local, national and other organizations for the implementation and meaningful dissemination of the project. Representatives from the district line agencies of the Government participated in the programme advisory committee meetings and in discussions with the community about the choice of project activities, their location, implantation and possible inputs from these organizations.

(a) Programme advisory committee

101. A programme advisory committee was formed to play both facilitatory and advisory roles necessary for the smooth implementation of the project. It was chaired by the chair of RRN and co-chaired by the chair of the of the Sankhuwasabah district development committee. It had representatives of other line agencies in the district such as that of the forest, agriculture and soil conservation offices, a number of non-governmental organizations, in particular, the Arun Hydro Power Development Company, community-based organizations in the project site, representatives of International Development Research Centre (IDRC) South Asia, UNEP, SACEP, ASEAN and IUCN. The project director served as the member secretary for the project.

102. A total of four programme advisory committee meetings were organized. It is clear from the list of participants (See Annex V) at these meetings that there were quite a few absentees. While community-based organizations were largely absent from the first two programme advisory committees, they have participated in the latter two. The participation from the line agencies has also varied. SACEP and ASEAN did not participate at all. In spite of the absence of some of the members, the minutes of the programme advisory committee appear to have provided very useful guidelines for the implementation of the project. Concerns about the sustainability of the project's activities were raised by different members in all the programme advisory committees. It also recommended the formation of a sub-committee which was instrumental in outlining project implementation procedures. Concerns about scaling up in policy the experiences of the project were expressed by members of the programme advisory committee. The fourth programme advisory committee commented on the project experience during the past three years and identified such local people as Mikma Tsering Bhotia, president of the Hatiya Solar System Users' Committee for being an outstanding leader of his community. The participants appreciated the efforts of Rural Reconstruction Nepal in facilitating and promoting the conservation and development activities in a remote part of Nepal that had also been adversely affected by deteriorating security conditions.

103. The lack of female participation on the programme advisory committee was notable. The non-participation from some of the international and regional organizations meant that linkages with these organizations were not in evidence. The first three programme advisory committees were held in Kathmandu which may explain the limited interactions between the programme advisory members and the project beneficiaries, although security considerations could have played a role in this decision. When the Fourth programme advisory committee was held near the project site, participation from the project was greater. Given the circumstances, the programme advisory committee appears to have been an useful advisory body and one member from an outside organization has expressed satisfaction with the project (See Annex VI).

(b) Project management office

104. The project management office consisted of a number of units. In Kathmandu, the office of the project director was situated together with an accountant, office assistant and a messenger. The project director reported to the president of Rural Reconstruction Nepal and its management committee that made all the major decisions affecting its projects of RRN, this being one of them. While the project director was authorized to make the day-to-day decisions, he had to report to the management committee at monthly meetings. At the district level there was also a

project office. Initially two offices were established – one in the Num village development committee and the other in Khandbari. However, with the deterioration in security, the Num office was merged with the Khandbari office and in June 2003 the Khandbari office was moved to Tumlingtar. In addition, the project reported the progress, problems and achievements of a district coordination committee consisting of all the important development line agencies which reviewed development activities every six months. Participation was an important factor in receiving the full support from the district offices. The strong support from local government helped in facilitating the movement of people and goods through the army check post. The structure of the district office and its staff are set out in annex VII below.

105. At the beneficiary level, all the project activities were identified and managed by user groups organized for forest conservation, rural energy and vegetable production and by eco-clubs. All the community members participated in one or more of the groups, which became the basic institutional mechanism for discussing the planning, implementation and reviews of all project related activities.

2. Equity considerations in project management

106. Improving the access of women and of disadvantaged and marginalized groups to its decisions and activities was an important objective of the project. To facilitate this decision a number of women professionals were hired by the project office as social mobilizers and field professionals. Considering the deteriorating security situation in the field, women professionals and technicians became increasingly reluctant to work in the field. The presence of women beneficiaries in the different user groups was slow to begin with but has increased over the years.

107. The extent to which disadvantaged, marginalized and indigenous households participated in the user groups and articulated their interests is difficult to ascertain at this present time. This factor was not explicitly monitored in the project.

3. Public involvement, partnership and stakeholder participation.

108. As a community-based project on the conservation and sustainable use of natural resources, it was strongly driven by the locals in the institutional form of community user groups. The project authorities also realized very early on that their strong ownership of project activities was necessary in order to continue project implementation in the context of the deteriorating security situation. On one occasion when a meeting of the community concerned with micro-hydropower was under threat by the Maoists to cease, the community stood its grounds and forced the Maoists to leave, risking their wrath later on. If the community members had not considered the project activities their own, it would have been difficult to imagine that they would take such a risk. Additional indicators of community involvement are demonstrated through their contribution towards the micro-hydropower plants, constituting almost 30 percent of the total cost, and in almost all the project activities.

109. The partnership at the district level must also be considered to be fairly robust. At a time when the movement of people and goods and services was becoming increasingly difficult and staff increasingly reluctant to leave Khandbari or their homes, there was a lot of support by the district line agencies in preparing the operational plans of community forest user groups, in taking on the different studies and in providing technical supervision of project activities. Sharing of project activities in the district level coordination meeting and the national and regional workshops was important for the continuing co-operation and support of the district, national and regional organizations. Some non-governmental organizations at the local level, such as FECOFUN and the Society Development Centre (SODEC), also worked jointly to implement natural resource-related project activities.

110. A distinctive element of this project is its strong ownership by the community. Without this, any amount of support from another stakeholder, important as these are, would have made project implementation very difficult under the present circumstances of its location.

4. Financial management

111. The total budget of the project was $800,000. This included a GEF contribution of $625,000 and another $75,000 from RRN, $50,000 from UNEP and $50,000 from local

contributions. The contribution by RRN to the project took the form of salaries of the senior staff, and use of their office premises in Kathmandu and in the district. The UNEP contribution, also in kind, was to be used for the support of staff participation in RRN meetings and related activities.

112. The financial rules of RRN applied to all the project activities, following the agreement with UNEP on the overall budgetary allocation for different line items. Funds were released by UNEP regularly on the basis of reimbursement claims on expenses by RRN. This appears to have proceeded smoothly, with the exception of one question raised by RRN on the financial report, regarding the payment of one month's extra salary to the staff every year. This appears to have been satisfactorily explained by the project to UNEP authorities. In Kathmandu the release of funds to the district was on the basis of monthly progress reports and plans submitted by the RRN project office in Tumlingtar. It was said that without the monthly report and verification by the RRN Kathmandu offices, payment of monthly salaries was also withheld.

113. Discussions with project staff indicate that the transportation of the micro-hydropower equipment was a major problem. An army helicopter was to be used to transport the heavy equipment to the district headquarters. In addition, the plan to put in industrial equipment for the processing of local products could not go ahead due to a growing insecurity and a delay in the supply of electrical power.

114. The final report of project expenditure for the GEF contribution is shown in Table 4. Some balances are outstanding.

5. Procurement

115. Table 5 shows the list of equipment purchased under the project by RRN for the use of project management. This does not show all purchases of equipment and materials for the project area, for example that of micro-hydro power plants, solar cells, electromagnetic equipment and pipes.

