

Birendra KC · Shin Nagata

Refugee impact on collective management of forest resources: a case study of Bhutanese refugees in Nepal's Eastern Terai region

Received: September 13, 2005 / Accepted: March 20, 2006

Abstract This article analyzes the relationship between forest resources, refugees, and the host population. The findings of the research suggest that the host population are heavily dependent on the local forest for their daily needs such as fuelwood, timber, grazing area, fodder for domestic animals, foods, and medicine in addition to cultural and esthetic needs. The forest has also been relied upon for agricultural needs such as manufacture of agricultural tools, maintenance of irrigation water systems, erosion control, and fertilizer needs. The forest was under a sustained demand as any other Terai forest of Nepal. After the arrival of refugees in 1992, the demand for forest resources increased substantially. Initially, the construction of the refugee camps decreased the total forest area and also required some felling of trees. More significantly, the refugees themselves became active users of the forest resource, which generated extra pressure on the forest and created scarcity of forest resources. Before the arrival of the refugees, forest management and monitoring of illegal use of the forest resources were carried out by the government through its local forester office. The local residents were active users of the forest resources, but were passive in managing and maintaining the forest resource. However, competition from the refugees instilled a desire in the local population to safeguard and protect the dwindling resource against the external threat by creating the Humse Dumse Community Forest.

Key words Forest resources · Refugees' environmental impact · Community forests · Collective action · Forest management

Introduction

According to the United Nations High Commissioner for Refugees (UNHCR), there are four main reasons for refugee flows: political instability, economic tensions, ethnic conflict, and environmental degradation (UNHCR 1995). During such humanitarian crisis, the most immediate response is providing assistance and protection to the refugees such as food, shelter, and medicine. The arrival of refugees in any country brings both cost and benefit to the host area. The benefits are usually in the form of cheap and skilled labor (Whitaker 1999), expansion of consumer markets, infrastructure improvement such as building of roads and schools, and increased international aid (Locke 2000; Rutinwa 2003). Whitaker's study on the impact of Rwandan refugees in Tanzania concludes that refugees provided cheap and skilled labor to the local farming community, hence increasing yield. However, little attention has been paid to the environmental impacts when these refugees settle down in a new area, even when it has been widely accepted that refugees have significant negative impact on the local (host) environment. Environmental issues such as deforestation are sometimes present in host areas before the arrival of any refugees, but have been made worse by refugees resulting in loss of forestry resources. As refugees usually arrive at their host area with little food and possessions, the local environment is the only means support for their survival until proper care is provided by humanitarian organizations and NGOs. For example, refugees cut trees for shelter, collect fuelwood for cooking, and forage forest resources for food (Yanda 2001). The pressure of refugees on the local forest leads to environmental problems such as deforestation, land degradation, and depletion of forest resources (Allan 1987; Black 1994, 1998; Shephard 1995; Ghimere 1996; Jacobsen 1997, 2001; Yanda 2001). For rural populations in developing countries the forest is intimately linked to their survival and livelihood (FAO 1993a). For example, in Nepal, populations are dependent on the forest for energy, agriculture, agroforestry (Gautam 1993), and other social functions such

B. KC (✉) · S. Nagata
Department of Forest Science, Graduate School of Agricultural and Life Sciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan
Tel. +81-35-841-7508; Fax +81-35-841-5235
e-mail: rain@fr.a.u-tokyo.ac.jp

as recreation and celebration of festivals and practicing their customary traditions. The arrival of refugees creates extra pressure on the already scarce resources and leads to scarcity and competition.

Nepal has hosted about 100 000 Bhutanese refugees since 1992 who fled their home country because of cultural persecution (Baral 1996) and are settled in seven campsites on government Forestry Department land in the Terai region of Morang and Jhapa districts. The Terai region of Nepal is densely populated, placing a heavy burden on the already dwindling forests. During refugee camp creation, many large Sal and other trees were cut down to provide space to accommodate these refugees. This forest area was originally used for agroforestry, grazing, and fuelwood with informal but well-defined usage by the local villagers. In Nepal, which has one of the highest deforestation rates (4%) in South Asia, large-scale intrusion into forest areas by refugees for both fuel and timber has created scarcity of forest resources, such as fuelwood, and have altered prior local forest management practices.

