

Darwin Initiative – Final Report

(To be completed with reference to the Reporting Guidance Notes for Project Leaders (<http://darwin.defra.gov.uk/resources/reporting/>) -
it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Darwin project information

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Host Country Partner Institution(s)	WWF Nepal
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Project Website	N/A
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1 Project Background

The Kangchenjunga Conservation Area (KCA) in NE Nepal has enormous biological and cultural diversity. Non-Timber Forest Products (NTFPs) play an important role in the livelihood of the approximately 5000 people living in the KCA. Despite their importance as a source of valuable income, food, medicine, building materials and fuel, NTFPs are threatened by over-harvesting for trade.

The **purpose** of this project, started in 2005, was “to develop community capacity to manage NTFPs for sustainable production and plant conservation in KCA”. The three **outputs** were:

- 26 community forest user in KCA practice community-based management of NTFPs;
- Local livelihoods in KCA enhanced through sustainable utilization of NTFPs;
- Community-based monitoring system of key NTFP species in place.

Some of the key outstanding achievements of the project were:

- Development of eight rigorous NTFPs action-plans as guidelines for local people in sustainable harvesting and community monitoring
- Institutionalization of local entrepreneurs’ groups for sustainable management and commercialization of locally found NTFPs
- Networks, marketing linkages and market information system established for the promotion of NTFPs products
- Added value enhanced at the local level through establishment of 3 major NTFPs enterprises (essential oil production, handmade paper and fruit drinks).

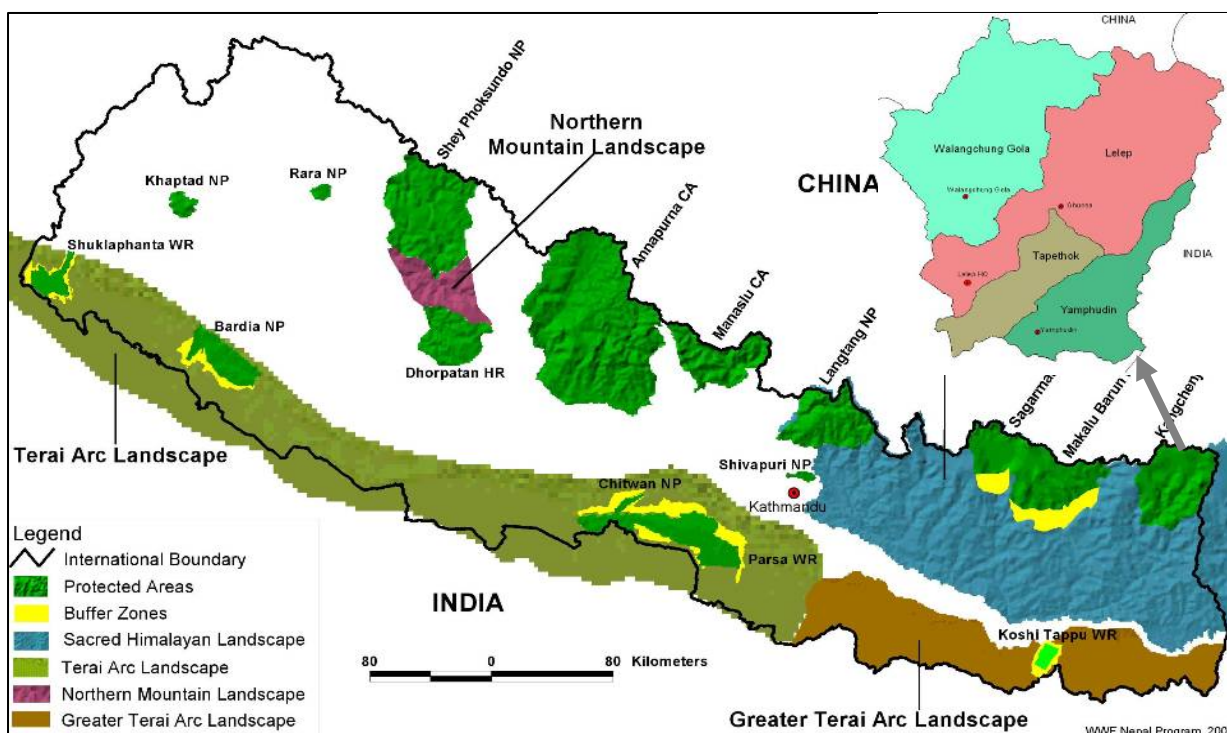


Figure 1. Map of WWF Nepal's working sites including Kangchenjunga in the North East

2 Project support to the Convention on Biological Diversity (CBD)

This project supports several elements of the CBD targets. In particular, these are Article 10 (sustainable use) and Article 7 (identification/monitoring) but also include Article 6 (general measures for conservation and sustainable use), Article 8j (traditional knowledge), Article 12 (Research/training), Article 13 (Public Education and Awareness) and Article 15 (Access to genetic resources). The project has also contributed towards the CBD Global Strategy for Plant Conservation targets.

Although the project had a restricted geographic focus the process of data collection on NTFP species, the development of community led monitoring plans and commercialisation of the products were all developed in conjunction with the Government of Nepal through the offices of the Ministry of Forest and Soil Conservation. The findings and approaches from this project have applications for other communities throughout Nepal.

3 Project Partnerships

WWF UK has been providing technical and financial support to WWF Nepal since 1997. Prior to this project, WWF Nepal in partnership with WWF UK implemented the WWF/UNESCO People and Plants Initiative (PPI) in Shey-Phoksundo National Park in Dolpa (in the western part of Nepal) and in Kangchenjunga. Alongside this, WWF Nepal received invaluable support from WWF UK in developing a livelihoods strategy for WWF Nepal that was then mainstreamed into all the conservation work. Moreover, WWF Nepal and WWF UK have collaborated in numerous joint initiatives at regional and global level.

This DARWIN project was developed on the basis of a long-term partnership between WWF Nepal and WWF UK and their shared knowledge and experiences of working in KCA. The partners were actively involved in the project formulation process including project planning and decision making. The project had a signed contract, renewed annually, to carry out this project. This renewal was subject to submission of a satisfactory work plan and budget for the year.

On-going support from WWF-UK was provided, especially in the livelihoods arena, to ensure that social impacts were accruing to the target communities.

4 Project Achievements

4.1 Impact: achievement of positive impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

The Kangchenjunga Conservation Area Project (KCAP) aims to conserve its rich biodiversity and promote community-based management of natural resources. About 1500 species of flowering plants have been documented thus far in KCA, including over 150 species of non-timber forest products and Medicinal and Aromatic plants (MAPs). These NTFPs play an important role in supporting the livelihoods of those people living in the area which is made up of the four Village Development Committees (VDCs) of Lelep, Tapethok, Yamphudin, and Walangchung Gola.

This richness in NTFP /MAP species has always been exploited for local use but, as their trade value became clearer, so levels of exploitation increased. This project entailed using local people's traditional knowledge as a basis for scaling up their production and harvesting in a sustainable manner. This led to increased income from these resources.

The project built on a previous, and successful, community based NTFP management project that WWF Nepal implemented in the mountain area. This was the People and Plants Initiative project which was implemented in Dolpa in Shey-Phoksundo National Park and Buffer Zone in north western part of Nepal about 9 years ago. Taking on the lessons learned and best practices of Dolpa project, this project successfully adopted a community management model underpinned by a science-based approach.

The value of this approach has been recognised at a local, national and international level. In fact in its third year it was selected as a pilot site for a new International Initiative called ISSC-MAP (International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants). The ISSC-MAP is a new approach for certifying medicinal and aromatic plants as having come from a sustainable source and thus giving higher economic benefit to collectors. Initial results from the DARWIN work and from ISSC-MAP are convincing enough to say that this has brought increased economic benefit for the local people. For instance, in case of essential oil production enterprise, 15 poor households are actively involved in collection of the leaves of *Juniperus* and *Rhododendron anthopogon* from the wild which they sell to the essential oil entrepreneurs groups. Juniper leaves fetch Rs 3 / bundle and Anthopogon leaves Rs 8. Harvesting only takes place during the processing season and harvesters are paid immediately. Two technical persons are involved in processing and the management of the essential oil enterprise and they are paid by the management committee from their group fund.

Apart from these direct beneficiaries there are indirect beneficiaries and stakeholders along the chain of production to market. These include the Community Forests User Groups (CFUGs) who regulate the collection by providing collection permit and collecting royalties on the collected products and labourers who transport the oil from the production site to market centres in Kathmandu.

This income represents new, additional income for the farmers of Ghunsa since these activities did not take place before. The 4000 USD that has been made is a welcome addition to these household incomes.

The community approach and potential biodiversity benefits have also been recognised by the government of Nepal. This is evidenced by the government's decision to hand over management responsibility, for the KCA, to the representatives of the local communities - the KCA Management Committee (KCAMC) - on September 22, 2006. The government's KCA Management Regulation 2064 has been endorsed and this gives legal authority to the KCAMC to manage natural and other resources of KCA sustainably.