Table 4: Allocation budget and expenditures statement

Project No: GF/5022-01-01

Project title: Arun Valley sustainable resources use and management pilot demonstration project

Project commencing: February 2001

OBJECTIVE OF EXPENDITURE BUDGET CODE	PROJECT BUDGET ALLOCATION	EXPENDITURES
PROJECT PERSONNEL COMPONENT		
1100 Project personnel	115,334.35	116,334.35
1200 Consultant w/m	24,372.15	24,372.15
1300 Administrative support w/m	14,621.62	14,742.62
1600 Travel on official business	34,726.88	34,727.09
Subtotal	**189,055.00**	**190,176.21**
SUB CONTRACT COMPONENT		
2300 Sub contracts (commercial purposes)	313,749.20	293,478.21
Subtotal	**313,749.20**	**293,478.21**
TRAINING COMPONENT		
3100 Training/fellowships	23,907.68	23,907.68
3200 Group training	12,600.04	12,611.04
3300 Meetings/conferences	14,580.84	14,603.84
Subtotal	**51,088.56**	**51,122.56**
EQUIPMENT AND PREMISES COMPONENT		
4100 Expendable equipment	9,540.11	9,540.11
4200 Non-expendable equipment	27,040.28	27,040.28
4300 Premises (office rent, maintenances of office premises)	10,870.81	10,870.81
Subtotal	**47,451.20**	**47,451.20**
MISCELLANEOUS COMPONENT		
5100 Operation and maintenance of equipment	2,717.80	2,717.80
5200 Reporting costs	7,111.00	5,347.48

5300 Sundry	4,592.07	4,603.07
5400 Hospitality and entertainment	1,401.89	1,403.89
5500 Evaluation	8,400.00	
Subtotal	**24,222.76**	**14,072.25**
Grand total	**625,566.72**	**596,300.42**

Table 5: Inventory of non-expendable equipment purchased against UNEP Project

Unit value $1,500 and above and items of attraction

As at 31 December 2002

Project No. GF/5022-01-01

Project title: Arun Valley sustainable resources use and management pilot demonstration project

Executing agency: Rural Reconstruction Nepal

Internal/SO/CA (UNEP use only)

FPMO (UNEP use only)

DESCRIPTION	SERIAL NO.	DATE OF PURCHASE	PURCHASED/IMPORTED FROM (NAME OF COUNTRY)	LOCATION	CONDITION	REMARKS
Computers (4 set)	1	3/7/2001	Nepal	Project Office	Outdated but working	1st year
Printer (1 set)	2	3/7/2001	Nepal	Project Office	Working	
Copier- photocopy machine (1set)	3	3/5/2001	Nepal	Project Office	Working	
Still Camera (1 set)	4	3/5/2001	Nepal	Project Office	Working	
Calculator	5	4/11/2001	Nepal	Project Office	Working	
Fax machine (1 set)	6	4/19/2001	Nepal	Project Office	Working	
GPS 2000 XL	7	4/27/2001	Nepal	Project Office	Working	
Theodolite	8	4/27/2001	Nepal	Project Office	Working	
Abney Level	9	4/27/2001	Nepal	Project Office	Working	
Padometer	10	4/27/2001	Nepal	Project Office	Working	
Furniture	11	5/8/2001	Nepal	Project Office	Working	
Furniture	12	7/15/2001	Nepal	Project Office	Working	
GPS	13	9/26/2001	Nepal	Project Office	Working	
Drawing – Equipment	14	10/11/2001	Nepal	Project Office	Working	
Computer (Laptop)	15	6/28/2002	Nepal	Project Office	Outdated	2nd year
Furniture	16	6/28/2002	Nepal	Project Office	Working	

The physical verification of the items was done by:

Name: Sarba Raj Khadka Signature_____

Title: Project Director Date_____

IV. Impact and sustainability

116. The project has taken important steps in an effort to improve the local environment, given its overall deterioration created by overgrazing, shifting cultivation, the over-extraction of herbal and medicinal plants and unrestricted wood-cutting and hunting by the local people. The project's efforts are clearly limited in terms of both time and space and need to continue and increase in order to cover the entire Arun Valley, this being a larger area than that of the three village development committees. Despite some of the shortcomings of the project, there is no doubt about the many positive impacts which it has had in the three village development committees as well as in the surrounding area. It should be noted that at the time the project activities began, there were no other development agencies working in the area.

A. Providing new infrastructure for the improvement of livelihood conditions and forest resources

117. About 450 households in the area have access to electricity because of the project. The elation of the local people was eloquently expressed by one of the participants at the regional sharing workshop when he said, "Electricity has brought lots of change in the village. Now we can do evening chores under bright light. It has helped our children in their studies and improved our health." Over time, as has been demonstrated in other areas, the use of electricity will diversify and also influence the use of firewood. These changes will be gradual but inevitable. Other infrastructures include the improvement of drinking water and improved water mills. As households benefit from these infrastructures, they will also take greater responsibility for their maintenance in the future.

B. Community mobilization for the protection of local biodiversity resources

118. Community forest user groups have become very active in controlling and regulating the use of their respective forest resources through the development of their operational plans. Within a short period of time many positive signs have been noted including controlled access, increased sightings of birds and wildlife and improved knowledge about the illegality of hunting, regulation of the harvesting of forest products and improved in-situ regeneration of chiraito. These denote some of the initial benefits from improvements in the control of community forest user groups over forest resources. The question for the future is whether or not it will be sustained. The indications that it will are quite favourable. The adopted structure of the community forest user groups is the same as that prevailing in other parts of the country under community forestry. This will ensure future support and guidance from the district forest office. As the communities benefit more from their improved management practices, they will be motivated to protect their forest resources, thereby improving local biodiversity resources.

C. Influencing community forest planning guidelines

119. There was some confusion about the management and cultivation of non-timber forest products under community forestry. This issue was successfully resolved by the district forest office with the management of non-timber forest products being included in the operational plans of the community forest user groups.

D. Increased environmental awareness

120. The protection and conservation of biodiversity resources is the main message behind all project activities. Protection and conservation, not just for the benefit of the present population but also for future generations, is a new message that has been promoted throughout the community forest user groups, other user groups and eco-clubs within the schools.

E. Enhanced institutional capacity

121. At a time when the local government does not exist, the institutional vacuum created has been filled by the expansion and development of community-based organizations such as community forest user groups fulfilling such functions as the dissemination of energy supplies and vegetable cultivation and the promotion of non-timber forest products. Different types of

training have been provided to the community-based organizations in order to improve their technical skills. Some members of the community forest user groups have also had the opportunity to visit other parts of the country with the purpose of seeing how the cultivation of non-timber forest products is being promoted Training in the operation and maintenance of micro-hydropower plants, bee-keeping and vegetable growing have enhanced the capacity of the local community-based organizations in comparison to the pre-project condition where such organizations did not play an active role in any aspect of resource conservation.

F. Better understanding of Arun Valley's biodiversity resources

122. The upper Arun Valley is part of the Eastern Himalayas, designated as one of the major critical ecosystems on the planet. Until very recently the resources of this area were unknown. The studies undertaken by this project however have collated scientific information on its flora, fauna, ecosystems and human activities. The studies have also identified many additional areas for further enquiry. Although information based on the three village development committees represents only a small part of the Arun Valley, leaving a larger area which needs to be systematically assessed, the studies undertaken in this project have provided a valuable baseline for developing a better understanding of the Eastern Himalayas and its diversity.

