*J. Natn. Sci. Foundation Sri Lanka 2003 **31**(1&2): 105-123*

CONSERVATION INNOVATIONS OF PERIPHERAL COMMUNITIES : CASE STUDY OF ADAM'S PEAK WILDERNESS

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Proceedings of the South and Central Asian MAB Meeting of Experts on Environmental Conservation, Management and Research, Hikkaduwa, Sri Lanka 15-18 October 2002

The Adam's Peak Wilderness area known as 'Samanala Adaviya' comprises the western half of the southern arc of the central massif of Sri Lanka. It extents from west to east over a distance of about 76.8 km, from the upper segment of Kelani valley to the Hortan Plains in the east. The width of this mountain forest varies from 1.2 km to about 12.8 km along the arc. It lies between latitudes 6^0 45' and 6^0 57' north and longitudes 80^0 27' and 80^0 50' east. The Peak Wilderness was classified as a Nature Reserve in 1940. Accordingly, it covers about 22,379.9ha of land. The crest-line of the mountain range runs at an elevation of about 1829 m. The arc of this mountain range, running from east to west, divides the drainage descending from the escarpment towards the south and the southwest from the drainage running down the northern dip-slope. The highest point of this mountain range is a rocky summit where the Buddhist shrine is located. This highest peak is about 2243 m high.

The wilderness area is surrounded by manipulated land use systems. In the north, tea plantations have extended to its boundary, while in the other segments (except in the east) the tea gardens of small-scale holdings and the family operated three unit land use consisting of homegardens, paddy and tea, are found in connection with traditional villages. Plantations have extended quite close to the ridge-crest along the dip slope of the mountain in the north, while in the south steep slopes are under natural forest cover across a relatively long distance.

The climatic, hydrological, historical, cultural and economic importance of the Peak Wilderness are great. Nearly 2.5 - 3 million people climb the mountain through the trails to revere the footprints. The indentation on the summit is venerated as the footprint of Lord Buddha by the Buddhists, of Adam by the Muslims and Christians, and of Siva by the Hindus. The cultural and religious significance of the Adam's Peak Wilderness, coupled with its unique economic and environmental functions, has earned its recognition as the Sacred Mountain Forest of the nation.

Biophysical Setting

The Adam's Peak Wilderness, widely known as "Samanala Adaviya", appears as the left shoulder of the arc of the central massif of the central highlands. The altitudinal

variation from the lower slopes of the south to the summit is about 1829 m. The conical shaped highest peak of the mountain range is located towards the northwestern segment of the mountain range (Figure 1). This range functions as a forest corridor linking Kelani-valley forest in the west with the Horton Plains in the east. Southern slopes are steep and form an escarpment to a greater distance, while the slopes in the north form the dipslope.