Sustainable use and equitable sharing of biodiversity benefits have been addressed through community structures – the Community Forest User Groups. Communities have regular meetings, have sound financial processes and adopted Public Auditing to maximise transparency and accountability of decision-making. Of the eight NTFP action plans that have been developed, three have been operational for more than a year and monitoring has shown that harvesting regimes are being adhered to, so that the wild stock of plant is being maintained.

In addition, the community based organizations such as CFUGs and marketing cooperatives are capable of demonstrating high level of competence and performance towards institutional and technical capacity for managing forest resources (through operationalising, and enforcing, the NTFP Action plans). Threats to NTFPs/MAPs and associated biodiversity has been reduced as a result of active community management, increased ownership and sustainable harvest of resources. The plans have explicitly recommended annual harvesting quantity and frequency thereby minimizing the risk of over-harvesting, illegal collection and poaching.

Further to this, a fair, equitable and highly competitive marketing system of NTFP/MAP has been established in KCA whereby informed decision making of producers and collectors are practiced, supported through the real-time provision of market prices. This allows producers to make their own informed choice as to when best to sell their produce and also into which market (the local market at Taplejung or further afield).

4.2 Outcomes: achievement of the project purpose and outcomes

Purpose: to develop community capacity to manage NTFPs for sustainable production and plant conservation in Nepal

The project focused on both institutional strengthening and technical capacity building for sustainable management of NTFPs. A wide range of people were involved including local people, government and non-government partners and people from academia such as students, professors and independent researchers. In this process, there has been extensive exchange and sharing of knowledge, information and experiences among them. For example, 26 local people were trained on preparing plant inventories, field survey techniques and ecological monitoring. In addition, government officials from the government partners and line agencies and students were also involved in participatory research and documentation. Local producers were active participants in identifying priority species for project attention and in identifying where possible multiple uses existed for those NTFPs.

Social mobilization tools were used to map social status of beneficiaries based on which good governance practices and inclusive policies were institutionalized at each CFUG. Local entrepreneurs were supported in technical and managerial capacity enhancement through training and exposure visits to similar NTFPs based initiatives in different parts of Nepal.

Sharing of knowledge and experiences was systematically managed through documentation and publications and this has helped in recognising and valuing traditional indigenous knowledge as well as institutionalizing best practices. Local service providers such as market price information system have assisted in sustainable commercialization and informed decision making.

Field observation and quarterly monitoring reports from the locally employed Local Resource Persons (LRPs) indicate effective and efficient implementation of the NTFP action plan – including systematic and sustainable harvesting and collection, responsible NTFP business promotion and demonstration of good governance practices by local people.

There is an increased ownership and involvement of local communities in natural resource management especially for sustainable management and commercialization of NTFP and MAP species. Of the 1193 households that are enrolled as CFUG members, some 200 households are the core target group in that they were already engaged in, or wished to become involved in, NTFPs marketing as an alternative income generation opportunities beyond those offered by agriculture.

This has been a key success – that the use of new approaches (eg having access to service providers) or technologies (eg energy efficient cardamom dryers) brings local people new options for livelihoods; it gives them choice.

Outputs (and activities)

Except for a revision to Output 1, all three outputs were achieved as laid out in the original logical framework. Output 1 was revised prior to second year reporting (and was shared in Annual report 2). The original target- *Development of 26 NTFP action plans* was revised to *8 action plans* as this plan was too ambitious to achieve within the project timeframe and given the difficult political environment that prevailed during the project period. These activities need both extensive and intensive forest research and data analysis and for KCA, which is a huge area with rugged mountain landscape, and it was simply not feasible to develop an NTFP action plan for each conservation community forest. It should be noted that community based management of NTFP is nominally practiced by all CFUGs because this is included as a mandatory provision in the Forest Operation Plan (FOP), but this plan alone does not adequately address sustainable management of NTFPs / medicinal and aromatic plants (MAPs). In KCA, a total of 26 forest operational plans have been prepared and handed over to 26 Conservation Area Community Forest User Groups (CCFUGs). Hence Output 1 is modified as: 26 CFUGs in KCA practice community-based management of NTFPs.

In addition, the project experienced considerable delay in initiating field activities in its first year due to the Maoist insurgency which had been ongoing in Nepal since 1996 but escalated after 2000. The project had an agreement for a 3 years' period starting from April 2005, however, it could not start until October 2005, after the call of a unilateral ceasefire by the Maoists. The full-fledged implementation of DARWIN project happened only later when the political environment improved. Despite the unstable situation, WWF Nepal continued its support for handing-over of the KCA to the KCAMC for community management, thus setting the stage for strengthening the role of local communities in protected area management. In this regard, WWF Nepal supported KCA communities to prepare the KCA Management Plan and KCA Management Regulation and their subsequent endorsements by the government of Nepal. The handing over finally came through in September 22, 2006 but the tragic incident of a helicopter crash took away lives of the then chairperson of the KCAMC along with other distinguished conservation leaders of Nepal. This was a huge loss at such a crucial moment; however WWF Nepal continued its efforts for bringing conservation outputs in KCA and through genuine efforts of KCA communities and other implementing partners, the KCA's legacy as the new innovative model of community managed protected area has been continued.

Output 1. 26 CFUGs in KCA practice community based management of NTFP

The project was launched in KCA after a series of inception and planning meetings in Taplejung (district headquarters) in October 2005 and, subsequently, in Lelep VDC on 30 August 2006.

During the project period, a total of 26 CFUGs were established representing a total of 1193 households that have responsibility for managing a total community forest area of 73,327 ha. Of these 26 CFUGs, eight have developed NTFPs action plans which complement the nationally required Forest Operational Plan. These plans are result from participatory research within the community forests and determine distribution pattern, resource quantification and yield potential of selected species. They specifically guide the sustainable management of NTFP and MAP species. Local stakeholders, especially collectors, cultivators and traders were trained on sustainable harvesting, monitoring and commercialization of NTFP and MAP species.

Output 2: Local livelihoods in KCA enhanced through sustainable utilisation of NTFPs

a. Research on enterprise and product development:

The first exercise was to identify and prioritize key species and possible NTFPs-based enterprises for sustainable management, utilization and income generation in the KCA. These were nominated by the local people. Based on this and incorporating data from the known NTFPs in the region, a feasibility study on NTFP enterprises was conducted which looked at their potential cost effectiveness. The end result was a shortlist of plants that matched local priorities with economic potential (Table 1).

Table 1: Short list of important NTFPs with economic potential in KCA

Local name	Botanical name	Parts used	Use	Trade sites
Argeli	<i>Edgeworthia gardneri</i>	Bark	Handmade paper	Locally processed and the final product exported to Kathmandu
Bhuin chuk	<i>Hippophae tibetana</i>	Berries/fruits	Juice drink	Kathmandu, eastern Nepal
Chirayito	<i>Swertia chirayita</i>	Whole plant	Anti-malarial; stomach ache	Lower belt of KCA to W. Gola, Tibet, Taplejung, Birtamod, India
Dhupi	<i>Juniperus indica</i>	Leaf, Shoots	Essential oil; perfume	Yangma, W. Gola, Ghunsa-Taplejung bazaar
Hogplum	<i>Choerospondias axillaris</i>	Fruit	Pickle and candies	Currently for local consumption
Jatamansi	<i>Nardostachys grandiflora</i>	Rhizome	Essential oil; diuretic	W. Gola/Yangma-Tibet/India
Kutki	<i>Neopicrorhiza scrophulariiflora</i>	Root	Tonic; period pains; laxative	W. Gola/Yangma-Tibet; Yamphudin-Sikkim
Baruwa (Seto lokta)	<i>Daphne volua</i>	Bark	Handmade paper	Yamphudin-Khebang, Mamangkhe; W. Gola, Lelep, Tapethok-Lelep (for the processing in paper factory)
Maikopila	<i>Saussurea</i> sp.	Flower	Medicinal values	Yangma/Gola-Tibet
Allo / Nettle	<i>Gerardinia diversifolia</i>	Stem	Cloth weaving	Local use
Panchaunle	<i>Dactylorhiza hatagirea</i>	Root	Medicinal values	W.Gola/Yangma-Tibet; Upper Yamphudin-Sikkim (India), W. Gola/Yangma-Taplejung bazaar
Sunpati	<i>Rhododendron anthopogon</i>	Leaf, Shoots	Essential oil; perfume	Yangma, W. Gola, Ghunsa/Gyabla-Taplejung bazaar

The studies further focussed recommendations, as a result of which the project promoted 4 NTFP based enterprises-

- **essential oil** production from Sunpati (*Rhododendron anthopogon*) and Dhupi (*Juniperus* sp.) in Ghunsa VDC,
- **Nepali handmade paper** from Lokta (*Daphne volua*) in Tapethok VDC, and Argeli (*Edgeworthia gardneri*) in Yamphudin VDC,
- **fruit drink from seabuckthorn** (*Hippophae tibetana*) and
- **incense stick** from Sunpati (*Rhododendron anthopogon*).

Among these, the first three are well established with good economic benefits whilst the last one is still at a pilot scale / trial basis.