V. Constraints and lessons learned

A. Constraints

1. Remote and inaccessible area

123. The area's remote location and its difficult access has posed many difficulties for the project's implementation. Due to these factors communication has been both slow and irregular. The transportation of construction materials has been costly as much of it had to be done by helicopter and the use of porters. There was even a prize organized for anyone who could successfully transport one of the hydropower turbines to the project site. The nearest road head regularly serviced by buses and trucks is four to five walking days away, although despite these obstacles, local people have carried through a few vehicles that now operate from the airport to the district headquarters, two days walking distance from the project site.

2. Problems of insurrection and insecurity

124. This problem has both intensified and subsided depending on the movements and actions of the Maoists and security forces. At times the levels of tension are such that all movement in the district comes to a halt. There is a great deal of uncertainty facing those who travel as anyone can be stopped, questioned and detained. The project activities were affected by the difficulties faced in the transportation of equipment to the project area. Some of the electrical equipment is still under army restriction. There were some attempts by the insurrection group to stop activities in one of the micro-hydropower sites. In two community forest user groups, the Maoists prevented the preparation of forest inventories.

3. Small scale of the project

125. Given the large needs of the area, the project is on a relatively small scale, its benefits being confined to the few households in the immediate project area. A large number of equally poor people outside that area have not benefited, however. Efforts made by the project have identified many potential opportunities for the improved management of water, forest and agricultural resources, which would not only raise the living standards of local populations but also help preserve the area's natural resources and its biodiversity, and full advantage should be taken of these opportunities.

B. Lessons learned

126. Given the project's achievements and constraints, its main lessons are concerned with those of its aspects which could have been better planned. Improved planning would have resulted in more objectives being fulfilled, a lesson learned in a number of cases.

1. Benefiting from the studies

127. The project has supported numerous studies, thereby providing valuable information. Some of these studies, however, were only completed towards the latter end of the project period making it unlikely that much benefit could have been derived from them. It is accepted that some of the information is specifically scientific and has less of a direct practical utility for the project, however this is clearly something that should have been extensively reviewed, discussed and if found valuable, incorporated into the project's activities. Delays in studies limited their overall usefulness to the project thus demonstrating an important planning lesson for the future.

2. Addressing equity consideration

128. This represented a very important objective of the project and was demonstrated particularly in the mobilization of women. However it is not clear to what extent the marginalized, disadvantaged and indigenous ethnic groups have been involved. The baseline surveys did not clearly identify these groups and the project has left it to the community forest user groups among others to deal with these aspects of equity. Thus unless a deliberate effort is made to identify these groups, understand their current condition and target activities accordingly, they may be left out. It should be noted that this was one of the criticisms of the Nepal-UK Community Forestry Project. The project possessed the necessary knowledge but lacked clear cut measures with which to address it.

3. Annual and mid-term evaluation

129. Both the above-mentioned lessons may have been avoided if there had been annual or mid-term evaluations of the project. Given the difficult circumstances under which the project was working, there might have been pressure to move ahead with the implementation of large numbers of activities, thus limiting the amount of attention which could be devoted to each of the objectives. An evaluation would most certainly have noted the gaps and identified mechanisms for dealing with them.

4. Strengthening linkages- the lessons from programme advisory committee operations

130. The programme advisory committee was a very valuable institutional mechanism for guiding the overall project. In spite of its many important contributions, however, there are also many questions surrounding the committee. First, several members of the committee were identified as not having participated in a single meeting. Questions are raised as to how the nominations were made, whether nominated members were consulted about their nomination and to what exactly they were committing themselves by becoming members. More care should have been taken when nominating representatives who had to travel from remote locations. Second, programme advisory committee decisions are not mandatory. After all the inputs that they provide, if the representatives' inputs are not taken seriously, their motivation to participate is lowered. This is very important for local participation. It is a question of commitment and the establishment of high-level structures like the programme advisory committee should be granted a more careful review thus aiding it to play a more effective role in guiding the project.

5. Working within a conflict situation

131. The situation of conflict in Nepal has worsened and affected the project area. The question is posed as to how the project adjusted its style of operations and activities under these circumstances. In one of its last annual reports, the project identified a number of lessons it had learned and implemented to cope with the area's unstable conditions, these are as follows:

(a) Low-profile programme implementation (i.e., getting on with activities and avoiding too much fanfare, political visibility, large public gatherings, etc.);

(b) Strong participation of the community in all aspects of project planning and implementation;

(c) Transparency of decisions based upon open discussions by the community and the respecting of the community's decisions;

(d) Constant sharing of project related information with all stakeholders including the district government line agencies;

(e) Committing community investments in the project to ensure greater ownership;

(f) Ensuring early flow of some benefits from the project to households so that community members commit themselves to long-term activities.

132. The ownership aspect is very critical if the community is to proceed with implementation, even during the difficult periods created by a situation of conflict.

VI. Conclusions and recommendations

A. Conclusions

1. Appropriate concept and approach

133. The conservation of biodiversity through a strong community-based approach was an appropriate concept in an area where the community itself was largely responsible for the area's biodiversity loss. Demonstrating the benefits of conservation using a participatory planning and management approach, the project was able to mobilize and organize the community to implement its activities, thus strengthening its sense of community ownership. Obviously not all problems can be resolved satisfactorily by the community and outside help was necessary in many areas. The district government also provided substantial cooperation, emphasizing the need for a strong partnership with all the stakeholders even when the community was taking on the responsibility for project activities at the grass roots level. The robustness of the concept and overall approach is manifested by the fact that the project has satisfactorily implemented most of the activities despite the difficult circumstances facing both the area and the country as a whole at the present time.

2. Community-based organizations are competent

134. Working directly through community-based organizations has been almost unavoidable because of the absence of village level government. The need to route every activity through the local government has become a cumbersome requirement. The experiences of not only this project but others too suggests that if development activities are to be meaningful at the grassroots level, respective community-based organizations designed for specific purposes must take on a bigger role. The decentralization and local self-governance act and its implementation has been filibustered by centre-district turf wars. There is a major institutional vacuum below the local government level, a gap which can only be closed by the existence of meaningful opportunities for community-based organizations to function in their respective areas.

3. What happens next?

135. The project has provided many benefits, raised expectations and mobilized the community. Will this cease after the project is completed? While it is not the responsibility of any one project to continue to function indefinitely, having awakened an isolated community and worked with them for three years creates an attachment to the people and a wish to continue certain aspects of the work. New opportunities, therefore, for continuing some of these activities should be explored. Several of these are identified in the recommendations.

B. Recommendations

1. Scaling up the project's achievements

136. It is absolutely critical that conservation and development activities be both continued and increased. Although the community groups are likely to continue with some of the activities, the overall achievements of the project are quite fragile if not supported by continuing internal (community level) and external inputs. Many opportunities for conservation and sustainable livelihood in the areas of harvesting water, non-timber forest products and eco-tourism resources are still only marginally developed. RRN, with the support of UNEP-GEF, should convene a meeting, jointly with the Government and other stakeholders, including the World Wide Fund for Nature (WWF), IUCN and the Mountain Institute, among others, to find ways of continuing

the livelihood and conservation activities in the three village development committees as an integral part of the larger Arun Valley.

2. Further emphasis on poverty reduction for the destitute

137. The poorest of the poor have been virtually invisible to development projects in the past, indeed although this project recognized the existence of the problem, it did not go far enough to deal with it. Neglect of this minority group may threaten the conservation improvements achieved so far. Every effort must be made to improve the lives of this part of society and encourage their participation as active members of the community. This aspect should figure prominently in any continuing or new livelihood effort in the area.