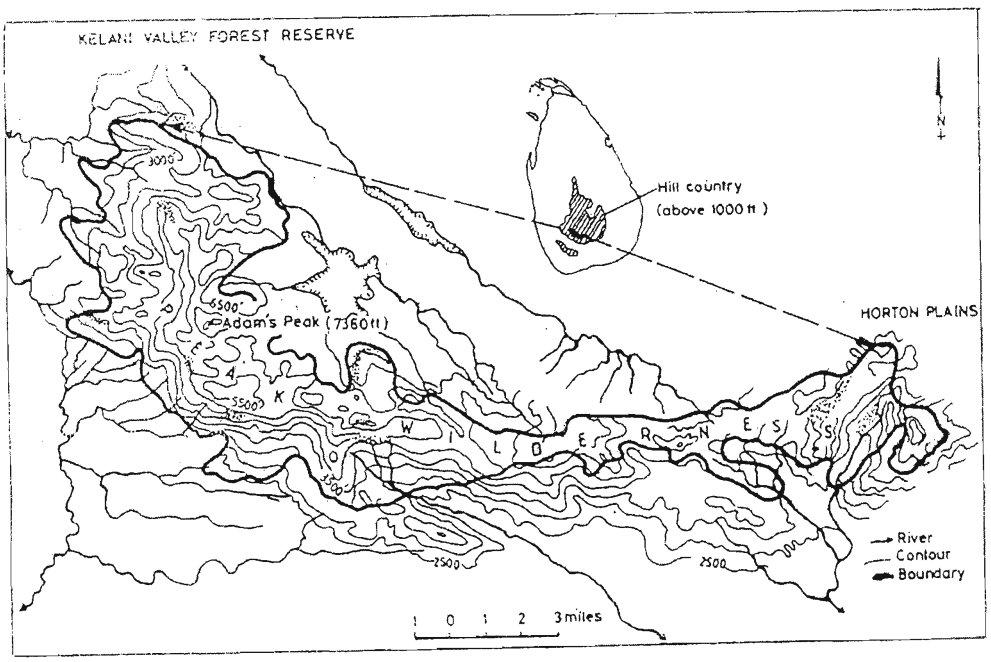


Figure 1: Location and the Terrain Condition of the Adam's Peak Wilderness

Hydrologically, this mountain range is extremely important. It is the matrix of three major rivers: the Kalu, Kelani, and Walawe running down to the western and the southern coast of Sri Lanka. The upper catchments of these rivers spread across the southern slopes inculcating a dissected landscape through the dense drainage (Figure 2). The Peak Wilderness is located in the agroecologically defined wet zone of the country. The amount and the distribution of rainfall are influenced by the elevation, which varies from 305 to 2243 m. The south and southwestern facis of the mountain range are exposed to the southwest monsoons, as a result this facis is relatively wetter than the northern and the eastern facis. The annual average rainfall of the eastern facis is about 5,080mm while it is about 6,350mm in the south and southwest. Seasonal variation in rainfall is less significant in the south.

The orographic effects of the mountain range and its elevation are significant in the distribution of forest types. The low montane, sub-montane and montane rain forests are associated with the lower slopes, mid-slopes and upper slopes,

respectively. The morphological and climatic variations have created a spectacular biological diversity. The Adam's Peak Wilderness is important because of the range of forest types and the spatial diversity. The lowland rain forest of the west and southwest is special in terms of floristic wealth. Towards the interior of the forest, it is made up of six layers: an emerging layer, main canopy, sub-canopy, underlying tree layer, shrub layer and a ground layer. The major species in the south (apart from the extreme east) are 'bu-hora' (*Dipterocarpus hispidus*), 'hora' (*Dipterocarpus zeylanicus*), 'thiniya' (*Doona congestiflora*), 'rat-dun' (*Shorea gardneri*), 'na' (*Mesua ferrea*), 'beraliya' (*Doona cordifolia*), 'keena' (*Calophyllum walkeri*), 'aridda' (*Campnosperma zeylanica*), 'welipiyenna' (*Anisophyllea cinnamomoides*), 'wal-del' (*Artocarpus nobilis*), 'milla' (*Vitex altissima*), 'dan' (*Syzygium caryophyllatum*), 'malaboda' (*Myristica dactyloides*), 'hedawaka' (*Chaetocarpus coriaceous*), 'athuketiya' (*Xylopia parvifolia*), 'kitul' (*Caryota urens*),' goraka' (*Garcinia cambogia*), 'badulla' (*Semecarpus gardneri*), 'para' (*Wormia triquetra*), 'beru' (*Agrostistachys coriacea*),'bowitiya' (*Osbeckia aspera*), 'karanda' (*Pongamia pinnata*), 'bata' (*Ochlandra stridula*), 'wal-enasal' (*Elettaria ensal*), 'wal-inguru' (*Zingiber cylindricum*), 'wal-kidaram' (*Arisaema neglectum*) and 'bin-beru' (*Acrotrema uniflorum*).

The inter regional cooperation and the shared responsibility are prerequisites for the sustainable management of the Wilderness area. The boundaries of four administrative districts run through this mountain range. Nuwara-Eliya administrative district is in the North; Kegalle District in the West; Ratnapura District in the South and the Badulla District in the East (Figure 3).