A few additional NTFPs are being promoted in KCA. These are the species which are already being used on a very local scale but which, as yet, are not being marketed – despite their potential. These include hogplum (*Choerospondias axillaris*) with its potential for pickle and candies, and Allo or nettle fibre (*Gerardinia diversifolia*) which is used in for weaving to make clothes.

Some species were promoted primarily for their particular medicinal properties. Kutki (*Neopicrorhiza scrophulariiflora*) and Maikopila (*Saussurea* sp.) were especially valued for their high medicinal and economic values. *Neopicrorhiza scrophulariiflora* is a highly threatened species in the Himalaya due to unsustainable harvesting of its rhizome for international trade. It has vulnerable status in Nepal. It is

closely related with *Picrorhiza kurrooa* and both are sold under the same trade name (kutki). Both are incorporated in the protection list of Government of Nepal under Category 1 (banned for collection, use, sale, distribution, transportation and export) and included in CITES Appendix II. Table 2 shows the conservation status of those NTFPs promoted by the project.

Table 2. List of key NTFPs of KCA (that are promoted) and their conservation status

Species	Family	IUCN	CAMP	GN	CITES	Availability in KCA	Local status
<i>Dactylorhiza hatagirea</i>	Orchidaceae		EN	1	A II	Rare	T ^{n,a}
<i>Daphne volua</i>	Thymelaeaceae					Common	T ^a
<i>Daphne papyracea</i>	Thymelaeaceae					Common	T ^a
<i>Juniperus indica</i>	Cupressaceae					Abundant	T ^a
<i>Nardostachys grandiflora</i>	Valerianaceae	VU	VU	2		Rare	T ^{n,a}
<i>Neopicrorhiza scrophulariiflora</i>	Scrophulariaceae	VU	VU	2	A II	Common	T ^a
<i>Rhododendron anthopogon</i>	Ericaceae					Abundant	T ^a
<i>Saussurea gossypiphora</i>	Compositae					Rare	T ^{n,a}
<i>Saussurea topkegolensis</i>	Compositae					Rare	T ^{n,a}
<i>Saussurea tridactyla</i>	Compositae					Rare	T ^{n,a}
<i>Swertia chirayita</i>	Gentianaceae	VU	VU			Common	T ^a
<i>Valeriana jatamansi</i>	Valerianaceae		VU	2		Rare	T ⁿ

Abbreviations:

IUCN (Shrestha and Joshi 1996): T = Threatened, VU = Vulnerable, R = Rare

GN (Government of Nepal, based on Forest Act 1992 and Forest Regulation 1995): 1 = banned for collection, 2 = ban for export outside the country without processing

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora): A II = Appendix II

Local status: NT = not threatened, T = Threatened [super script letters represent anthropogenic (abbreviated as 'a') and natural (abbreviated as 'n') factors responsible for the threat to the species]

As seen from Table 2, above, *Neopicrorhiza scrophulariiflora* is rated as 'commonly found' in KCA – but is protected, even though it holds great potential for sustainable commercialization. The project therefore facilitated policy dialogues and consultations with policy makers and government bodies to lift the ban on kutki collection and trade from KCA. As a result the government lifted the ban on Kutki, but with some important restrictions, in that collectors/local people must get the approval from Ministry of Forests before initiating any harvest and trade.

In the case of Maikopila, it is known to be illegally harvested and traded to Tibet but could be a highly lucrative product if harvesting could be controlled. Maikopila is a perennial plant and currently there is inadequate information on its ecological characteristics. Hence the project has supported a special revolving fund for ecological monitoring of several perennial species including Maikopila and Kutki. At the same time the project supported local communities to undertake field patrolling to protect against illegal harvesting and collection of NTFP and MAP species.

Some species, such as *Swertia chirayita*, are cultivated rather than harvested from the wild. The traditional method for production involves using slash and burn and then broadcasting the seeds by hand.

The project did try and promote an improved system involving transplantation but this proved unpopular because it was considerably more time consuming and costly than the traditional one. Learning from this experience, the project now works with farmers to minimise any risk of fire in following their preferred approach.

b. Capacity building and promotion of NTFP enterprise

In Nepal, the development of cooperatives has been a successful model for managing NTFP enterprises. The project therefore supported the formation and operationalisation of five cooperatives and their members were trained in cooperative management including financial and organizational management. Further they were provided with specialized training on adding value to products and enterprise development for developing NTFP products. Some entrepreneurs were given the opportunity to participate in training in Kathmandu and other parts of Nepal and learn through knowledge and experience sharing in similar community based initiatives.

Marketing is critical to the success of the project and to the enterprises. The project collaborated with government agencies and private organizations to developing business development service providers at the local level. As a result, KCA entrepreneurs now have agreements with national and international buyers and exporters such as *Herbs Production and Processing Company Limited*, *Siddhartha Herbal Industry*, *Forest Products Private Ltd.*, *KANPOU Nepal*, *Himalayan Biotrade*, *Alternative Herbal Industry*, *DABUR Nepal*, *Khemka* and *Women Entrepreneurs Association of Nepal* for marketing their products. To facilitate transparent marketing system and to enable local entrepreneurs to make informed decisions on selling products, the project established a market price information system in Taplejung in coordination with the Taplejung Chamber of Commerce and Industry (TCCI). The TCCI is already responsible for collecting information from major market centres of Nepal and now makes this available to KCA entrepreneurs. In order to make this system more accessible and transparent to local people, the market price information system will be established and maintained by the user committees at VDC level.

NTFP based micro-enterprises:

In order to sustain these NTFPs initiatives, the project supported the KCAMC to establish a NTFPs Enterprise Development Revolving Fund with seed money support of USD 25,000. This fund is utilized as a micro-finance support for conducting enterprise development activities in KCA. One example is the essential oil enterprise that is now established in Ghunsa which directly benefits at least 15 households. The scheme is managed by a committee under the leadership of the Ghunsa Conservation Community Forest User Group (GCCFUG). Hence the GCCFUG is responsible for collection of raw materials and the royalty payments to government. About 10-15% of the profit is deposited in the committee's fund for maintenance and management of the distillation unit and the remaining profit is distributed among the members of GCCFUG. Two NTFP species - *Rhododendron anthopogon* and *Juniperus indica* are used for oil extraction. Other potential plants, such as *Artemisia indica* and *Gaultheria fragrantissima* have also been identified. The Juniper oil is used in perfume and also in making gin while the Anthopogon oil is praised for its pleasant aroma and used in making high value perfume. GCCFUG had total earnings of \$4000 by selling 110 kg of oil in the last season. In the pilot phase the distillation plant was run by fuelwood and the cast (leaf remains after extracting the essential oil) was re-used as fuel. Recently the plant was converted to use electric energy which is more efficient and environmental friendly since it uses electric power generated by the Ghunsa micro-hydro scheme.

Another enterprise that is doing well is seabuckthorn juice (fruit drink) production from berries of Seabuckthorn (*Hippophae tibetana*). The semi-processed juice is produced and supplied by the Ghunsa Seabuckthorn Production Group in Ghunsa to *Alternative Herbal Industry* located in Kathmandu which helps in further processing, getting quality assurance and marketing of the juice. Initially marketed as *Vita Seabuckthorn juice*, it is now sold under the name of *Berryberg* at major market outlets in Nepal.

A third major micro-enterprise is Nepali Handmade Paper Enterprise that uses *Daphne volua* and *Edgeworthia gardneri*. At present 2 individuals and 1 mother's group have established a cottage industry for producing Nepali handmade paper. The paper is sold in local market in Taplejung and other parts of eastern Nepal. Similarly a private company called KANPOU Nepal has collaborated with KCAP to promote the use of Argeli (*Edgeworthia gardneri*). KANPOU provided technical training to 5 people on processing of the bark and also agreed to purchase 1000 kg. of semi processed bark from the trainees.

KANPOU exports semi-processed bark to Japan for making Japanese paper money (Yen), passports and postal tickets. Training has also been given on incense making but trial production is yet to start.

Besides these, the project has supported communities to adopt improved techniques. The production of cardamom is a good example. 28 sets of new cardamom (spices) dryers have been installed which, compared to traditional dryers; consume less firewood and dry spices faster. They are found to reduce firewood consumption by 70% (reducing the pressure on surrounding forests) and increased income by 15% benefiting around 300 households of the KCA.

The project has also been responsive to emerging initiatives from the communities. So, 3 mother groups were supported to manage 3 multi-purpose nurseries in producing 28,000 seedlings of 25 species of plants such as Cardamom, Champ (*Michelia* spp.), bamboos, Lapsi (*Choerospondias* spp.), Okhar (*Juglans regia*), Timur (*Zanthoxylum* spp), Tea plant and number of fodder grasses etc. These seedlings are sold and the funds used to further support the mother's groups.

Output 3: Community-based monitoring system of key NTFP species in place

Local people of KCA and other relevant stakeholders and government partners were involved throughout project implementation. At the inception phase, the high value plants were identified through a consultation and social mobilization process. In later stage too this consultative approach was continued, the indigenous knowledge and technique of plant monitoring used by local people were incorporated with scientific knowledge to develop the sustainable harvesting guidelines. The indicators for monitoring NTFP/MAPs were determined in this participatory way to ensure that communities identify with them. Prior to finalizing the monitoring guideline they were successfully tested among users in respective sites.