3. Exploring partnerships for the development of the greater Arun Valley.

138. As a biodiversity hot spot with good economic potential there is a need to develop the integrated conservation and development programme for the entire Arun Valley. Already there are many activities in existence in the Makalu Barun, Kanchhanjunga and Teenjure Milke Jaljale conservation areas such as livelihood and forestry activities among others. It is important for all different parties to come together and work towards a more holistic, integrated area development for the Arun valley. UNEP-GEF could play a major role in bringing together the key players in the area, including the Governments of China and India, which have control over significant parts of the Eastern Himalayas.

4. Developing and maintaining the database

139. The collection of valuable scientific data was an important contribution of this project. If this database is not properly maintained, however, it will soon go to waste as has been the case of many other valuable studies of the past. Efforts should be made to place the scientific information in the public domain. Some of the remaining balance of the UNEP-GEF project fund could be used for this purpose. The RRN web site on the project area contains only one page of general information. In comparison, IUCN Nepal maintains an ever-growing database on Nepal's biodiversity resources. Organizations that are already supporting databases on biodiversity are the best locations for such information. Areas for possible future work on biodiversity include the establishment of a biodiversity museum, the compilation of a people's register in each of the village development committees and the development of specific biodiversity eco-trails.

Annex I

Terms of reference for the evaluation

"Arun Valley Sustainable Resource Use and Management Pilot Demonstration Project"

GF/5022-01-01

1. Background and legislative mandate

Arun Valley, being one of the most important mountains areas embodying rich fauna and flora of global significance, can contribute a lot if the natural resources are managed with the proper understanding of social and environmental sustainability. The natural resources in the eastern part of the Arun River Watershed (outside Makalu Barun Conservation Project Area) have been fast depleting without any provision for future conservation consideration.

This project aimed to mitigate the major threats to natural resources, especially the forest and the water from anthropogenic activities, and design and evolve a pilot management project with locally tested and proven solutions for integrating local community participation in the management of natural resources (forest, soil and water) which would integrate traditional knowledge, skills and the ecological principles.

The primary objective of the project was to organize and analyse the traditional knowledge of local communities and apply in the conservation and sustainable use of biodiversity.

The specific project objectives were summarized as follows:

(i) Generating baseline information on the pattern of natural resources use, the demographic and existing development situation and their impacts on the people, the resources and the biodiversity;

(ii) Evolving community-based sustainable forest management practices;

(iii) Using traditional knowledge for the benefit of biodiversity conservation;

(iv) Creating enabling conditions for conserving biodiversity;

(v) Finding economic and policy incentives to promote traditional knowledge of communities for biodiversity conservation;

(vi) Analysing the possible options for equitable sharing of benefits;

(vii) Promoting use and development of alternative renewable energy resources;

(viii) Exploring and implementing livelihood / income generation activities to help to alleviate poverty and empower local communities;

(ix) Disseminating and replicating the positive findings of the project to suitable levels particularly within the region and in light of the Year of the Mountains in 2002.

The project was executed by the Rural Reconstruction Nepal (RRN) for a three year period commencing February 2001 and completing January 2004. The total budget of the project was US$ 800,000 with US$ 625,000 from the GEF Trust Fund and US$ 175,000 in co-financing.

The project refers to the GEF operational programme 3 and 4 on forest and mountain ecosystems. The project supports the UNEP subprogramme on "Regional Cooperation and Representation: Regional Office for Asia and the Pacific. In particular, the project was to analyse the opportunities for integrating lessons learned from the project into the environmental education and training programme at the UNEP Network for Environmental Training at Tertiary Level in Asia and the Pacific (NETTLAP) and its Youth Programme.

2. Objective and scope of the evaluation

The overall objective of the evaluation is to establish project impact, and review and evaluate the implementation of planned project activities, outputs and outcomes against actual results. The evaluation will also assess efficiency and cost-effectiveness of the overall implementation approach of the project, efficient and effective management of project funds, participation of all stakeholders, lessons learnt and good practices and management of risks, sustainability of project impacts and issues of replicating good practices.

The scope of the in-depth evaluation will cover all activities undertaken as part of the project. The performance indicators provided in the LogFrame/project matrix (see table in Annex) should be used together with the evaluation parameters of appropriateness, effectiveness and efficiency, impact and sustainability. Guidelines on performance indicators are provided in the UNEP project manual pp. 13/89-13/99 and also available on http://www.unep.org/Project_Manual/

Specifically the evaluator shall take the following actions in order to achieve the objective of the evaluation. The evaluator shall:

1. Establish to what extent the project's objectives were met and planned outcomes (results) obtained.

2. Evaluate project performance in relation to the indicators, assumptions and risks specified in the logical framework matrix and the Project Document. Determine the usefulness of the indicators specified.

3. Assess the scope, quality and significance of the project outputs produced in relation to expected results.

4. Analyse the extent of cooperation engendered and synergy were created by the project between its activities.

5. Assess the functionality of the institutional structure established and the role of the project advisory committee.

6. Identify and, to the extent possible, quantify any additional outputs and outcomes beyond those specified in the Project Document.

7. Evaluate the timetable of activities and the allocation of financial resources to project activities and determine their consistency with the Project Document. Where activities and/or outputs have been delayed the cause of the delay and remedial actions taken should be identified.

8. Identify any programmatic and financial variance and/or adjustments made during the project and their appropriateness in terms of the overall objectives of the project.

9. Evaluate project coordination, management and administration provided by the executing partner RRN and UNEP-GEF. The evaluation should include specific references to:

(a) Organizational/institutional arrangements for collaboration with the Arun Valley Hydro-Power Development Company Ltd., the District Development Committee (DDC), Village Development Committees (VDC) and relevant line agencies/ministries of the Government;

(b) The effectiveness of project management in terms of assignment and execution of project activities, and flexibility of management in terms of responsiveness to the need for changes in financial allocations, timing of activities, or mode of operation;

(c) The effectiveness of the monitoring mechanisms currently employed by the executing partner RRN in monitoring on a day to day basis, progress in project execution;

(d) Administrative, operational and/or technical problems and constraints that influenced the effective implementation of the project, and

(e) Financial management of the project, including the balance between expenditures on administrative and overhead charges in relation to those on the achievement of substantive outputs.

10. Assess the extent to which the scientific assessment and monitoring of biodiversity resources have scientific credibility.

11. Assess the extent to which the local communities and stakeholders have been engaged in the scientific assessment and monitoring activities.

12. Assess the effectiveness of the participatory approaches used for evolving and formulating incentives and policies and the success of testing the suggested options within the Pilot Study.

13. Determine the sustainability and replicability of the micro-hydro schemes and training approaches used and the extent to which these activities were coordinated with the DDC, VDC and related line agencies of the Government.

14. Identify tools and methods used for dissemination and establish the extent to which lessons learned on local community involvement and building capacity of stakeholders in this pilot study have been effectively disseminated to the relevant components of SACEP, ASEAN, IUCN and UNEP/ROAP NETTLAP programmes.

15. Establish the extent to which the project has contributed to initiating women's empowerment activities in the Sukepatal-Hurure area;

16. Identify any risks that the project faced during implementation and how well the risks were managed through adaptive management.