Materials and methods

Research site: general information

Among the seven refugee camps, three camps collectively called the Beldangi camps in the Jhapa District were selected for the case study. The Beldangi Refugee Camps are located 8 km north of Damak town (Fig. 1). The three camps are located in very close proximity and are situated on government-owned forestland. The Beldangi I Camp borders the Ratuwa River, while the Beldangi II Ext. Camp borders a village area and the Beldangi II Camp lies between the Beldangi I and Beldangi II Ext. Camps. The members of the local population under study are predominantly farmers by profession, apart from a few of the ethnic caste such as blacksmiths and tailors. Near the refugee camps, most of the farming households are situated an average of 100 m apart. Most of the villages are homogeneous in caste and in some cases some ethnic groups were clustered together within the villages. These inhabitants with a population of 17 076 and 2800 households are the legal users of the local forest.

The forest where the refugees are housed is called Humse Dumse Forest. Its boundary to the east is the Ratuwa River and that to the west is bordered by privately owned farming lands. The north side is surrounded by the Chuli hills and in the south lie the villages and Damak town. The geography of the forest area is flat with some inclusions of hilly and steep areas. A majority portion of the forest is afforested area. The forest can be classified as tropical deciduous monsoon forest (Ushura Pradeshia Pathjhar). There are some rivers and streams leading to the village fields and most of them run through the refugee camps.

There is no documented evidence of the history of forest management for the Humse Dumse Forest. Based on discussions with the local people, it appears that the forest was

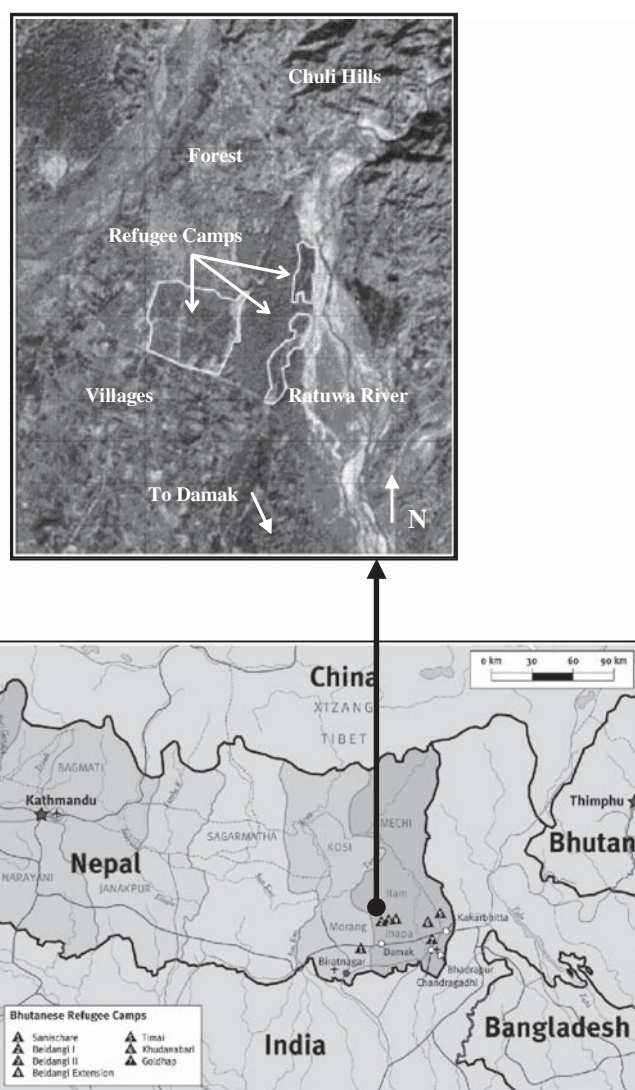


Fig. 1. The location and profile of the Beldangi Refugee camps (research site). Source: *Top*, UNHCR (2002); *bottom*, HRW (2003)