The project emphasised the strengthening of local capacities. At the outset, 7 local people were involved in project work and this has grown to 26 Local Resource Persons (LRPs) at the end of project period. LRPs were paid by the project for their service during the project period. From now onwards they are service providers to local people and hence they will be paid by for by the CFUGs from their group fund earned through the collection and sale of NTFPs.

These LRPs had on-the-job training on forest surveying, preparing inventories and ecological monitoring techniques. They will be involved in carrying out ecological monitoring of permanent plots of some important perennial species such as Kutki, Maikopila etc. and also to assist CFUGs in implementation of NTFPs action plans. Separate to this project they have also become involved in monitoring of the caterpillar fungus (*Cordyceps sinensis*) which has a scattered presence in KCA.

A database of NTFPs / MAPs from KCA was developed and shared with local people at Taplejung as well as with national partner organizations and academic institutions. During project period, more than 300 individuals' technical skills and capacities were enhanced on sustainable harvesting and management of NTFP species through training, workshops, exposure visits, and trade fairs. All data and knowledge generated by the project is in the public domain for sharing, it is expected to benefit not only students, researchers and planners but any person who is interested in developing a model of community management of NTFP and MAP species.

In the longer term, the KCAMC and its affiliated institutions will monitor changes on biodiversity and livelihoods of KCA using agreed monitoring protocols. The *Participatory bio-diversity monitoring plan* helps to monitor forestry and NTFP management activities whilst the *Livelihoods changes monitoring protocol* will be used to track livelihoods changes in KCA.

Periodic monitoring of the project and feedbacks were crucial in achieving the results. The project made adjustments and re-alignments in approach and based on this feedback. This project implementation has been much influenced by the Sustainable Livelihoods Approach as depicted in Sustainable Livelihoods Strategy for WWF Nepal that was being developed at the same time as this project. The comments shared by the DARWIN project review committee were also considered in streamlining the work at various stages. Such feedbacks were of immense value for micro-macro linkages and especially for forward planning.

An independent evaluation of the project was carried out in June 2007 and confirmed significant livelihoods improvements of people involvement in NTFP promotion. In May 2008, a joint team of programme staff from WWF Nepal, government, WWF US and an independent journalist also carried out a monitoring visit to KCA. Their report also noted the linkage between sustainable management of NTFP species and livelihoods improvement as demonstrated by the spontaneous participation and stewardship of KCA communities in sustainable management of KCA resources. This clearly indicates that DARWIN project has been successful in developing a model of community based management of NTFPs which can be replicated for strengthening management system of NTFP for plant conservation and sustainable production.

Project standard measures and publications

Outputs are listed in Annex 5.

For sustainability and scaling up, the project developed documents, manuals, reports and a video documentary that highlighted process/methodology and outcomes of the project together with case studies, best practices and future prospects of this project. The technical report captured technical aspects of the project such as plant database, key NTFP species and their ecological characteristics including regeneration, growth rate and yield potential and their monitoring and sustainable harvesting guideline. This also included an account of ethnobotanical and indigenous knowledge.

The project has published two books on NTFPs/MAPs. The first book contains sustainable harvesting guideline for key species found in KCA. These species were those prioritized by KCA communities. The book is targeted at local cultivators and entrepreneurs. The second book has detailed information on various useful NTFP/MAP that were documented during research throughout WWF Nepal's mountain project sites; it includes plants found both in the Himalayan region as well as other parts of Nepal. Both books are one of the major outputs of the NTFPs/MAPs programme supported by DARWIN/WWF UK, MacArthur Foundation and WWF US. A video documentary on NTFP/MAPs has been developed and shared with stakeholders. The documentary captures WWF Nepal's efforts for sustainable commercialization of NTFPs/MAPs in the Himalayas and highlights the successes, lessons learned and best practices of NTFPs/MAPs project developed and disseminated at local, national, international level.

4.3 Technical and Scientific achievements and co-operation

At the outset of the project, a participatory research entitled, "Developing a Community-based Monitoring System and Sustainable Harvesting Guidelines for Non-Timber Forest Products (NTFP) in Kangchenjunga Conservation Area (KCA), East Nepal" was commissioned and undertaken by two botanists- Mr. Suresh K. Ghimire and Mr. Bal K. Nepal. The study had 3 objectives-

- Assessment of ecological status (regeneration, growth rates, yield potential) of high value NTFPs and associated ethnobotanical knowledge,
- Development of monitoring system and sustainable harvesting guidelines of most potential species
- Preparation of action plan for the long-term management of selected NTFP in 8 Conservation Community Forests of KCA.

The study was carried out through five major activities which were:

- a) Participatory research - the distribution and status of high value NTFPs and associated ethnobotanical and ethnoecological knowledge; prioritization of the major species of conservation significance; inventory of major NTFP species in community forests.
- b) Demography and population dynamics,
- c) Development of indicators for monitoring NTFPs,
- d) Action plan preparation as guidelines for harvesting and monitoring,
- e) Testing of monitoring system and harvesting guidelines.

The research showed as KCA having high plant diversity (> 2000 sp.) of which more than 200 species are used by local people for fulfilling livelihoods needs of the approximately 5000 people living in the area. They were used in cultural and health care, including folk-healing systems (*Baidang, Bijuwa, Samba, Yewa*), as well as for multiple livelihood uses as in food, ceremonial, dye, fibre, etc. and for its commercial value. It was found that NTFPs supported 25-90% of family income. Among 200 species, 75% are of medicinal values and community prioritized 12 species as highly important NTFPs for commercial and medicinal purposes.

Some species such as Jatamansi and Maikopila showed high habitat specificity, low abundance and high vulnerability to human disturbance, therefore such species will need to be very strictly managed. Such information was utilized in preparation of the 8 NTFP action plans. The plans incorporated management plans for NTFPs found in each of 8 community forests. The action plan included:

- Species diversity, distribution and status of NTFP,
- Socio-cultural aspects of NTFP utilization,
- Those NTFPs with highest potential for active management,
- Analysis of regeneration status, growth rate, current stock and yield,
- Long-term projection of population size and product availability,
- Sustainable harvesting amount, rotation period, season and method,
- Plan for community monitoring,
- Other management approaches such as habitat management and restoration, enrichment planting, domestication etc.

The research also resulted in the development of community monitoring plans with a clear set of monitoring indicators. The plan was based on characterization and prioritization of the areas of collection, such as type of community forest, its size, monitoring techniques, collection/harvesting techniques (for eg. indigenous techniques), and impact of harvesting, etc. Based on this information, a list of criteria was developed, such as plant vigour (eg rosette size, size of trunk); availability/overall population size; physical characters (eg soil, aspect and altitude). The research also considered Ethnobotanical and ethnoecological categories such as ecological habitat categories, plant habit categories, and categories of plant growth stages.

The sustainable harvesting guidelines and monitoring plans were prepared in Nepali language with diagrams for illustrations.

4.4 Capacity building

WWF Nepal implements its all projects in partnership with Nepal government (Department of National Parks and Wildlife Conservation (DNPWC), Department of Forest) and local civil society organizations, NGOs and community based organizations. The project extended its support for their capacity building by supporting for their participation in organizational development and skill enhancement training programme and exposure visits. This helped in developing leadership skills, financial management, how to form and then operate a Cooperative and so on. The project supported an official from the Ministry of Forests and Soil Conservation to participate in a global convention on indigenous knowledge and traditional rights in Europe and a second official from the Department of Forest was supported on a knowledge and experience exchange to community forestry initiatives in Vietnam. On their return they were better able to support implementation of the new ISSC-MAP initiative as well as promote active forest management techniques such as detailed harvesting regimes.

Further to this, project supported in capacity building of personnel from government office such as DNPWC and District Forest Office through participation in training programmes and exposure visits. In addition to this, project also supported local non-government organizations, private companies and academic institutions for organizing national trade fair, seminars and workshops in major cities of Nepal. This was an opportunity for WWF Nepal to share project outcomes to such wider audience from business sector, academicians and students and learn from them as well. The new project *-Piloting of ISSC-MAP* is the result of such sharing meeting that was organized by WWF Nepal in its office among national and

international experts. Further this project has also contributed in capacity building of WWF staff who have been implementing this project since 3 years.

At project level, in KCA more than 300 local people are directly involved in promotion of NTFP and MAP sector and they have been involved in various technical and managerial capacity building programmes. Similarly, 26 local people are involved in project work as Local Resource Persons (LRPs). They act as the service providers to local communities and provide technical support to local people especially in monitoring and supervising implementation of NTFPs action plans. Further to this, the project has supported the institutionalization of a number of community based natural resource management groups and enterprise groups (cooperatives) which have established networks and linkages with their associations and federations at district and national level. These institutions now have the potential of leading NTFP based initiatives as implementing partners.

Policy advocacy being one major theme in this project, local people as well as project staff were involved in negotiation and dialogue for policy revision specifically in the endorsement of the KCA Management Regulation 2064 and for pressuring government to lift the ban on collection of Kutki.