17. Identify problems encountered and lessons learned during project implementation.

18. Provide recommendations to UNEP and its executing partner regarding future actions, if any, to follow up on this project.

3. Methodology

The evaluation will be conducted by using a participatory approach where by the task manager and other relevant staff is kept informed and regularly consulted throughout the evaluation. The following approaches will be used for collecting and analyzing data:

(a) Desk review of project document, outputs, monitoring reports (such as quarterly progress reports, mission reports and the GEF annual Project Implementation Review reports, minutes of meetings and relevant correspondence;

(b) Review of specific products including datasets, management and action plans, publications and other material and reports;

(c) Interviews with the Task Manager UNEP-GEF and the Project Manager and other project staff at RRN;

(d) Consultations with relevant UNEP and UNEP-GEF staff;

(e) Consultations and/or interviews with relevant stakeholders involved, including government representatives; district development committees, village development communities, other agencies and organizations, in particular SACEP, ASEAN, IUCN and UNEP/ROAP.

The success of project implementation will rated a scale from 1 to 5, with 1 being the highest (most successful) rating and 5 being the lowest and covering the following aspects:

- Achievement of objectives and planned results
- Attainment of outputs and activities
- Cost-effectiveness
- Impact
- Sustainability
- Stakeholders participation
- Country ownership
- Implementation approach
- Financial planning

- Replicability
- Monitoring and evaluation

Each of the items should be rated separately with comments and then an overall rating given. The following rating system is to be applied:

1 = Excellent (90 %–100 % achievement)

2 = Very good (75 %–89 %)

3 = Good (60 %–74 %)

4 = Satisfactory (50 %–59 %)

5 = Unsatisfactory (49 % and below)

The ratings will be converted in a separate annex to the GEF rating system of: Highly Satisfactory (80%–100%), Satisfactory (65%–79%), Marginally Satisfactory (50%–64%), Unsatisfactory (49% and below), and N/A.

4. Evaluation report format and procedures

The evaluation report shall be a detailed report, written in English, of no more than 20 pages exclusive of the executive summary, the lessons learned, and the findings and recommendations and include:

(i) Executive summary (no more than 3 pages)

(ii) Introduction and background

(iii) Scope, objective and methodology of evaluation

(iv) Findings and conclusions

(v) Lessons learned

(vi) Recommendations

(vii) All annexes should be typed.

The final report shall be written in English and submitted in electronic form in the MS Word Format by 17th January 2005, and should be addressed as follows:

Mr. Segbedzi Norgbey
UNEP, P.O. Box 30552
Nairobi, Kenya
Tel.: (254-2) 623387
Email: segbedzi.norgbey@unep.org
With copies to

Mr. Ahmed Djoghlaf, Director
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P.O. Box 30552
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Mr. Alain Lambert
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Tel: + 254-2-624085
Fax: + 254-2-624041
Email: alain.lambert@unep.org

The evaluation report will be printed in hard copy and published on the Evaluation and Oversight Unit's web-site www.unep.org/eou

5. Timing and resources

A consultant will be hired to conduct this evaluation under the guidance of the Chief, Evaluation and Oversight Unit (EOU) and in close cooperation with the Task Manager, MSP-Biodiversity in the Division of GEF Coordination (DGEF) and in collaboration with the Programme Officer for Medium Sized Projects (MSP) in DGEF.

In accordance with UNEP-GEF policy, all GEF projects are evaluated by an independent evaluator contracted by the EOU, and not associated with the implementation of the project. The evaluator should have the following qualifications: (i) Basic expertise on the subject matter, (ii) Experience with projects in developing countries, in particular Nepal and (iii) Project evaluation.

The contract will begin on 22nd November 2004 and end 17th January 2005 (3 weeks spread over 8 weeks). The consultant will interview relevant staff of Rural Reconstruction Nepal (RRN) and will after consultation with the UNEP-GEF task manager visit demonstration sites to interview relevant stakeholders. The consultant will submit a first draft to EOU on 20th December 2004. Comments to the final draft report will be sent to the consultant after a maximum of 2 weeks. After incorporating the comments, the consultant will submit the final report by 17th January 2005.

6. Schedule of payment

The evaluator will receive an initial payment of 40 % of the total amount to be made upon assessment of satisfactory progress by submitting the draft report. Final payment of 60% will be made upon satisfactory completion of work. The fee is payable under the individual SSAs of each evaluator. The travel will be prepared separately and will be inclusive of all expenses such as travel, accommodation and incidental expenses.

In case, the evaluator cannot provide the products in accordance with the TORs, the timeframe agreed, or his products are substandard, the payment to the evaluator could be withheld, until such a time the products are modified to meet UNEP standards. In case, the evaluator fail to submit a satisfactory final product to UNEP, the product prepared by the evaluator may not constitute the evaluation report.

27th October 2004

Annex

Project logical framework

Project objectives and activities	
9. Project rationale and objectives: Arun valley, being one of the most important mountains areas embodying rich fauna and flora of global significance, can contribute a lot if the natural resources are managed with the proper understanding of social and environmental sustainability. Presently, the natural resources in the eastern part of the Arun River Watershed (outside Makalu Barun Conservation Project Area) are fast depleting without any provision for future conservation consideration. The proposed project area (see Figure 1) embodies remarkably high level of biodiversity and is coming increasingly under the direct threat of anthropogenic activities and pressure. The area is known for providing habitat to at least 11 globally endangered or threatened known bird species in the area (*Cacomantis passerinus, Zoothera marginata, Megalaima australis, Gecinilus grantia* among others), at least 11 globally endangered mammal	**Indicators**: (i) Effective community-based approaches to forest management that can be replicated at a sub regional level upstream and downstream of Arun river connecting Tibet and India; at least three grassroots people's organizations involved, strategic as well as action plans developed and operationalized, one project level network of people's organizations established for co-ordination of programmes and dissemination of lessons learned. (ii) Organization and documentation of indigenous knowledge system; a comprehensive report on findings of indigenous knowledge systems in relation to resources management produced and shared among different stakeholders of the project. (iii) Viable economic, social and legislative policies and programs for sustainable natural resource management that can be replicated at a sub- regional level upstream and downstream of Arun river connecting Tibet and