managed under the supervision of Forest Office of the Morang District until about 1978. Clearing and cultivation were prohibited and a forester stationed at the ranger's office administered the monitoring of the forest. However, cutting of firewood, cattle grazing, fodder collection, and foraging for foods and wild berries were freely allowed. With no formal institution to manage the forests, the villagers living in close proximity to the forest utilized it to sustain their livelihood. Any illegal use of the forest and damage was to be monitored by the forest rangers stationed between the boundary of the village and the forest. The Humse Dumse Forest was regarded as a common forest resource to all the villagers living near it that was managed by the government.

Research methodology

The study site was visited from 20 June to 31 July 2004. The research was mainly qualitative and the information was

obtained using various techniques. The research site was surveyed from 25 June to 10 July for data collection and also to obtain the views of the stakeholders, mainly the host population. In addition to collecting secondary data, primary data was collected by using key informant interviews, focus group discussions, and rapid rural appraisal (RRA) tools such as transient walk, historical mapping, participant observation, semistructured questionnaires, and triangulation. RRA was chosen because it allowed for learning rural conditions in an intensive interactive and expeditious manner (Messerschmidt 1995). Interviews were conducted with officers of UNHCR, the World Food Programme (WFP), and the Red Cross Society (who look after the welfare of the refugees) to understand how they dealt with environmental problems caused by the refugees. During the interviews and discussions, the participants varied in number from 3 in informal settings to 30 in formal settings.

In order to collect the quantitative data for private tree plantations and the fuel source for cooking by the host population, RRA was carried out with 21 representatives of the seven wards (a ward is the smallest political or electoral unit in Nepal) using tools prescribed by the FAO (FAO 1993b). The representatives were not randomly selected but were chosen on the basis of three criteria: (1) having lived in the village for more than 45 years, (2) having the School Leaving Certificate (SLC) from the Nepal Board of Education, and (3) being thoroughly familiar with the residents of their respective ward in regard to their social and economic status. These criteria were set in order to ensure an effective and fairly accurate RRA. An historical matrix tool was conducted by drawing three circles on the ground to represent the years 1980, 1990, and 2000. Inside the circles, sections were divided to represent fuelwood, kerosene, cow dung, etc. The representatives were given ten stones (100%) for each village group.

The representatives were asked to place stones in the divided sections of the circle as they remembered the cooking habits in their respective wards. Finally, the stones were tallied and the average cooking sources for the 3 years were derived. A similar procedure was used to derive the data for private tree plantations.

Results

Forest dependence of local population

Through interviews, discussions, and participant observations, the structure of major forest activities and dependence on the Humse Dumse Forest by the local host population was derived (Fig. 2). Fuelwood needs for cooking and heating, and timber needs for various functions such as building and repairing houses and making furniture for daily use for the host population were entirely provided by the forest. The forest also provided the raw materials of solid wood to make agricultural tools such as spades, ploughs, thrashers, etc. All the villagers in the study site

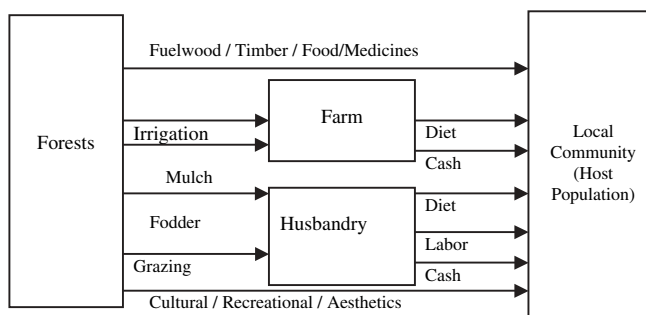


Fig. 2. Forest dependence of the host population, showing the flow of forest resources to sustain the livelihood of the host population

raised some domestic animals such as cows and goats to generate extra income by sale through the local market and to meet their consumption requirements. The forest provided both fodder and grazing land for these animals.