In the field of research, a team of botanists were involved including graduate students. This was an opportunity for them to use their expertise and advance their knowledge. Besides these, the project specifically emphasized the need for process and output documentation and knowledge sharing, hence all research results including plant database, NTFP harvesting guidelines and monitoring plan have been kept in public domain. Of particular note, the plant database has been uploaded into a central database system for use by government, universities and national government offices.

4.5 Sustainability and Legacy

Sustainability of project outputs is in-built in the project framework and its implementation modality. The project aimed at strengthening capacity of KCA residents in NTFPs management through institutionalization of 26 community forest user groups. This was successful and NTFP management is now part of their community forest operation plan. In April 2008 the KCA Management Regulation 2064 was endorsed by the Nepal government which enabled local communities to have full management authority over KCA resources including NTFPs and MAPs. In conjunction with the KCA handover to the KCAMC, this further reinforces the KCAMC's commitment for sustainable commercialization of NTFPs for revenue generation. WWF Nepal supported policy feedback and advocacy for policy formulation and revisions so as to ensure that policy environment is supportive in sustaining programme outputs.

One of the key strengths of KCAP has remained its participatory and local capacity development approach which has led to local peoples' ownership in project work and their commitment for sustainability. The involvement of diverse donors with different programmatic areas of interest and partners of different capacities - community based organizations (CBOs), and Non Government Organizations (NGOs) and line agencies has been crucial in achieving the goal of KCAP and sustaining conservation outputs in KCA. The KCAP consists of projects that address different aspects of natural resource management. For instance, the USAID and Ford Foundation supported projects emphasize governance of natural resource management while WWF UK, MacArthur and Kadoorie Agricultural Aid Association have focussed on the institutional development of the KCA Management Council, livelihoods improvement of KCA communities and the overall sustainability of the programme.

Similarly, networking and market linkages with private companies is crucial for sustaining NTFP business. WWF Nepal ensures livelihood benefits to the poor, vulnerable and socially excluded people following the sustainable livelihoods approach based on frameworks developed by, amongst others, DFID. In addition, the project promotes an active forest management approach for managing community forest according to which the members of the community forest follow good governance practices in harvesting and sharing benefits in an equitable manner. The forest operational plan and constitution of the CFUG includes the mandatory provision of Participatory Well Being Ranking (PWBR) and Public Hearing and Public Auditing (PHPA) which every CFUG must follow. PWBR is done at the initial stage of CFUG formation and PHPA at least once a year to share their group's progress and financial transactions. Such practices have proven to be helpful in giving each member a voice and making decision-makers accountable, responsible and transparent to his/her group as well as to the wider

community. Similarly, active forest management allows all the members to participate in harvesting, collection and sharing benefits equitably without discrimination to caste, gender, ethnicity or social status. In addition to this, active forest management emphasizes having inclusive policies to involve women and disadvantaged groups in community forest such as allocating or leasing land for such underprivileged group of people.

All project achievements will endure and will have impacts and lasting legacy in the NTFP and MAP sector because they address livelihoods improvement needs of local people. Our previous positive experience with a similar programme in Dolpa also gives us confidence that these changes will become firmly established and bring benefits to the communities. Some specific project achievements that are most likely to endure are implementation of NTFPs action plans of CFUGs which will enable continuation of management and sustainable production activities for NTFPs, community consultations, partnerships and networking for NTFP management and production leading to highest quality product development and marketing, technology transfer and adoption of innovative and wise use practices ensuring value addition and economic benefit, and the most important of all is the favourable policy environment under the leadership of the KCAMC.

However, a note of caution must be sounded since, even now, the political future of Nepal is not yet decided and it is impossible what may occur in this unsettling socio-political environment

The DARWIN project has been instrumental in setting the framework for NTFPs/MAPs promotion in KCA which has, in turn, led to the evolution of some best practices in community based management of NTFP. WWF Nepal has already initiated the process of scaling-up and replication of this initiative shown by the pilot implementation of ISSC-MAP (International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants) project in KCA.

The following are key lessons drawn from the experience of this project:

- Government counterparts and service providers' collaborative efforts need to be in place for responsive and accountable service to communities
- Project had to play a facilitating role to bridge the needs of communities, service providers and government. This was especially applicable to policy revision relevant to NTFPs/MAPs harvesting, market linkage development with the private sector.
- Policy education of end users is essential if they are to be used to help deliver policy reform
- Strengthening local capacity of service delivery helped ensure sustainability of project outputs
- Multi-sectoral partnerships increases the sustainability of programmes
- Build on learning through research /study and have regular knowledge sharing
- Risks need to be constantly monitored and the project be prepared to change (as we had to due to political uncertainties)
- Sectoral programming approach must explicitly focus on the needs of individual sector such as poor, vulnerable and socially excluded if they are to engage in project
- Mandatory provision of participatory well being ranking and public hearing and public auditing or social auditing in forest operation plan and constitution ensures institutionalization of good governance practice; access to rights to resources, equitable benefit sharing and supports conflict reconciliation.

Such results and lessons from the project were disseminated through annual project technical reports, project newsletters, popular book and materials such as sustainable harvesting guidelines and enterprise development approaches for selected species- *Manual of NTFP species of Nepal Himalaya*, a collection of NTFP and MAP species found in the Himalayas, bookmark on seabuckthorn juice (fruit drink), posters/displays, national level workshops to share and lessons of the project, national press releases, and radio programmes.

Project used all types of media such as print, electronic and website etc. to disseminate information on progress and achievements. WWF Nepal's communication unit facilitated all communication jobs

including printing, publication and broadcasting of news and information. Urgent field news and information were shared at local level in Taplejung and eastern Nepal's communication service providers. Further such progresses were highlighted in WWF Nepal's newsletter: *Eco-circular* and uploaded in project official website. Often journalist and media houses are involved in making videos, documentaries and Television spots and telecast through television. Target audiences vary from local communities to policy makers, donor organizations, students and teachers.

NTFP and MAP sector is one of the most promising sectors in Nepal and this project has exhibited the unique versatility by taking a holistic approach to achieve tangible outputs through addressing the ecological as well as socio-economic aspects of NTFPs. Hence after this project period, WWF Nepal will continue sharing achievements and progresses made in NTFP/MAP sector. Information sharing will be continued through print and electronic media.

4.6 Darwin identity

As one of the prominent funding agencies in KCA, it forms the part of a larger programme. In Nepal, the Darwin Initiative is recognized for its unique field programmes with strong orientation on research and field implementation. It is recognized among donor community, government line agencies, ministries, non-government partners such as NGOs, federations, universities and academic institutions.

The Darwin Initiative has been acknowledged during any national and local interactions, including news articles and features. As a part of a larger programme its involvement is demonstrated along with other donor and funding agencies as per WWF's communication policy.

5 Monitoring and evaluation

Due to Maoist insurgency, the project implementation was delayed for almost 6 months. Hence project revised its activities that were originally scheduled for the period - July 2005- June 2006. Because of this project had to adjust activities and compromise with fewer deliverables. This brought some major shifts in the programme deliverables such as the target for output 1 was reduced. The accomplishment and deliverable date of first year activities were changed. Thus the project's overall outputs were affected. Such changes were shared with WWF UK and DARWIN Initiative and got their approval to go ahead as per the revised plan.

As indicated by the logframe, all 26 CFUGs have adopted sustainable community forest management and among them 8 had NTFP action plans as subsidiary to the forest operational plans. Similarly members of CFUGs were provided with organizational, financial management and technical training to support them in implementation of the forest and NTFP action plans. The CFUGs were provided with sustainable funding for plan implementation through loan facility managed by the KCAMC.

Similarly livelihoods changes were observed by using both qualitative and quantitative indicators such as change in living condition, education opportunities, and increased household income after initiating NTFP based micro-enterprise and business. Household level disaggregated data was used for analyzing participation and equitable benefit sharing among poor, vulnerable and socially excluded people. For instance at the beginning of the project, a socio-economic analysis tool called Participatory Well Being Ranking (PWBR) was used to find the social status, especially economic condition, of target households. The PWBR is done to ensure that the support programme and activities directly reach the targeted communities. During implementation of any livelihood support activities, the PWBR is an important tool in identifying the targeted households and settlements. The criteria used for classification of each target household into different class or rank is determined in consultations with local people. Often times this tool is used along with other tools of Participatory Rural Appraisal such as resource mapping and wealth ranking.

Different criteria and procedures were adopted for differentiating the well being groups of the community people, which varied according to geographical location, ethnicity, and several other factors. The following outlines some basic criteria and guidelines for differentiating the groups into four categories viz. Better off (Group A), Medium (Group B), Poor (Group C) and Vulnerable (Group D).

Group A: Have enough lands from which the family can produce more than enough food and cash crops like Cardamom. The production from the land can feed them for the whole year while they can sell and make money from the excess production as well. Livestock herding is another source of income – they hold numbers of yaks and sheep. They make money from livestock herding through the sale of livestock goods like milk, Chhurpi, ghee etc. They may also be engaged in businesses like hotels and lodges. Members of the family are engaged in service or jobs in private or government organizations. They can provide loans to the others.