Throughout history, Adam's Peak has attracted the attention of the nation. Various aspects have been focussed on; scenic beauty, religious importance, biodiversity, forest, flora and fauna, hydrology, etc. Anthropogenically, the value of the Adam's Peak Wilderness depends on its uniqueness, which is valued holistically. Thousands of votaries of Buddhists, Muslims, Christians and Hindus ascent the mountain using trails running through the forest. Those who have been in the periphery of the Adam's Peak for over generations have shared the pride of its sanctity. They are emotionally, traditionally, culturally and also through livelihood, attached to the wilderness area, which is physically detached from the peripheral occupants. The interface between the wilderness area and its peripheral communities is complex and requires several years of in-depth research.

The Study

The case study presented in this paper is an outcome of a two-stage process. The first stage of the study was carried out to construct a profile on the interface between the people and the Adam's Peak Wilderness.[1] Bearing in mind the unique features of the interface and also the spatial variations, another study was conducted in 2001/2002 focusing on ethno-forestry, selecting one peripheral community -

Waleboda. Because of the strong linkages, it was selected to examine the local innovations of conservation importance that could provide local capital for management. A questionnaire survey covering 60 households as well as participatory methods to deal with ethnographic aspects, have been used in this research. Information pertaining to local innovation on forest management was processed to prepare this case study.