The villagers also collected dead leaves from the forest to make mulch and use them as organic fertilizers for growing vegetables in their fields. In addition, the forest is a source of small streams that flow into the villages facilitating irrigation for the fields. During rainy seasons, the villagers gathered mushrooms and other edible herbs, fruits, and wild berries from the forest. Furthermore, the forest serves as a burial ground for the dead, and villagers performed yearly cultural festivals such as prayers for the dead ancestors in these cemeteries. The only access points to the neighboring Chuli hills and beyond are through the forest area near the bank of the Ratuwa River.

Forest utilization by refugees

Participant observations and informal interviews exposed a host of activities performed by the refugees to extract forest resources for their daily use, although the refugees were provided with daily necessities such as vegetables, rice, and tea for food, and kerosene for cooking and lighting fuel. The refugees were hesitant during formal interviews to reveal their forest activities and the forest resources they utilized. However, incidental observation of all the refugee huts during the camp survey showed that all huts contained wood stoves. Visits to the refugee huts during lunch hours (9 a.m. to 11 a.m.) revealed that 14 out of 20 households engaged in cooking; 12 were using wood as the cooking fuel and 2 were using both wood and kerosene.

In addition, all refugee huts had some kind of furniture such as beds, tables, chairs, and so on, and upon inquiry, it was found that most of the furniture was bought from the local market (Fig. 3). Some observations also revealed that the refugees hunted birds in the forest with catapults, collected mushrooms, uprooted small herb saplings for medicinal purposes, collected twigs and broken branches for fuelwood, and bought solid fuelwood from woodcutters. In summary, the refugees were found engaging in activities such as the collection of fuelwood, small timber-quality wood for furniture and tools, mushrooms, fruits and berries, herbs, and small birds and animals.

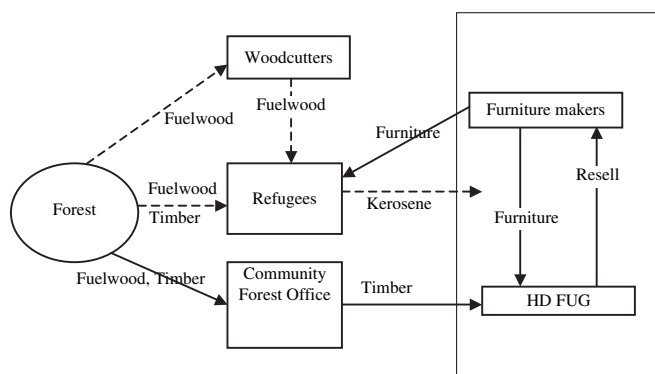


Fig. 3. The flow of forest resources and fuel between different parts of the community. *Dotted arrow*, illegal flow of the forest resources witnessed during the field survey; *solid arrow*, unrestricted flow of the forest resources between the different community components; *HD FUG*, Humse Dumse Forest User Group

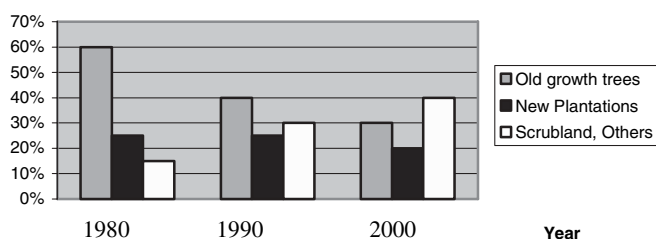


Fig. 4. Time series change in forest cover of Humse Dumse forest. Data derived from historical matrix with representatives of village wards

Refugee impact on forests

In 1980, about 60% of the Humse Dumse Forest was composed of forest with old-growth trees (Fig. 4). The other remaining sections were either plantation or barren areas created by erosion of the Ratuwa River. After the arrival of the refugees in the district, the area of old-growth trees decreased to about 40% of the forest area, whereas the areas of barren land or other uses, such as the refugee camp settlement, increased to 30% from 12% in 1980. The decrease of the old-growth trees continues to the present, resulting in the reduction of old growth forest area to 30%. Although it could not be substantiated, during discussions and interviews the local population regarded the arrival of the refugees as a major factor in the decline of forest cover. For example, the local residents mentioned that most of the refugee settlements were created by felling old-growth trees.