Group B: They have 12 months food sufficiency from their own land but no access to agricultural surplus for sale. They may undertake livestock herding (yaks and sheep). They may hold down formal jobs. They can provide loans but only on a small scale.

Group C: They hold land but his can hardly maintain family food sufficiency for 6-9 months. They have 2-5 livestock animals. They may need to take loans from money lenders to meet their daily needs, they are less educated and hold no jobs and services.

Group D: Food sufficiency for 3 or less than 3 months, have no land or very little land, have to work on daily wages to make money, have to take loan most of the time from money lenders.

In this project, the research, using PWBR, showed that, out of 1193 households in KCA, 298 households were identified as poor and 464 households classified vulnerable. Almost all the householders in KCA are minority *janajatis* except for 12 households who are *dalits* (socially excluded).

The logframe indicators were very much useful in tracking the progress and the assumptions remained as challenges to overcome to achieve the given results. Hence the logframe and M& E plan was the guiding tool for strategizing project interventions. The M & E system was practical and helpful to provide useful feedback to partners and stakeholders. However, in regard to Nepal's very fluid political situation the assumptions did not effectively and correctly reflect the possible effects of political conflict on the project. Consequently, the project was unable to deliver 100% result as per the proposal. Further it is realized that project did not have scenario planning and hence project had no clear in-built strategy to minimize all possible risks.

An external evaluation and a socio-economic survey were carried out for 2 reasons - *to create a baseline of socio-economic status of people in KCA in the context of KCAMC undertaking the management responsibility of KCA from Nepal government and to assess the project's impacts on local livelihoods and sustainable resources management.* The evaluation highlighted on significant positive impacts both in livelihoods and natural resources such as institution building and strengthening, institutionalization of best practices in community forest management specifically on sustainable management and commercialization of NTFP and MAP species. Nevertheless, gaps were identified in tourism sector, scaling-up of mother groups' efforts, subsistence livelihoods in certain area, replication and scaling up of human wildlife conflict mitigation schemes such as livestock insurance scheme in other parts of KCA and outside KCA. Another monitoring team comprising staffs from WWF Nepal and WWF US, government official and an independent journalist found out that NTFP promotion is the most popular and systematic programme in KCA. Some of its significant characteristics include sound science based harvesting and collection system of forest resources, institutionalized forest governance, equitable access and benefit sharing, non-discriminatory policies and the most important of all, communities demonstrated strong ownership and commitment towards sustaining promotion of NTFP and MAP sector in KCA. Some gaps observed were that due to short project period, only 8 NTFP action plans could be prepared thus benefiting only 8 community forests user groups, hence there is a potential for expanding this programme in other community forest. Another observation was that, some enterprises like essential oil extraction and incense making are still in piloting stage and there are other species of NTFP and MAP that are yet to be explored for enterprise development.

5.1 Actions taken in response to annual report reviews

Yes, the issues raised in the reviews of annual report were duly taken care of. For which project consulted with local communities, private companies and institutions for common understanding on issues and came up with best possible solutions to resolve these issues. Project submitted responses

along with revised indicators and phase out plan during half yearly reporting for the period- April to September 2007.

7. Finance and administration

7.1 Project expenditure

Project expenditure over the three years 2005- 2008 is detailed in the spreadsheet attached as Annex 7.

7.2 Additional funds or in-kind contributions secured

None.

7.3 Value of DI funding

The Darwin Initiative funding has been of tremendous support in enhancing WWF Nepal's efforts for community based biodiversity conservation work in KCA in the Sacred Himalayan Landscape. This project has added value in terms of achieving tangible outputs for both conservation and sustainable use through working directly with the resource users. Further, it has enabled us to make significant contributions in policy reforms and policy implementation. For instance, this project supported the hand-over of KCA to the KCAMC and effective implementation of the KCA Management Plan, which supports Nepal Government's policy to transfer management authority of selected protected areas to non-government organizations. Similarly, this project has enabled us to implement Nepal's NTFP Development Policy 2004 as well as address some the policy gaps outlined in the National Biodiversity Strategy (NBS) for Nepal for instance, the lack of management plans for NTFPs, the need for mechanisms whereby collectors of NTFPs receive a fair price which in turn provides them with an incentive to conserve the resource base and so on.

Annex 1 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements April 2005 - June 2008	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</p> <ul style="list-style-type: none"> • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 		<p>The project was able to demonstrate a sustainable environmentally sound market-based NTFP management model with characteristics like robust institutional framework with good governance as the central focus and policies that are participatory, socially inclusive and non-discriminatory.</p> <p>Further, the community based organizations such as CFUGs and cooperatives are capable of demonstrating high level of competence and performance towards institutional and technical capacity for managing forest resources. Local traditional knowledge of plant usage was accounted for strengthening sustainable management of NTFP.</p> <p>The project was appreciated for its science-based approach, proven methodology of applied research and participatory approach. KCA was selected for piloting a new project ISSC-MAP (International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants) which built upon successful institutions building and community stewardship for sustainable management of forest resources.</p> <p>NTFP/MAP sector is one of the major</p>	(do not fill not applicable)

sources of revenue generation in KCA, hence this sector is strategically promoted especially in the context of KCA handover to local communities. This project has helped in institutionalization of sustainable management and commercialization of NTFP as well as in reforming policies for sustaining conservation outputs and economic benefits. The endorsement of KCA Management Regulation 2064 by Nepal government illustrates Nepal government's confidence in KCAMC managing KCA for the regulation gives legal authority to the KCAMC to manage KCA's resources sustainably including NTFP and MAPs.

Technology transfer for value addition and strengthening of business development service providers at local level has ascertained sustainability of this unique model of community management of NTFPs.

Further to this, a fair, equitable and highly competitive marketing system of NTFP/MAP has been established in KCA whereby informed decision making of producers and collectors are practiced and, more widely, KCA products have premium values in recognition of its sustainable harvesting practices.

With this kind of knowledge base and experiences on ethnoecology and ethnobotany, WWF Nepal has been able to scale up its efforts for

		sustainable management of natural resources especially NTFP and MAP species in Sacred Himalayan Landscape.	
<p>Purpose: To develop community capacity to manage NTFPs for sustainable production and plant conservation in KCA.</p>	<p>By 2007, 26 community forest user groups (CFUGs) have action plans for sustainable management and use of NTFPs</p> <p>By 2008, a community-based monitoring system and sustainable harvesting guidelines for key NTFP species established and tested</p> <p>By 2008, 26 community forest user groups in KCA are sustainably accessing NTFPs for livelihood</p>	<p>During project period 26 community forest user groups were institutionalized and 73,327 ha of community forest was handed over. Due to delayed field implementation for about 6 months, project was unable achieve 100% of its targets; only 8 NTFP action plans were prepared. The project supported institutional strengthening and technical capacity building of user groups, specifically forest user groups and cooperatives. More than 300 local people participated in capacity building programmes. Participatory research, NTFP enterprise feasibility study and community consultations were carried out to determine key species that could be promoted for sustainable management and sustainable commercialization. Based on results, 4 key enterprises were promoted for which local entrepreneurs were provided with micro-finance support managed by the KCAMC. The implementation of NTFP action plans and ecological monitoring of NTFP and MAP was supported by monitoring and sustainable harvesting guidelines in Nepali language. Endorsement of KCA Management Regulation 2064 empowered the KCAMC by giving it legal authority to manage resources in KCA including the NTFPs.</p>	<p>(Highlight key actions planned for next period)</p>

<p>Output 1. 26 community forest user groups (CFUGs) in KCA practice community-based management of NTFP</p>	<p>-By 2007, 26 CFUGs develop NTFP action plans while 16 CFUGs implement their action plans</p> <p>- By 2006, capacity of KCA institutions enhanced for sustainable NTFP management</p>	<p>Considering delayed implementation (for almost 6 months) due to Maoist insurgency, project was not able to deliver 100% of this output. Project faced constraints like difficult landscape, huge expanse of forest area and limited time frame to carry out field survey and prepare 26 action plans. Hence in second year the given output was revised as <i>8 NTFP action plans will be prepared and implemented by respective CFUGs</i> and necessary actions were taken for approval from Darwin Initiative. Under this output 26 CFUGs were institutionalized and more than 300 local people and 26 local resource persons were trained on technical skills on sustainable management of forest resources including NTFPs and other managerial skills for institutional strengthening.</p>
<p>Activity 1. Develop a community-based management of NTFPs Activity 1.1 Sensitization training for collectors, traders and other stakeholders</p>		<p>At the outset of the project, all relevant stakeholders, traders, collectors were sensitized on community management of NTFP and sustainable commercialization. Further inception workshops resulted in a list of NTFP/MAP species prioritized by local communities for their usage in medicinal, commercial and other household purposes.</p>
<p>Activity 1.2 NTFP inventory and action plan development by 26 CFUGs</p>		<p>A team of botanists and local people conducted field surveys to determine ecological characteristics such as resource quantification and yield potential and the results were used to develop 8 NTFP action plans as a part of 8 community forest operational plans. The original target of 26 action plans were revised in second year and only 8 action plans were prepared. Similarly, 26 CFUGs were established. The CFUGs (without Action plans) also practice NTFP management but it is not systematic and scientific as the ones having NTFP action plans.</p>
<p>Activity 1.3 NTFP monitoring, harvesting, management training and community exchanges to successful NTFP projects</p>		<p>26 local resource persons were trained in forest survey, inventory and ecological monitoring techniques. More than 300 local people including members of the CFUGs were provided with organizational and financial management and other technical training on community forest management, sustainable harvesting technology, management of cooperatives, enterprise development, paper making from Lokta, essential oil extraction, juice making etc. Local entrepreneurs participated in knowledge and experience sharing through exposure visits to successful NTFPs projects on essential oil production, chirayita cultivation, cardamom, timur (<i>Zanthoxylum</i>) plantations.</p>
<p>Output 2. Local livelihoods in KCA enhanced through sustainable utilisation of NTFPs</p>	<p>By 2008, 26 CFUGs practice sustainable harvesting for wild collection of NTFPs for subsistence and trade</p> <p>-By 2008, NTFP enterprise established</p>	<p>Project supported 3+1 NTFP based enterprises as recommended by the economic feasibility study and cost-benefit analysis. A revolving fund was established under the management of the KCAMC for providing micro-finance service. The cooperative model was selected for enterprise development and the NTFP plans were followed for sustainable harvesting and collection of NTFP/MAP. The interested entrepreneurs were provided with organizational and managerial</p>