species (such as *Ailurus fulgens* (Red panda), *Bos grunniens* (Yak), *Naefelis nebulosa* (Clouded leopard), among others), and a large number of endangered flora and herb species (such as *Dioscorea deltoidea, Picrorhiza scrophulariflora, Cycas pectinata, Meconopsis regia, Taxus baccata,* among others. Annex I provides a list of globally endangered and threatened species found in the area. In this scenario, the proposed project aims to mitigate the major threats to natural resources, especially the forest and the water from anthropogenic activities, and design and evolve a pilot management project with locally tested and proven solutions for integrating local community participation in the management of natural resources (forest, soil and water) which will integrate traditional knowledge, skills and the ecological principles. The findings will be integrated into the national forest management policy for undertaking people's participatory process involving government, local communities and the related NGOs/private sectors with the intent of disseminating this approach to similar areas in the sub-region. The local communities will be involved in the project in such a way that they are fully involved in the identification of possible policy and economic incentives that would promote conservation and the sustainable use of biodiversity resources. In the mean time, the project is expected to yield results that would help to recommend the processes and the mechanisms to equitable sharing of the benefits in similar types of projects, that are of local as well as global significance and in particular to replicate it at a sub- regional level (upstream and downstream) of Arun river connecting Tibet and India. In summary, the findings of this project will be disseminated to any other applicable national, regional and international levels. Further, the project objectives are summarized as follows: (x) Generating baseline information on the pattern of natural resources use, the demographic and existing development situation and their impacts on the people, the resources and the biodiversity; (xi) Evolving community-based sustainable forest management practices; (xii) Using traditional knowledge for the benefit of biodiversity conservation	India; project level based tested economic, social and legislative policies and programmes drafted in co-ordination and collaboration with DDC, VDCs and government line agencies and put forward to government agencies in Tibet and India for possible consideration. (iv) Improvement in economic, social and cultural lives of the community; the economic condition of the project participating household increased by 25%1, plans and programmes to conserve and promote social and cultural lives of the communities prepared and operationalized. (v) Greater equity and benefit sharing among local communities and the stakeholders; at least 80% of the benefits from the project activities are shared in equitable and just manners, as decided by the project communities themselves. (vi) Reduction in fuel-wood consumption and increased commitment to micro-hydro investment by local communities; the current fire wood consumption rate decreased by 25% in the project households, 50% of the project households use micro-hydro energy. (vii) More sustainable livelihood activities to strengthen and empower the communities; operational plans and programmes developed by the local people to promote sustainable livelihood and empower and strengthen communities.

1 The increment in the economic condition of the participating household by 25% is related to direct income level as an effect of the project. To measure this increment, baseline income levels and their sources will be collected at the beginning of the project. The national inflation rates will be used as a basis to calculate the inflation in the area. The same indicators used while collecting baseline information will be used to collect the effect in income level at the end of the project. Some control villages will also be studied for comparison. The relevant indicators will be identified during the Detail Implementation Planning (DIP) Workshop in consultation with different stakeholders.

(xiii) Creating enabling conditions for conserving biodiversity (xiv) Finding economic and policy incentives to promote traditional knowledge of communities for biodiversity conservation (xv) Analysing the possible options for equitable sharing of benefits (xvi) Promoting use and development of alternative renewable energy resources (xvii) Exploring and implementing livelihood / income generation activities to help to alleviate poverty and empower local communities (xviii) Disseminating and replicating the positive findings of the project to suitable levels particularly within the region and in light of the Year of the Mountains in 2002. (xix) Recommending suitable policy and economic incentives to integrate into government strategic planning models.	
10. Project outcomes: (i) Tested and practicable methodology for using policy and economic incentives for promoting local community involvement in forest management (ii) Tested and practicable option for methodologies on equitable sharing of benefits (iii) Tested and practicable solutions for building capacity of stakeholders in using traditional knowledge for the benefit of biodiversity conservation and sustainable use. (iv) Dissemination of lesson learned in this pilot study on possible approaches for: (a) the use of economic and policy incentives for promoting local community involvement in biodiversity conservation; (b) equitable sharing of benefits between relevant parties; (c) building capacity of stakeholders in using traditional knowledge for the benefit of biodiversity conservation and sustainable use. (v) Regional impact of preserving threatened species; (vi) Replicable models of community-based forest resources management; (vii) Replicable approaches to deal with the root causes of biodiversity loss through enabling conditions; (viii) Installed community managed micro-hydro system (ix) Improved capacity for building, operating and maintaining renewable energy system (x) Increased sustainable livelihood activities	**Indicators**: (i) Effective policy and economic incentives for facilitating the effective participation of local community in natural resource management *that can be replicated at a sub regional level upstream and downstream of Arun river connecting Tibet and India;* (ii) Increased benefit sharing among stakeholders (iii) Increased capability of local community and other stakeholders in dealing with sustainable use and management of natural resources. (iv) Production of workshop, seminar and study reports, newsletter, audio-visuals indicating how and where the information is being disseminated (v) Increased partnership with government for the benefit of biodiversity conservation and natural resource management (vi) Biodiversity conserved in one of the world's most unique mountain ecosystem (vii) Effective community-based enforcement of controlling access to, and use of, forest resources; effective policies and programs addressing the root causes of biodiversity loss; replication of acquired knowledge and skills to other places; (viii) Purchase of micro-hydro system and the construction of micro-hydro system within country; (ix) Investment in micro-hydro system in mountain rural communities. (x) Increased production and decreased food deficit in the project area

11. Project activities to achieve outcomes:	**Indicators:**
(including cost in US$ or local currency of each activity): (i) Inventory of biodiversity and livelihood resources (status, monitoring, in-depth identification of threats, etc), (US$ 150,000); (ii) Conduct of socio-economic assessments, existing resource use pattern, government development efforts and development of community-based management approaches including local capacity and institutional building(US$ 200,000); (iii) Conduct participatory approaches (including both govt., local and indigenous communities etc) for coming up with policy and economic incentives for promoting local community involvement in forest management; for coming up with suitable approaches to equitable sharing of benefits; for building capacity of stakeholders in using traditional knowledge for the benefit of biodiversity conservation and sustainable use and then testing the suggested options within this Pilot Study (US$ 70,000). (iv) Establishing micro-hydro systems including technical training to run the system (US$ 270,000); (v) Dissemination of lessons learned in this pilot study on possible approaches for (a) the use of economic and policy incentives for promoting local community involvement in biodiversity conservation in the sub-region; (b) equitable sharing of benefits between relevant parties; (c) building capacity of stakeholders in using traditional knowledge for the benefit of biodiversity conservation and sustainable use, (d) South Asian regional seminar/ workshops involving professionals and project managers working on similar issues (US$ 60,000). An additional US$ 50,000 has been added to this sub-component to ensure that lessons learned will feed into relevant components of the SACEP, ASEAN, IUCN and NETTLAP programmes as noted under Section 18 on Linkage to Implementing Agency.	(i) Number, scale and extent of biodiversity resources (status, threats etc); at least five copies of biodiversity and livelihood inventory reports (inclusive of existing resources status, monitoring mechanism and processes, conservation issues by thorough identification and analysis of threats, etc) (ii) Social issues and participatory approaches that define appropriate governance systems, consensus building and benefit sharing etc; established community assessment approaches and processes, strengthened participatory resources governance and management practices/systems, etc. (iii) Linkages and partnership with national programs to address the root causes of biodiversity loss; established and strengthened linkages between DDC, VDC, people's groups/organizations, district forest office, other relevant line agencies, etc. Developed resources management plan at least for 10 years. (iv) Greater integration of traditional knowledge into national biodiversity conservation programmes and plans; (v) Alternative renewable energy system set up in local communities; service/payment infrastructure established and the capacity to operate and maintain the system.