The forest was also home to many species of wild animals and birds such as spotted deer, wild boars, peacock, and longoor monkey. Creation of the refugee camp had reduced the habitat area for these animals and resulted in near extinction of these wild animals. In addition to the increase in the movement of people within the forest zone has created disturbances to the few surviving wild animals. At the time of the survey, the community forest office was sheltering a pair of wild boars, two deer, and some longoor monkeys in an enclosure within the office compound.

Table 1. Fuel sources for cooking and heating used by the host population

Year	Solid wood	Twigs	Cow dung	Kerosene, gas
1980 ^a	90%	10%	0%	0%
1990 ^b	80%	15%	0%	5%
2000 ^c	50%	20%	15%	15%

^a Before arrival of refugees

^b Time of refugee arrival

^c Most recent survey

Impact of refugees on livelihood of local population

Three major impacts on the agricultural livelihood were derived from the research. First, the refugee settlements hindered access to and maintenance of irrigation canals that ran through the forest into the village fields. Second, the flow of garbage, such as plastic bags and bottles, and raw sewage from the refugee camps to the farms resulted in increases in diseases such as dysentery and diarrhea according to interviews with the local villagers. Third, the collection of decomposed forest leaves as mulch was decreased due to the decline in forest area and also because of littering by the refugees in the forest.

In terms of support for husbandry by the forest resources, the refugee camp prohibited the local population from collecting fodder and providing grazing area for animals. Before the arrival of the refugees the forest was the basis of livestock support for the villagers, who let the animals graze freely in the forest. However, after the arrival of refugees in 1992, the number of reports of lost or stolen cattle increased, with the refugees often being the culprits. The refugees either slaughtered the animals for meat or sold them in far-off markets. The villagers responded by keeping their cattle at home and feeding them with farm fodder.

Detrimental impact on the availability and quality of fuelwood was reported during the field visits. For example, before the arrival of the refugees local people could venture into the forest and collect firewood in doko (woven bamboo baskets) during the dry season in amounts sufficient for the entire year. However, after the arrival of refugees in 1992, the host community noted that there was a decline in the use of wood and increases in the use of other resources such as cow dung, kerosene, and gas for cooking (Table 1). For example, 80% of cooking before 1990 used solid wood as fuel. In 2000, wood usage dropped to 50% and was replaced by cow dung, kerosene, and gas with a combined percentage use of 50%. The villagers attributed the change in fuel use pattern to several factors. First, the availability of dead Sal trees was greatly reduced as the refugees also utilized them for cooking purposes. Second, the refugees were selling or bartering kerosene to the host population at a price cheaper than the market price and this worked as an incentive for the host population to switch to kerosene. In addition, many local households were building biogas plants with support and technical guidelines from the Humse Dumse Community Forest. Although the shift into biogas for cooking is a

welcome sign, increased use of dried cow dung and kerosene is detrimental. For example, use of dried cow dung for cooking decreases the availability of organic matter to farmers for their agricultural land. Moreover, as the refugees sell their kerosene and use wood from the forest for cooking, the pressure on the forest is increased.

The demand for timber was also substantially increased after the arrival of the refugees as refugees bought furniture from the local market. The aid agencies only provided bamboo to the refugees for building purposes. Interviews with local furniture manufacturers revealed that some part of the timber supply was coming from the Humse Dumse Forest and other material came from auction sites in the Morang districts. Through the use of an historical matrix it was learned that, the local population began to plant trees in private land from none in 1980 to approximately 10 trees per household in 2000 because of scarcity of fuelwood and timber and competition for these resources from the refugees. The positive increase and interest to plant more trees in private property was due to increased value of tree resources. In response to the question of what actually inspired farmers to plant trees, a number of reasons were cited. The scarcity of fuelwood, timber, and fodder were some of the motivating factors.