	and viable (pilot site) -By 2007, access increased for poor /disadvantaged groups to NTFP-based livelihood opportunities	training and other specific skill enhancement training such as value addition, enterprise development etc. Further project supported in establishing market price information systems in Taplejung targeting at improving access to market information of local collectors and traders. Similarly, project also helped local traders to establish business relations and linkages for marketing their products.
Activity 2.1. Feasibility study for NTFP enterprise		Economic feasibility study and cost-benefit analysis of selected species based enterprises was carried out (as recommended by communities). The NTFP species were selected based on the research findings and the recommendations of the botanist team and the NTFP action plan. The study analyzed the economic aspects of various enterprises particularly focusing on marketing aspects (demand, trend, place, price, and product). Some recommended enterprises were – essential oil, hand made paper, fruit drink/juice, incense stick, pickle and candy.
Activity 2.2. Identification of target groups, community planning, site identification for enterprise piloting		A follow up study to identify sites and target groups and enterprise planning showed 3 enterprises as promising ones considering their demand in national and international markets. They were essential oil, hand made paper and fruit drink/juice. Interested people and group congregated for group formation and institutionalization as per the policy of the existing groups such as CFUGs, mother groups, user committee and the KCAMC. The collection and harvesting strictly followed the NTFP action plan.
Activity 2.3 Capacity building training for entrepreneurship development (cooperative operations, value addition, enterprise development)		A package of organizational, financial management, technical skill enhancement such as value addition, enterprise development, and etc. training programme was provided to interested entrepreneur groups and local people. The trainings were facilitated by resource persons, project and park staff.
Activity 2.4 Piloting of NTFP enterprises		The cooperative model was selected for piloting NTFP enterprises. 5 cooperatives were formed and institutionalized. The project established a revolving fund under the management of the KCAMC to provide micro-finance support to establish the micro-enterprise. Besides 3 major enterprises (as mentioned earlier), project supported four others such as incense stick, pickle and candy, potato chips and cloth weaving from allo or nettle fibre, however unlike the main 3, these enterprises are not yet as well established despite financial and technical support from the project.
Activity 2.5 Market/price information systems		Project supported Taplejung Chamber of Commerce and Industries (TCCI) to improve access to market information for NTFP collectors and traders. The TCCI set up market/price information system in its offices in Taplejung and two other VDCs. This system has helped local traders and collectors to make conscious decision on marketing their products.

Activity 2.6 Marketing linkage support		Project established relationships and networks with prominent NTFP/MAP buyers and suppliers within and outside Nepal to help local collectors and traders to build business relations. In this process the project was able to establish marketing linkages with DABUR Nepal, Khemka, KANPOU Nepal, etc. for essential oil, semi-processed bark of Argeli, seabuckthorn juice/fruit drink. Some marketing linkage relations have resulted in buy back guarantee for multiple years.
Output 3. Community-based monitoring system of key NTFP species in place	By 2007, NTFP database developed -By 2007, ethno-botanical knowledge documented -By 2007, monitoring system and sustainable harvesting guidelines of key NTFP species established	Project commissioned a participatory research to determine the status of NTFP and MAP species in community forest of KCA for which a number of permanent plots were laid down. The study showed presence of at least 13 highly valuable NTFP/MAP species which were further studied for their yield potential and regeneration capacity. These types of information and study results were used in developing NTFP action plans. Some perennial species like Kutki and Maikopila needed multiple years of study and monitoring which is still ongoing in KCA. During this process the ethnobotanical knowledge was documented and indigenous practices of harvesting and collection were incorporated in prescribing sustainable harvesting guidelines. The sustainable harvesting guideline includes a monitoring system which is based on community defined and identifiable indicators. The monitoring system and the sustainable harvesting guideline is intended to support local people in sustainable harvesting of NTFP.
Activity 3.1 Participatory research on the status of high value NTFPs		At the outset of project, a team of botanists carried out a participatory research in which more than 7 local people were involved. At the end of the project, a total of 26 people were trained in forest inventory and monitoring. The study identified at least 13 highly valuable NTFP/MAP species that could be promoted for sustainable commercialization.
Activity 3.2 Establishing permanent plots for ecological monitoring		The research team established permanent plots in community forest. The plots were meant for ecological monitoring of NTFP/MAP species to determine their ecological characteristics specifically their regeneration and yield potentials. These plots were monitored on a regular basis by LRPs under the supervision of research team.
Activity 3.3 Community indicators for monitoring		The monitoring system was developed using community identifiable indicators which were developed in consultation with local people; local indigenous knowledge was also incorporated in the developing monitoring system.

Activity 3.4 Establishment of NTFP database		The NTFP database was established at the project office in Taplejung, WWF Nepal and at academic institutions such as universities, central library system and in government institutions.
Activity 3.5 Monitoring system and sustainable harvesting guideline and their field testing		The monitoring system and sustainable harvesting guidelines were pre-tested in KCA and reviewed by experts in Kathmandu. The field testing were carried out to ensure that it was simple, pragmatic and user-friendly.

Annex 2 Project's final logframe, including criteria and indicators

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal:</p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <p>To develop community capacity to manage NTFPs for sustainable production and plant conservation in KCA</p>	<p>By 2008, 8 community forest user groups (CFUGs) have action plans for sustainable management and use of NTFPs</p> <p>By 2008, a community-based monitoring system and sustainable harvesting guidelines for key NTFP species established and tested</p> <p>By 2008, 26 community forest user groups in KCA are sustainably accessing NTFPs for livelihood</p>	<p>Operational plans of CFUGs</p> <p>Monitoring system</p> <p>Sustainable harvesting guidelines</p> <p>Project monitoring and technical reports</p> <p>Field research and workshop reports</p>	<p>Management of KCA transferred to the KCAMC</p> <p>Revision of policies contradictory (Forest Act, NPWC Act) to the proposed NTFP policy</p> <p>NTFP action plans ensure sustainable harvesting and equitable sharing of benefits</p> <p>Security situation does not deteriorate</p>
<p>Outputs:</p> <p>Output 1: 22 community forest user groups (CFUGs) in KCA practice community-based management of NTFP</p> <p>Output 2: Local livelihoods in KCA enhanced through sustainable utilisation of NTFPs</p>	<p>- By 2008, 8 CFUGs develop NTFP action plans and 8 CFUGs will implement their action plans</p> <p>- By 2007, capacity of 26 CFUGs enhanced for sustainable NTFP management</p> <p>-By 2008, 8 CFUGs practice sustainable harvesting for wild collection of NTFPs for subsistence and trade</p> <p>- By 2008, 5 community based NTFP enterprises established. They are:</p> <ol style="list-style-type: none"> essential oil production from Dhupi (<i>Juniperus indica</i>) and Sunpati (<i>Rhododendron anthopogon</i>) handmade paper from Lokta (<i>Daphne volua</i>) and Argeli (<i>Edgeworthia gardneri</i>) fruit drink preparation from fruits/berries of seabuckthorn (<i>Hippophae tibetana</i>) 	<p>CFUG operational plans and NTFP action plans</p> <p>Project technical and monitoring reports</p> <p>Training records</p> <p>Wealth ranking reports</p> <p>Project monitoring and technical reports</p>	<p>Resource persons available to help develop action plans with local communities</p> <p>CFUG plans are endorsed and adopted by communities</p> <p>Sustainable funding for plan implementation</p> <p>Political situation in Nepal favours field visits by researchers</p>