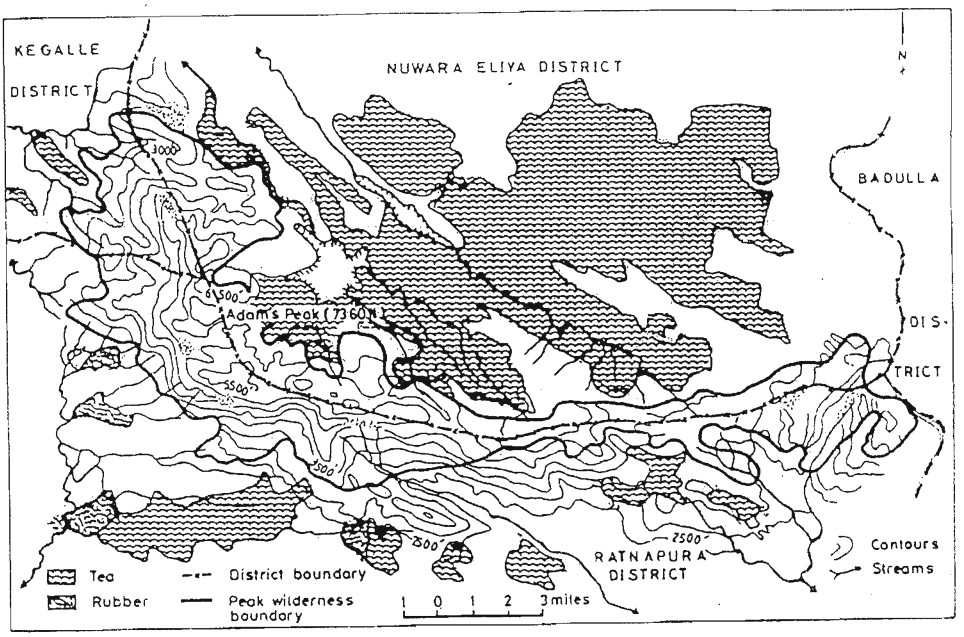


Figure 2: District Boundaries and Some Outstanding Features of the Periphery

Communities in the Forest Periphery

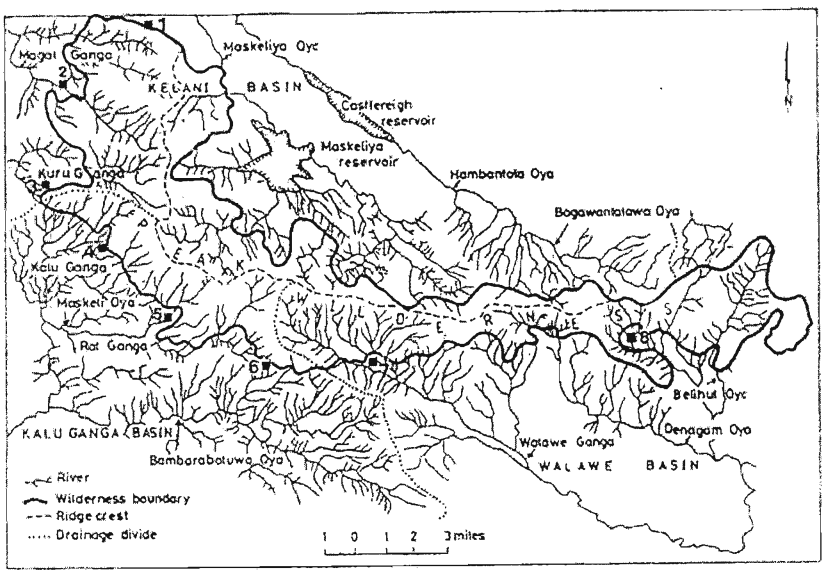
The periphery of the Adam's Peak Wilderness is marked with a long history of human settlements. There are about 11 clusters of communities along the periphery, eight are in the west and the south, while three are in the north associated with the plantations. The southern periphery is heavily dissected, marked with narrow valleys, water falls, hillocks and steep slopes. The history of the southern periphery goes back to several generations. As a result, when compared with the north, communities in the south are attached to the forest through their cultural roots and livelihood. The settlements in the north have been initiated with the establishment of tea plantations during the British Administration. Evidence reveals that the southern communities have often occupied the caves of the mountain, and some of them are still being used by Buddhist monks as their dwellings. Resting in caves while collecting forest products, and as an escape from heavy showers during the rainy season, has been quite common. Often when several days of forest gathering

Table 1: Community Clusters Investigated in the Field Survey

Name of the cluster	Location in respect to the Wilderness	Sample size	Villages in the cluster
Hangarapitiya	Northwest	72	Gedumbawaththa Getagahawaththa Henkanda Bambaragala Galamuduna Hangarapitiya Jambutenna Neelawathukanda
Maliboda	West	63	Magala Kadawata Immewaththa Ambagahakanda Kuruhenkanda Paluwaththa Peruppalla
Erathna	West	72	Gangabada Muruththettuwekanda Adavikanda Paludeniya Halgastenna Pelendakanda
Palabaddala	South	72	Andirikele Pawanella Ihala-mapalana Pahala-mapalana Balawana
Kudawa	South	64	Ihala-kudawa Luldeniya Lunugalahena
Dehenakanda	South	54	Henyaya Dehenakanda
Waleboda	South	71	Wathukarakanda Kovulketiya Penipanguwa Udakanda Gallenakanda Waleboda Thorawelkanda
Landuyaya	South	60	Landuyaya Ihala-galagama Medagodagama Werallapathana

is needed, gatherers stay in caves, to avoid long distant walks from the villages to the forests.

The distribution of village settlements reflects three outstanding features. One is the inclusion of a number of small traditional villages or hamlets forming one community cluster known as 'Maha-gammedda' (Table 1). The core area is known as 'Maha-gammedda' - the main cluster where the process of expansion had begun. The second feature is their location. The core of all these village clusters in the southern periphery is located in narrow valleys, which are less rugged, enriched by the influx of materials and rich in resources. The socioeconomic information reveals the outstanding variation among the communities (Table 2).



Location of Purana (Old) Villages:

1. Hangarapitiya
2. Maliboda
3. Erathna
4. Palabaddala
5. Kudawa
6. Dehenakanda
7. Waleboda
8. Landuyaya

Figure 3 : Drainage and the Location of Peripheral Villages

The general overview discloses that the valley bottoms of the main rivers descending to the lower slopes have become the settlements that have extended into the forest as 'tongues' (Figure 2). The third, is the linkage between the non-forest living with the forest. Though permanent occupation in the forest is not found, most of these communities are attached to the forest through culture, evolutional history of their settlements, and livelihood. The strength between their livelihood and the forest vary, not only among communities, but also among families.