More prominently, the poor, lower-caste blacksmiths of the villages and seasonal woodcutters were the most affected in terms of subsistence dependence. The blacksmiths produce a variety of instruments as agricultural tools for the villagers by using charcoal from the forest for smelting. Because of the scarcity of resources, the blacksmiths can no longer extract charcoal directly from the forest and must purchase wood from the Community Forest (CF) in order to make the required charcoal. Scarcity of fuelwood has also marginalized subsistence woodcutters. Although some continue to illegally sell wood from the forest, they have been subject to prosecution and hefty fines when caught.

The forest is the main burial site for the villagers. All the interviewees in the ethnic groups had buried one or more dead family members in tombs in the forest. However, the creation of the refugee camps had destroyed these tombs. The disappearance of the tombs has grieved many village families, who are no longer able to practice their tradition. Currently, many villagers bury their dead in the forests of Kherkha, a distance of 15km from the Beldangi villages.

Collective action by local population to monitor and manage the forest

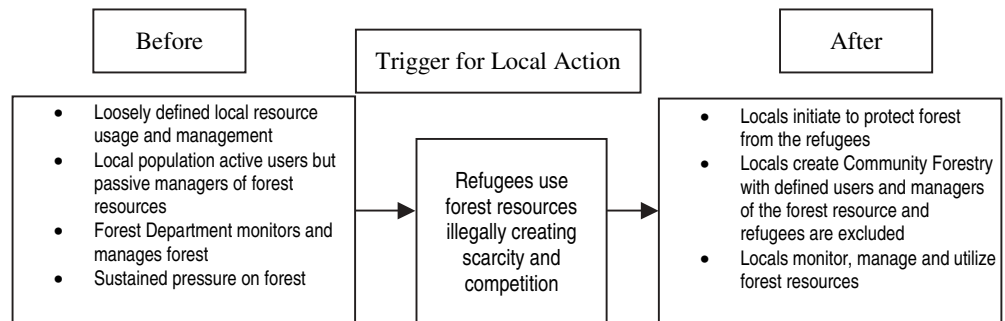
As the arrival of the refugees created scarcity and competition for forest resources, the local population decided to take action to protect the forest by creating Community Forest as facilitated by the 1990 Forestry Master Plan of Nepal. Under this plan, communities could apply to manage and utilize local forest resources and generate revenues to use for local development. The campaign to create Community Forestry in Beldangi began in 1995, 3 years after the

arrival of the refugees. The interest to turn the state-managed forest into a community-managed forest was generated by the village members of Damak Municipality Ward 3, who were in the closest proximity to the forest and the refugees. The creation of the community forest was an effort to protect the forest from the rapid increase in deforestation and degradation after the arrival of the refugees. With guidance and technical advice from the local forest officer, the CF Constitution was developed and submitted to the District Forest Office (DFO) in the late months of 1995. The proposal was finally approved in 1996 and the Humse Dumse Forest User Group (HDFUG) was established. The refugees were not included as members of the community forestry and were barred from using the forest resources. The refugees who were caught using the forest resources such as fuelwood and timber were prosecuted according to the CF Regulation and fined monetarily for small offenses and jailed for up to 2 years for serious offenses such as felling a well-standing and healthy tree.

The forest office provides technical knowledge on the different aspects of forest management. Tree planting sessions are carried out under the supervision and technical guidance of one of the experts at the local forest office. Care and maintenance of the nursery where the seedlings are planted for the tree saplings are also done under the supervision of the forest office. Monitoring of the forest is carried out in collaboration between the local forest office and the CF. Because the CF has only bicycles to patrol around the forest perimeter, the forest office usually agrees to take the Forest User Group volunteer guards to the far corners of the forest area in their four-wheeled vehicle. Prosecution of people caught in illegal activity or procuring damage to the forest is performed by the forest office. The CF first prepares a formal complaint to the forest office about the nature of the crime and the details of the perpetrators. After reviewing the complaint, the forest office takes appropriate action such as levying fines for minor offenses and jailing offenders for serious offenses. Generally, there seemed to be good rapport and communication between the CF and local forest officers. One major reason for this positive sign could be that the office of the CF and the forest office were located side by side.