Annex II

Project review management, monitoring and evaluation and documents

First PAC	11 March 2001, Kathmandu
Third PAC	26 July 2003, Kathmandu
Fourth PAC	8 May 2004, Tumlingtar, Sankhuwasabah
Programme review workshop, Khandbari	Feb 16–19,2002
Participation in District Development Council meeting	Feb 24–28,2002
Subcommittee for implementation	12 March 2001
District-level workshop to disseminate lessons learned to stakeholders	1 December 2003
National sharing workshop	26 July 2003 Katmandu
Regional sharing workshop	8 May 2004 Tumlingtar
Substantive report	Feb– March 2001
Substantive report	April– June 2001
Third Substantive report	July–Sept 2001
Substantive report	Jan–March 2002
Substantive report	April–June 2002
Substantive report	July–Sept 2002
Substantive report	Jan–March 2003
Substantive report	July–Sept 2003
Substantive report	Oct–Dec 2003
Substantive report	Jan–April 2004
Biannual reports	Feb–June, July–Dec 2001, Jan–June 2002, July–Dec 2002, Jan–June 2003, July–Dec 2003

- Reconnaissance survey in the proposed project sites of Arun Valley Sustainable Resource Use and Management Pilot Demonstration Project (Feb 1 to 8, 2001)
- Inventorization and Assessment of Biodiversity Resource in Three Village Development Committees of Sankhuwasabah District, Arun Valley Report No 2: Agricultural Biodiversity (Kath: Feb 2003)
- Forest Resources and Consumption Survey, Sankhuwasabah, Arun Valley (Sept 2002)
- Comprehensive Report on Forest and Agro-biodiversity (Kathmandu 2002)
- Inventorization and Assessment of Biodiversity Resources in Three Village Development Committee of Sankhuwasabah District of Arun Valley. Final Report No. 3, General Biology, Ecology and Mode of Reproduction of Threatened Wildlife Species. (Kathmandu 2003)
- Inventorization and Assessment of Biodiversity Resources in Three Village Development Committees of Sankhuwasabah District in Arun Valley, Final Report No. 4; Synthesis Report. (Kathmandu 2003).

Annex III

List of training measures, workshops, awareness-raising activities and visits conducted

S. No	Descriptions	Conducted Duration (days)	Participants	Sources
1	**NATURAL RESOURCES MANAGEMENT**			
	(i) Herbal Medicinal Plants	3	33	19 VDCs*
	(ii)Forest Management	5	11	5 CFUGs*
	(iii) NTFP Management	4	18	5 CFUGs
	(iv) Community Forest Resource Assessment	17	21	3 CFUGs
	(v) Natural Resource	5	24	7 CFUGs
	(vi) Nurserymen Training	2	10	1 VDC
2	**TECHNICAL SKILL DEVELOPMENT TRAINING**			
	(vii) Drinking Water Repair& Maintenance	7	1	User Groups
	(viii) Operator's Training for Micro-hydro User	2	4	User Groups
	(ix) Managers training for Micro-hydro User	7	2	User Groups
	(x) Basic on the Spot PV System Training	15	5	User Groups
3	**EXPOSURE VISITS AND WORKSHOPS**			
	(xi) Medicinal Plants cultivation Workshop	15	11	8 CFUGs
	(xii) Exposure visit NTFP management	1		
	(xiii) Workshop on Marketing of NTFPs in Arun Valley	1	26	CFUGs & Others
4	**ENVIRONMENTAL AWARENESS AND ADULT LITERACY CLASS FOR FEMALES**			
	(xiv) Adult Literacy Class	3	7	VDCs
	(xv) Adult Literacy Trainers Training	7	9	VDCs
	(xvi) Leadership Development Training	2	8	VDCs

Source: Substantive Report; Jan-March 2004, Annex 2

* Village Development Committees, Community Forest User Groups.

Annex IV A

Details of micro-hydro and peltric sets established in project area

Description	Project Locations Neguwa Khola (micro hydro)	Thulo Khola (microhydro)	Namase (peltric)	Ghatte Khola (peltric)
Installed capacity	22 kW	13 kW	2.7 kW	2.5 kw
load centre	Num 4, 5 ,6	Num 2	Hatiya-9 Namase	Bhotegaun Pawakhola 7
Households benefited	139 (28% Arun VDC)	115 (23.23% of Num VDC)	44 (7.44% of Hatiya VDC)	19 (3.7% of Pawakhola VDC)
Road head distance (walking)	3 days	3 days	6 days	6 days
Beneficiaries	806	892	250	170
Cost \ kw (NRupees)	2,44,531.06	2,76,571.92	2,78,759.96	3,39,278.37
Installation and cost (NRs)	41,38,218.00	27,65,719.24	5,78,963.00	6,52,458.00
Community contribution & transport NRs*	12,41,465.40	8,29,715.70	1,73,688.90	195,737.52
Total cost	**53,79,683.40**	**35,95,434.94**	**7,52,651,90**	**648195.92**

* Exchange rate 1 US$ is about NRs 71.00 (December 2004)

Source: Substantive Report (January to April 2004)

Annex IV B

Details of PV solar system installed

Location	**:**	**Hatiya-4**
Household benefited	:	130 including one health post and one monastery
Cost per system	:	40 WP with 3CF lamps: NRs 28,000.00 (excludes transport costs)
Project contribution (NRs)	:	18,07,000.00
Government subsidy (NRs)	:	15,84,000.00
Community contribution (NRs) (transport)	:	2,40,000.00
Community cash contribution (NRs)	:	1,05,000.00
Village Development Committee (local government) contribution (NRs)	:	2,00,000.00
Total cost NRs.	:	39,36,000.00

* Exchange rate 1 US$ is about NRs 71.00 (December 2004)

Source: Substantive Report (January–April 2004)

Annex V

Programme advisory committee meetings and attendances

Dates	Attendances	Absent
11 March 2001 (Kathmandu)	DDC President RRN President UNEP\ROAP\NETTLAP MAPPA, SARO, IDRC New Delhi IUCN Nepal Arun Hydro Power Development Company Executive Director RRN Project Director and Member Secretary	SACEP ASEAN District Forest Officer District Soil Conservation Officer District Agricultural Officer
1 July 2002(Kathmandu)	DDC President RRN President IUCN Nepal RRN Director District Agricultural Office SODEC (local NGO) Programme Coordinator RRN	SACEP ASEAN District Forest Officer District Soil conservation Officer UNEP\ROAP\NETTLAP MAPPA Arun Valley Hydro Power Committee Representative CFUG
26 July 2003 (Kathmandu)	DDC Chairman RRN President District Agreculture Officer SODEC (local NGO) Micro Hydropower Project Users Group Natural Resources Coordinator RRN Infrastructure Coordinator RRN Arun Valley Hydro Power Development Company	SACEP ASEAN District Forest Officer UNEP\ROAP\NETTLAP MAPPA IUCN
8may 2004 (held in Tumlingtar, Sankhuwasabah)	DDC Chairperson RRN President Local Development Officer MAPPA, SARO, IDRC, New Delhi District Forest Officer District Soil Conservation Officer SODEC Chairperson Neguwa Micro Hydropower Project Users Group Chairperson Thulo Khola Micro Hydropower Project Users' Group Chairperson Solar Energy Project User Group Natural Resources Coordinator RRN	IUCN UNEP\ROAP\NETTLAP\ SCEP ASCEP District Agriculture Officer Arun Hydro Power Development Company

Annex VI

Comments by Dr. Madhav Karki, MAPPA, SARO, IDRC, New Delhi

- ***What did you think of its achievements, failures and limitations?***

  The achievements of the project can be listed as follows:

  Successfully raising the awareness at all levels of the need for the conservation of medicinal plants and management through sustainable use. The successful use of the community forestry institutions such as the community forest user groups is, I feel, a major achievement of the project as it has added value to the grass roots based institution. The strengthening of the institutions of community nurseries by improving their technical quality and management systems has yielded quality planting materials of several high value medicinal plants such as Taxus bacata and Swartia Chiraita. The concept, development and successful implementation of the multipurpose nursery not only raised the value of community-based initiative by providing the multiple planting material needs such as fodder, fuel wood, timber, fruit trees and medicinal herbs, of the community but also improved the sustenance of the nurseries itself.