The crosscutting feature is the strong community-forest interface, which has made it difficult to select one out of eight for an in-depth study.

Waleboda - As a Case Study

From the perspectives of investigating into local innovations, 'Waleboda' was quite attractive. It is located in the upper Walawe river basin. It consists of seven small villages; Wathukarakanda, Kovulketiya, Penipanguwa, Udakanda, Gallenakanda, Waleboda and Thorawelkanda. To a great extent, these village names refer to their traceable features. 'Wale-bada' is the lowest part considered as the 'stomach' of the area, and functions as the centre. Except 'Kovul-ketiya', named by reference to cuckoo birds, all others are located in a relatively high terrain, in small hillocks, so the word 'kanda' (which means hill), is used to denote the relative position.

There are about 680 families living in this cluster and about 30% have their houses built in small plots inside the forest boundary. Being located in the upper Walawe basin with a high density of tributaries, the villages are connected by suspension and log-bridges. The expansion of settlements to the forest has continued with the increased pressure of the expanding tea cultivation in the south. The location of forest patches in between the villages, and also the high densities of isolated trees in village lands maintain a forest outlook. The forest-based nature of Waleboda is in this respect, associated with this forest scenario, and its dependence on the forest.

The forest is a primary source of income for about 23%, a secondary source for 33%, and an occasional source for 44%. No household lives completely on non-forest sources, and all depend on forest either as primary, secondary or as an occasional source (Table 3). 48% of the families are on encroached land. 59% use surface mainly in relation to agriculture and forestry. Three units - homegardens, small plots of tea and a plot of paddy - are the combination, but the shares derived from these vary. The essence of this livelihood has been centred on local resources, the forest and the non-forest produce.

Local Innovations

Conservation of the forest is internal to the community, and folklore, tradition, culture, lifestyle and livelihood support it. The local innovations under these circumstances are related to a number of broad categories pertaining to forest conservation. These include traditional knowledge, human-forest interface, and perceptions including socio-cultural values of the forest.

Table 2: Socioeconomic Features of the Peripheral Communities in the South

Name of the cluster	Total population	Average family size %	Literacy %	Employment by sector (%)						
				Formal sector	Private	Agriculture	Casual based	Forest	Others	
Hangarapitiya	350	4.9	92	10	04	56	12	14	04	61
Maliboda	310	4.9	92	04	05	45	17	25	04	84
Erathna	352	4.9	93	09	01	47	13	23	07	65
Palabaddala	349	4.8	88	03	01	49	23	21	03	79
Kudawa	338	5.3	86	04	-	36	11	7	02	58
Dehenakanda	257	5	90	24	05	51	10	10	00	35
Waleboda	412	5.8	81	02	04	46	08	30	10	90
Landuyaya	247	5	83	02	02	64	21	09	02	67

Source: Wickramasinghe, Anoja[1] (1995)

Knowledge on the forest Ecosystem

The communities in Waleboda have a pioneering knowledge of the forest; the spatial differences, its subsystems/regions, dynamism, functions, phenological cycle variability across space, and diversity of the species. Often, these are used to describe the terrain. They demarcate the plant communities by their spatial locations and specific habitats. Names given to specific pockets (Table 4) indicate the forest types.

Table 3 : Distribution of Households by Source of Income (%)

Source	Primary	Secondary	Occasional
Agriculture	49	30	21
Forest	23	33	44
Casual labour	02	07	11
Other	26	30	00

The intensity of their contacts varies among the subsystems. 'Russa-kele' and 'Hele-kele' are believed to be the areas that are practically impossible to pass through. They consist of huge trees, multi-storey canopies, lianas, and undergrowth. Folktales of the gods and deities are also maintained to keep them undisturbed. The fear of removing the vegetation and also the produce of those areas is crucial. It is reported that nobody enters such areas because of fear of injuries and difficulties in finding their way back. For them, 'Russa-kele' is dedicated to the super power of the forest, so they are committed to preserving its superiority.