The main objective of the Humse Dumse Community Forestry was to engage in sustainable use of the forest resource and promote preservation and conservation. In addition, the CF was also obliged to stop erosion of the forest area, safeguard and protect the diversity of the forest, stop the overexploitation of the forest resources, and improve the quality and quantity of the forest. The forest user group (FUG) created a committee to oversee and brainstorm activities related to the proper management of the community forestry. Management activities were implemented with technical assistance from the local foresters who represented the DFO. Decisions made by the working committee are carried out with the contribution of labor from FUG members.

Fig. 5. Humse Dumse Forest management before and after the arrival of refugees



Discussion

The main objective of this study was to explore the impact of refugee settlements on local forest resources. The research examined the past forest condition and management practices and the emerging managing practice due to the threat posed by the presence of the refugees. From the findings, it is evident that the refugees acted as a trigger for the local population to act more assertively for themselves and be active participants in local protection and management of the forest resources (Fig. 5). Before the refugees arrived, the local forest was managed by the His Majesty's Government (HMG) Forest Ministry and was utilized by the villagers according to the prevailing central laws and regulations. After the refugees arrived and acted as competitors for the resources, the local population established the CF to define the legitimate users of the forest resources and to exclude the refugees from further undermining their valuable resources. Through the CF, a more systematic distribution of the forest resources was initiated. At the same time, the locals have carried out rehabilitation programs to reforest the deforested and barren area of the forest territory. This suggests that local people can and do organize themselves to protect their common natural resources when faced with scarcity and competition and when their livelihoods are threatened.

There is a definite trend toward positive change in the area as the local people are now actively engaged in monitoring, managing, and improving the forest condition. However, there are lingering issues that must be tackled both at the micro level and macro level in order to insure future sustainability of the forest and local livelihoods. For example, at the micro level, hindered access of the host community to the forest to maintain irrigation canals could be solved by creating more efficient and maintenance-free irrigation canals with the support of international aid agencies. The current canals are long trenches with mud walls prone to constant flooding and debris collection requiring frequent maintenance. By constructing small, closed concrete canals, there would be no need for the villagers to annually tend the canals to insure that the water flows free of debris to the villagers' fields.

The use of fuelwood by the refugees has been the most critical determinant of the growing resource scarcity and environmental damage. Because the main incentive for the

refugees to sell the rationed kerosene and use fuelwood from the forest is to generate expendable income, creation of jobs for the refugees within and outside the camp would lessen their tendency to conduct illegal activity. For example, because a majority of the refugees have backgrounds in agriculture, with training and the provision of seeds, the refugees could be encouraged to grow vegetables and small-scale cash crops around the camps to sell in the local market. Skill development training for vocational activities such as tailoring, weaving, and basket-making along with provision of micro credit can also make the refugees self-reliant and help them generate income.

At the macro level there has to be shift in policy regarding the size and the location of the refugee camps. Smaller and dispersed refugee camps have less impact on the environment than large and concentrated settlements (Jacobsen 1997). Hence, the dispersion of the refugees at the Beldangi camps to smaller and more physically separated settlements could offer a viable solution to the resource crunch problem. Improving the attitude of the refugees toward the local environment is also a prerequisite for the sustainability of the local environment. Workshops and training classes to inform the refugees about the importance of the local environment should develop awareness among the refugees and develop a positive feeling and respect for the local resources. In addition, curricula in refugee schools should include content that addresses local environmental problems and practical actions that can mitigate the problems.