<p>Output 3: Community-based monitoring system of key NTFP species in place</p>	<p>4. incense stick production from Sunpati (<i>Rhododendron anthopogon</i>)</p> <ul style="list-style-type: none"> - By 2007, at least 200 poor/disadvantaged households have increased access to NTFP based livelihood opportunities - By 2008, a central level NTFP database established - By 2008, ethno-botanical knowledge of at least 11 NTFP species documented - By 2008, monitoring system and sustainable harvesting guidelines of at least 5 key NTFP species established 	<p>Plant database</p> <p>Verbal evidences through interviews</p> <p>Ethnobotanical knowledge documentation report</p> <p>Research, survey, monitoring and technical reports</p> <p>Sustainable harvesting guideline</p>	<p>Local communities especially the vulnerable groups will get access to and adopt livelihood opportunities provided by NTFPs</p>
<p>Activities</p> <ol style="list-style-type: none"> 1. Develop a community-based management of NTFPs 2. Promote local livelihoods through NTFP conservation and sustainable production 3. Develop a community-based monitoring system and sustainable harvesting guidelines of key NTFP species 	<p>Activity Milestones (Summary of Project Implementation Timetable)</p> <p>Project initiation workshop (yr 1), sensitisation training for collectors, traders and other stakeholders (yr 1); sustainable management of NTFPs/MAPs by 26 CFUGs, NTFP inventory and action plan development by 8 CFUGs (yr 1&2); NTFP management training to user groups and other KCA institutions on sustainable harvesting methods and monitoring (yr 2&3)</p> <p>Feasibility study including commercial potential, resource inventory, sustainable yield survey, market linkages and information (year 1), MOUs with traders; Pilot at least 4 NTFP based enterprises: identification of target groups, community planning, site identification and institutional arrangements (e.g. development of cooperatives), trainings, market/price information systems (yr 1&2)</p> <p>Participatory research on the status of high value NTFPs and ethnobotanical knowledge, establishing permanent plots for ecological monitoring, community consultations for developing indicators for monitoring (Yr 1 and 2); establishment of NTFP database, monitoring system and sustainable harvesting guidelines (Yr 2); Testing of monitoring system and sustainable harvesting guidelines (yr 3), sustainable harvesting guidelines publication and distribution to other mountain areas (yr 3), book on database of some important NTFP species found in protected areas in Eastern Himalayas and western Nepal.</p>		

Annex 3 Project contribution to Articles under the CBD

Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use		Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring	10%	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
8. In-situ Conservation		Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation		Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity	70%	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures		Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
12. Research and Training		Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	10%	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts		Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources		Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and

Article No./Title	Project %	Article Description
		intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information		Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Other Contribution	10%	Smaller contributions (eg of 5%) or less should be summed and included here.
Total %	100%	Check % = total 100

Annex 4 Standard Measures-

Code	Description	Totals (plus additional detail as required)
Training Measures		
6a	Number of people receiving other forms of short-term education/training (ie not categories 1-5 above)	325 people- 300 local people and 25 project and park staff, staff from partner organizations (technical training for forest management, business development, skill enhancement training for value addition, cooperative management, participants- local people, staff of partner organizations, project staff
6b	Number of training weeks not leading to formal qualification	2- 3 weeks
7	Number of types of training materials produced for use by host country(s)	2 - Chirayito cultivation training manual, - Inventory and monitoring of NTFP-used for training/orienting local youths-local resource persons
Research Measures		
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	8 NTFP action plans for 8 community forest user groups intended at assisting in sustainable management of key species found in respective community forest
10	Number of formal documents produced to assist work related to species identification, classification and recording.	1 - <i>Sustainable Harvesting Guidelines of 11 species of NTFPs found in Sacred Himalayas Landscape</i>
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	3 1- Central Department of Botany, Tribhuvan University, Kathmandu 2- Sacred Himalayas Landscape Programme, WWF Nepal, Kathmandu 3- KCAMC, Taplejung
Dissemination Measures		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	10 - inception workshops : national – Kathmandu and district level – Taplejung (2 events) - national workshop in Pokhara in which project researcher made

Code	Description	Totals (plus additional detail as required)
		<p>presentation,</p> <ul style="list-style-type: none"> - meeting organized by ICIMOD and participated by Project manager of KCAP - International level sharing meeting organized by WWF Nepal with support from Traffic International, WWF Germany - Final wrap up sharing meeting on results and outcomes of the Darwin Initiative project in Kathmandu and Taplejung (2 events) - <i>Regional workshop on Mainstreaming gender in NTFPs</i> sector workshop organized by ICIMOD - Regional level NTFP/MAP trade fair in Nepalgunj, Nepal- 2 events
15a	Number of national press releases or publicity articles in host country(s)	3
15b	Number of local press releases or publicity articles in host country(s)	3
16a	Number of issues of newsletters produced in the host country(s)	4 volumes in every 3 months
16b	Estimated circulation of each newsletter in the host country(s)	500 copies of each volume
17a	Number of dissemination networks established	4 <ul style="list-style-type: none"> - NTFP price information through the District Chamber of Commerce - seabuckthorn promotion facilitated by SNV/Nepal - essential oil producers' network - cooperatives network
18a	Number of national TV programmes/features in host country(s)	3 <ul style="list-style-type: none"> - seabuckthorn juice production - essential oil production - video documentary
19c	Number of local radio interviews/features in host country (s)	2 (FM and radio programmes)
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	<ul style="list-style-type: none"> - 28 Cardamom dryer - 11,579 GBP - Essential oil processing machine and electric heating system – 2,632 GBP - Seabuckthorn juice peeling and production machine – 1,504 GBP - Nepali handmade paper production

Code	Description	Totals (plus additional detail as required)
		tools - 375 GBP - Others (Incense stick, Lapsi candy and pickle, etc.) - 564 GBP Total : 16,729 GBP (this is monetary value of the materials: machines, tools, etc. handed over to communities) 2 digital cameras for use by Kathmandu office - 308 GBP TOTAL = 17,037 GBP
22	Number of permanent field plots established	35 permanent plots had been established for 5 species- lokta (2 species- <i>Daphne bholua</i> and <i>Daphne papyracea</i>), Chirayito (<i>Swertia chirayita</i>), Kutki (<i>Neopicrorhiza scrophulariiflora</i>) and Maikopila (<i>Saussurea topkegolensis</i>)
23	Value of additional resources raised for project	This project is jointly funded by other donors like WWF UK, WWF US, MacArthur Foundation, Ford Foundation, USAID, Traffic International/WWF Germany and local community contribution in KIND, these contribution equals to 69,928 GBP, does not include local communities' contribution in KIND

Annex 5 Publications

Type *	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Information booklets	<i>Understanding the Changes in Livelihoods Assets with Locals: A Case study from Kanchenjunga Conservation Area Project, Nepal (Annex 3), 2006</i>	WWF Nepal, Kathmandu, Nepal	www.livelihoods.org/organizationallink/WWF/WWFNEPAL , and www.wwfnepal.org/publication	
Articles	<i>Saving Nature- "Prakriti Jogaudai", 2006</i>	Haka Haki, Magazine, Kathmandu, Nepal	Mr. Gopal Tiwari,	
Articles	<i>KCA- The Gift to the Earth, in Nepali. Bhakta B. Thapa, 29 June 2008</i>	Gorkhapatra National Daily, Kathmandu	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal	
Articles	<i>"Chhasaya bhanda badhi jadibutijanya vanaspati' in Nepali 1 July 2008</i>	Rajdhani National Daily, Kathmandu	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal	
Book	<i>Gift of the Himalaya- Non Timber Forest Products of the Sacred Himalayan Landscape- Nepal, 2007</i>	WWF Nepal, Kathmandu, Nepal	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal, www.wwfnepal.org/publication	
Book mark	<i>Seabuckthorn juice- improves your health, supports mountain livelihoods, and conservation! 2008</i>	WWF Nepal, Kathmandu, Nepal	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal,	
Posters	<i>Important NTFP/MAP of Nepal Himalaya, 2007</i>	WWF Nepal, Kathmandu, Nepal	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal,	
Book	<i>A Manual of NTFP in Nepal Himalaya, Dr. Suresh K. Ghimire, Dipesh Pyakurel, Bal Krishna Nepal, Indu B. Sapkota, Rudriksha Rai Parajuli, Bhesh Raj Oli, 2008</i>	WWF Nepal, Kathmandu, Nepal	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal	£3.73 for an institution and £2.24 for personal use (£ 1= Rs.138 approx

Book	<i>NTFP of Nepal Himalaya, Database of important species found in protected areas of the Northern Mountain and Sacred Himalayan Landscape</i> , Dr. Suresh K. Ghimire, Dipesh Pyakurel, Bal Krishna Nepal, Indu B. Sapkota, Rudriksha Rai Parajuli, Bhesh Raj Oli, 2008	WWF Nepal, Kathmandu, Nepal	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal	£3.73 for an institution and £2.24 for personal use (£ 1= Rs.138 approx)
DVDs, CDs	<i>Natural Herbs: Treasure of the Himalayas</i> , 2008	WWF Nepal, Kathmandu, Nepal	WWF Nepal, P.O.Box 7660, Baluwatar, Kathmandu, Nepal	

Annex 6 Darwin Contacts

Ref No	14-013
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Annex 7 Financial report 2005-2008