Four types of areas are accepted as permissible areas. The areas known as 'deniya', 'yaya', 'thalaa', and 'landa' are the areas that have strong contacts. These areas consist of relatively open plant communities and also provide the materials that get regenerated easily. Another feature is that these are in the lower parts of the forest, so their regular contacts with these do not disturb the dense forest located on the fragile areas. Their contacts with the interior dense forest are irregular or rare. The habitats known to them provide some specific biomass. The areas abundant with timber trees with huge trunks - 'maha-kandan'; lianas/climbers - 'wel'; pandanas - 'pan'; bamboos - 'una-bata'; rattan - 'wewal'; fibre - 'patta'; medicinal varieties - 'beheth'; resin - 'dummala' are well known to the people. The area extents of habitats are considered a reflection of their availability. As has been mentioned, well experienced forest gatherers know where to go for special products, how long it would take them to find the varieties that they are in need of etc.

Table 4 : Local Expression of Forest Types

Term	Characteristics
"Deniya"	Swamps/waterlogged areas with low height vegetation - place for Pandanas.
"Gonna/Arana"	Dense plant community dominated mainly by one species.
"Hele-kele"	Stretches of forest on escarpment/steep slopes.
"Russa-kele"	Dense forest with huge trees and lianas and climbers - impossible to pass through.
"Landa"	Less dense patches, areas of secondary growth.
"Thalaa"	Relatively flat areas with low vegetation/scattered trees.
"Yaya"	Stretch of a habitat/area dominated by one species.

The function of Adam's Peak is of value particularly in relation to hydrology, orographic effects on the climate and the vegetation. The climatic diversity found in the area is high; according to them the summit of the mountain range is in a zone of floating clouds. The area receives rain throughout the year without clear outbreaks. But the intensity varies between heavy showers soaking the vegetation, to dew and mist. All these replenish the sources of water and rejuvenate the vegetation. The origin of three prominent rivers Kelani, Kalu and Walawe from the terrain that they are attached to and the sense of ownership due to their ancestral history is considered a blessing. The local responsibility over the management of the wilderness area is well accepted.

Community - Forest Interface

They refer to three aspects of community-forest interface. These include the boundary distinguishing forest from the non-forest land, material connection and emotional attachment. For the villagers there is no boundary between their non-forest living and the mountain forest. It is part of the village ecosystem. They live in a very inter-dependent setting. The boundary between the peripheral villages and the forest is crucial for both systems. Their reaction to the demarcation between forest and the village land is intermixed. Accordingly;

i A heavily dissected boundary means strong interactions and connections. Therefore, their preference to have a demarcation with a solid separation is low;

ii The dissections are also a symbol of flexibility. Flexibility of the forest to accommodate people, and also the village land to allow forest expansion;

iii Strong or solid demarcation is a symbol of alienated interest on the part of the people;

iv Dissection also signifies the inclusion of culture into the forest.

These conditions clearly point out the community concern over living in the valley bottoms surrounded by forest. The cultural significance of the physical phenomenon found in Waleboda allows the people to consider them as part of the forest. Therefore, their forest use practices are considered to be internal to the forest, and part of 'Samanala Adaviya'.