Acknowledgments The authors thank the Humse Dumse Forest User Group for their support and help in conducting the research; the staff of the nongovernmental organizations (UNHCR, Red Cross Society (RCS), Lutheran World Service (LWS)) in Damak who were very willing to be interviewed and provide requested documents and data; The RCS, Damak Office, for providing transportation between the refugee camps; the refugees for allowing visits to their huts for conversation and observation; and all the members of the Rinsei laboratory of Tokyo University Forest Science Department for providing valuable suggestions during the entire phase of this research. The following representatives of the seven wards are thanked for their participation in the RRA: Sumitra Prasai and Man Bahadur Dewa (Village Ward 1); Chandra Bista, Krishna Maya Thapa, and Bhawani Thapa (Village Ward 2); Rodan Rai, Ganesh Rai, and Kumar Subba (Village Ward 3); Chandra Bdr. Bhandari, Tek Bdr. Dhimal, and Anil Bhandari (Village Ward 4); Naina Singh Bhandari, Prem Adhikari, and Bhim Prasad Guragai (Village Ward 5); Himalaya Dahal, Birendra Pokhrel, Bishnu Shrestha, and Govinda Karki (Village Ward 6); and Mahendra Niraula, Jay Bdr. Dhimal, and Dil Bdr. Magar (Village Ward 7).

Literature cited

- Allan NJR (1987) Impact of Afghan refugees on the vegetation resources of Pakistanis Hindukush-Himalaya. *Mt Res Dev* 7:200–204
- Baral LR (1996) Bhutanese refugees in Nepal: insecurity for whom? In: Muni SD, Baral LR (eds) *Refugees and regional security in south Asia*. Konark, New Delhi
- Black R (1994) Environmental change in refugee-affected areas of the Third World: the role of policy and research. *Disasters* 18:107–116
- Black R (1998) *Refugees, environment and development*. Longman, London
- Food and Agriculture Organization (FAO) (1993a) *Assessing forestry project impacts: issues and strategies*. Forestry Paper 114, FAO, Rome
- FAO (1993b) *The community's toolbox: the idea, methods and tools for participatory assessment, monitoring and evaluation in community forestry*. FAO Regional Wood Energy Development Programme in Asia, Bangkok, Thailand
- Gautam KH (1993) Evolving forest legislation: strengthening or weakening indigenous forest management? In: Tamang D, Gill GJ, Thapa GB (eds) *Indigenous management of natural resources in Nepal*. Winrock, Kathmandu, Nepal, pp 299–308
- Ghimere K (1996) *Refugees and deforestation*. United Nations Research Institute for Social Development, Geneva
- HRW (2003) *Trapped by inequality: Bhutanese refugee women in Nepal*. HRW 15(8)
- Jacobsen K (1997) Refugees' environmental impact: the effect of patterns of settlement. *J Refugee* 10:19–36
- Jacobsen K (2001) The forgotten solution: local integration for refugees in developing countries. *J Refugee Stud Working Paper* 45
- Locke C (2000) Changing places. *J Environ* 42:24–34
- Messerschmidt DA (1995) *Rapid appraisal for community forestry: the RA process and rapid diagnostic tools*. IIED, London
- Rutinwa B (2003) *The impact of the presence of refugees in north-western Tanzania*. University of Dar Es Salaam, Center for Study of Forced Migration, Tanzania
- Shephard G (1995) *The impact of refugees on the environment and appropriate response*. Forestry Program ODI, London
- United Nations High Commissioner for Refugees (UNHCR) (1995) *The state of the world refugees: in search of solutions*. Oxford University Press, Oxford
- Whitaker BE (1999) *Changing opportunities: refugees and host communities in Western Tanzania*. Journal of Humanitarian Assistance Working Paper 11, United Nations High Commissioner for Refugees, Geneva
- Wilkinson R (2002) A critical time for refugees and their environment. *Refugees No.* 127:4–13
- Yanda PZ (2001) *Are the environment matters viewed as issues of concern in refugee affected areas in western Tanzania?* University of Dar Es Salaam, Dar Es Salaam