  The failure of the project, which was the result of the ongoing insurgency in the area, was mainly related to two aspects: a) development of viable market linkages in medicinal plants; b) wider sharing of good practices in both non-timber forest product management and rural development and management. Lack of adequate time and resources may have been the causes of these shortcomings.

- ***How were the communication, dissemination and sharing part handled by the project management?***

  The promotion of an informal learning network among the community forest users groups (CFUGs) and peer learning by promoting information sharing and cross site visits was the major communication strategy adopted by the project. This, I believe, was a practical and sustainable strategy, as there existed a very strong bonding and professional affiliation among the community forest user groups, which just needed to capitalize. More of this was needed, however, though due to various factors this was not possible.

- ***Were the regional objectives of the project anywhere near being fulfilled?***

  I strongly feel that the project had good potential to meet its regional objectives as it was unique in its demonstration of: a) the potential of community-based natural resource management models successfully addressing the issues of rural poverty by raising economic opportunities through the cultivation of high-value cash crops such as medicinal plants, thereby bringing in the role of economic incentives in biodiversity conservation in a biodiversity hot-spot area. b) Developing community learning centres created using the existing platforms of range post level association of community forest user groups and c) building synergy between rural energy and forest conservation. These conservation compatible or economic incentive based conservation efforts have had a tremendous regional value, whilst other countries such as India and China are still struggling and looking for successful livelihood-compatible conservation models in biodiversity rich areas.

- ***What were your impressions about the management of the project to the extent of your participation in its activities?***

  The management of the project was good as it had strong institutional support from RRN. The steering committee was well represented with a range of people coming from the private sector, international agencies, UNEP and the local government. The chairman of the district government was a very interested, committed and active contributor.

- ***Anything special that you would like to share with me and contribute to the evaluation?***

  As a member of the steering committee I feel that this project was an extremely valuable resource for the community. The potential to establish a dynamic synergy between forest and biodiversity conservation through rural energy management was quite high. The project, by promoting the practice of conservation through the sustainable use of short-term annual and perennial low-risk crops such as medicinal herbs and the establishment of small micro-hydel plants, has tried to demonstrate the interdependence between the quality of forests and the long-term availability of cheap electricity. This link needs to be further developed through scaling up the size of the project and increasing the spread of the message. The implementation of solar powered energy was another successful demonstration of a simple technology, which needs further piloting in more economically viable areas. The setting up of eco-clubs needs to be expanded. I therefore feel that UNEP should work towards an enlarged version of this project.

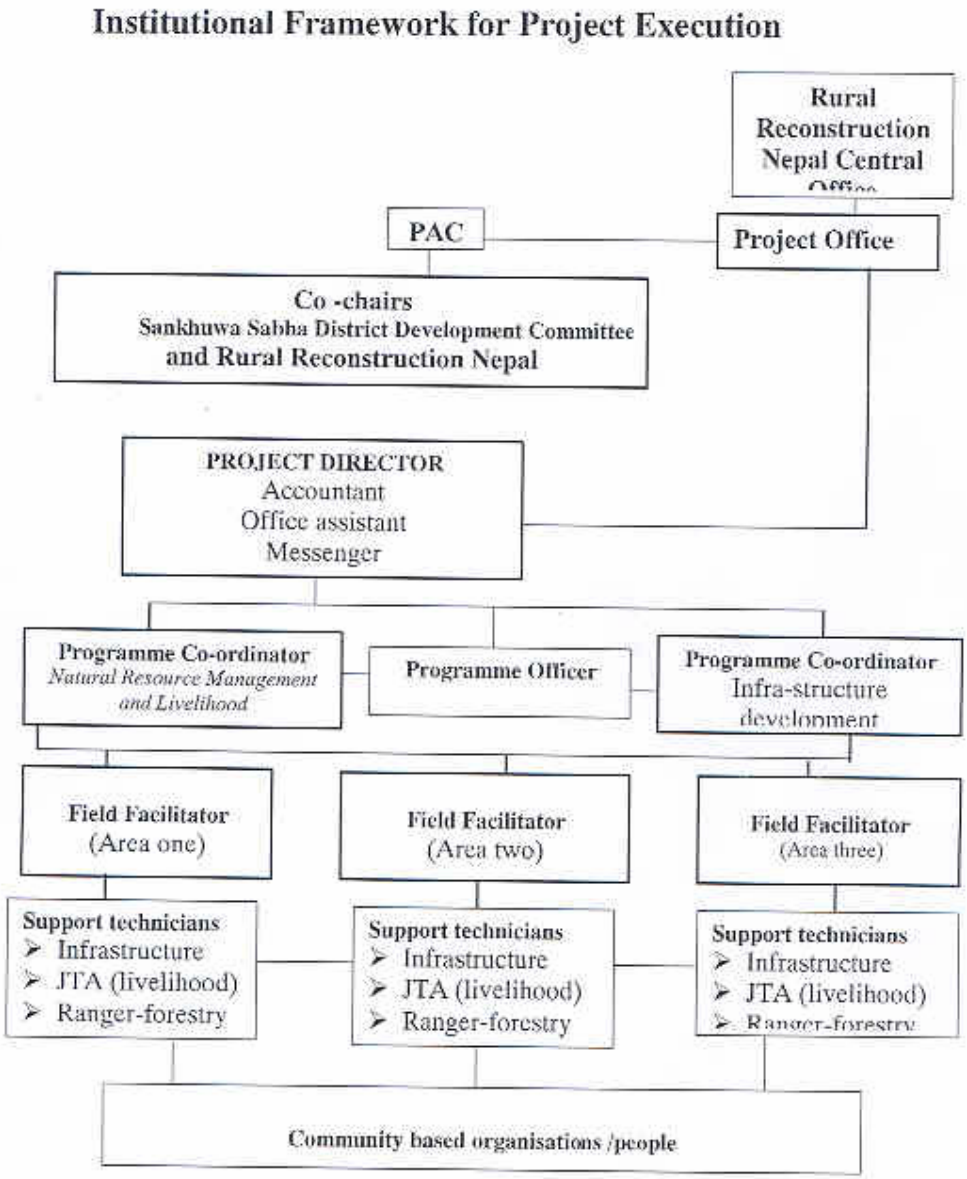
Annex VII

Key informants met or contacted

Name	Designation	Organization
1. Dr. Arjun Karki	President	RRN
2. Mr. Narendra K. Rasaily	Formal Programme Coordinator	AVASRUM PDP
3. Mr. Kamal Khatiwada		RRN
4.		RRN (Finance)
5. Parasu Ram Dahal		SODEK, Khandabari (Telephone contacted)
5. Mr. Hari Bairagi	Former Chairperson	,Arun Hydro Power Development Co.
7. Dr. Tirtha Bahadur Shrestha		Expert on Arun Valley
8. Mr. Sagendra Tiwari	Acting Country Representative	IUCN
9. Mr. Khagendra Sangam		The East Foundation
10. Mr. Brian Penniston		The Mountain Institute
11. Mr. Samde Sherpa		Local Resident

Annex VIII

Institutional framework for project execution



Map 1: Sankuwasabha district showing the study area