Conservation Innovations

The second aspect is related to their conservation innovations through which value of the forest has been constructed. The consensus on conservation priorities was difficult to manipulate. The multiple benefits of the forest include, materials for their subsistence, service functions or the life supporting capacity and the therapeutic values of the forest. These have been in the list produced by the families and the community collectively. They have created an interrelated tri-facis model on conservation (Figure 4). Three facis represent service function, material output, and psychological well-being (Table 5). Their motives and the local innovations on conservation are related to these facis. They are inter-dependent and inter-related; if any of the facis get eliminated or fragmented, the whole system would collapse. For them the therapeutic life supporting capacity and amenity make them live in a physically comfortable and psychologically relaxed manner. The material output derived from the forest often varies depending on their needs. This also shows that the patterns in gathering and harvesting are gender specific and guided by needs. Being located between commercial tea agriculture, which is meant to generate cash, on the one side, and the natural forest that enables them to satisfy their day to day needs on the other, their interest in the forest is tightened under the broad label of livelihood security.

Forest Resource Use

In the livelihood system of the Waleboda communities, the forest and agriculture play a dominant role. This situation has changed during the expansion of tea plantations. About 80 years ago, Waleboda communities, as well as the other

traditional communities in the south had considered the entire 'Samanala Adaviya' as a source of their livelihood. Food production through agriculture had only been supplementary to what they had obtained from the forest. Forest produce has been categorized under the categories of end uses. These include food, timber, medicine, beverages, condiments etc., but each of these consists of a range of forest produce derived from various species, locations/habitats and during the seasons specific to species.

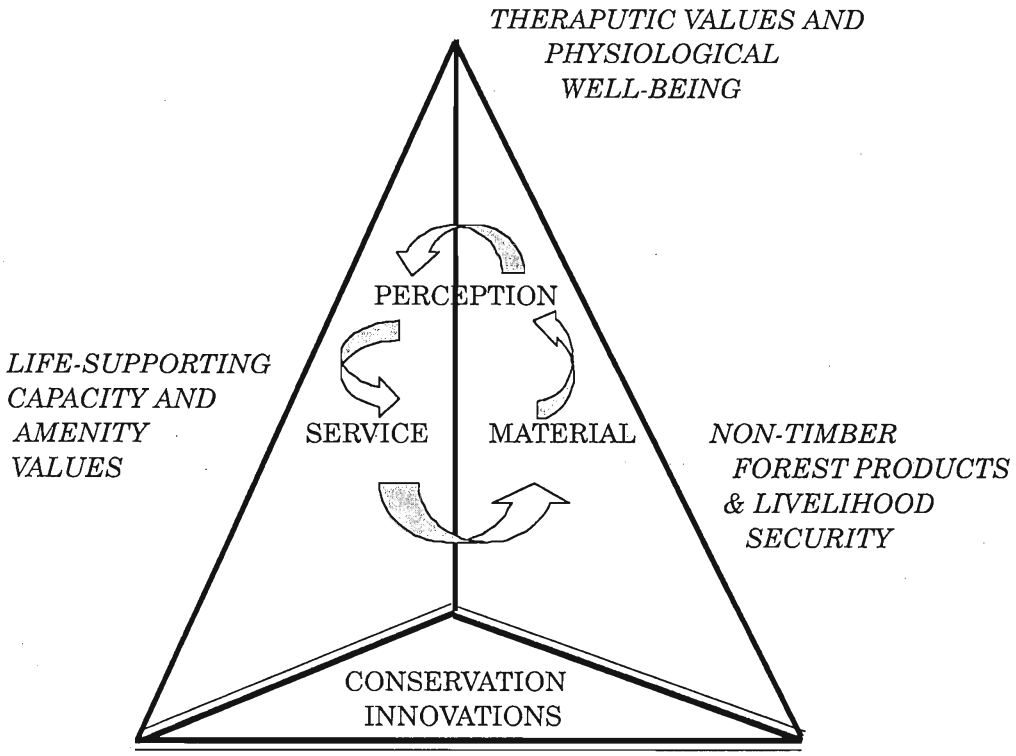


Figure 4: The Tri-Facis Related to Conservation Innovations

Knowledge on such features, seasonality, and species are internal to the community. The most reliable source of knowledge is reported to be the knowledge transmitted from the ancestors, which passes from the elderly/parents to the children. This process has continued with the minimum destruction owing to their continuous dependence on the forest for their livelihood. The forest has the potential to provide at least a few, if not many, varieties at any given time of the year. The meaning of diversity according to this community is defined from livelihood perspectives. The ability to provide many varieties throughout is then connected with the spatial context. For them, the lack of varieties and variability means the depletion of biodiversity, which is often reflected in the dietary intake of the people. This practical orientation of scientific knowledge has been innovated by those who live in harmony.

Table 5 : The Tri-facis in Local Innovations

Material	Service/life supporting	Therapeutic values capacity
Food (used as vegetables, porridge, carbohydrates, snacks, condiments, beverages).	Water/hydrology	Purity
		Superiority
	Diversity	Sanctity
		Prosperity
Medicinal	Climate	
		Sustainability
	Nutrient cycle	Generosity
Other (construction timber, resin, binding materials, raw materials)	Clean air	

The resources of the wilderness are central to food and nutritional security where the uses of medicinally useful forest products are also incorporated into the diet. The meaning of forest resources to those who believe and value the traditional lifestyle is rather complex. What they gather from the forest has little meaning, but how they use the materials that they gather from the forest is the social orientation, and it is done through their experience and knowledge. They regularly gather roots, rhizomes, stems, barks, flowers, leaves, fruits, twigs, nuts, seeds, pods and herbs from the forest. Most of these, except some fruits and nuts, are not ready to be consumed directly, or to be taken as part of their diet. They group the forest produce under six categories based on their uses, and women have a pioneering knowledge in this.

The most preferred types of fuelwood are derived from the forest. Branch wood of about 22 species is gathered from the forest floor. Twenty species are used as sources of carbohydrates.[1,2] These include three varieties of tubers, one climber, two trees and one palm that is widely used (Table 6). The most widely used dietary constituent in Waleboda is green leaves, primarily from 38 species. Porridge being the most preferred diet for breakfast is prepared using about 15 species. Similarly, 28 varieties of fruit, 10 varieties of species for beverages, 08 for condiments, one to make treacle and jaggery, and 280 species of medicinally useful products are used. Binding materials, timber, resin, bee's honey, small timber for construction, raw materials to make household utensils and agricultural equipment make another exhaustive list.

In this community, forest is the primary source of fuelwood. The most widespread uses include wild vegetables collected from the wilderness (92%), binding materials (89%), porridge stuff (76%), construction materials (70%), medicinal materials (63%), food entering to the main meals (61%) and fruits (24%). In addition,

Table 6 : Uses of Forest Products by Major Categories

Category	Materials	Widely used species
Carbohydrates (number of species used 20)	Seeds, fruit, tubers	'Thiththa-eta' (*Trichadenia zeylanica*) 'Pus-eta, hal' (*Entada phaseoloides*) 'Wal-del' (*Artocarpus nobilis*) 'Katu-ala' (*Dioscorea penetaphylla*)
Green vegetables (number of species used 38)	Leaves and tender twigs	'Miyana' (*Polygonum chinense*) 'Thebu' (*Costus speciosus*) 'Kebella' (*Aporosa lindleyana*) 'Kela-kohila' (*Lasia* spp.) 'Diya-beraliya' (*Monochoria hastata*) 'Heen-bovitiya' (*Osbeckia octandra*) 'Kekilla' (*Gleichenia linearis*)
Porridge (number of species used 15)	Leaves, roots	'Hathawariya' (*Asparagus racemosus*) 'Eramusu' (*Hemidesmus indicus*)
Fruit (number of species used 28)	Fruit	'Etamba' (*Mangifera zeylanica*) 'Mora' (*Euphoria longana*) 'Damba' (*Syzygium assimile*) 'Embilla' (*Antidesma zeylanicum*) 'Himbutu' (*Salacia reticulata*)
Beverages (number of species used 10)	Stems, leaves, rhizomes	'Weniwel' (*Coscinium fenestratum*) 'Hathawariya' (*Asparagus racemosus*) 'Eramusu' (*Hemidesmus indicus*)
Condiments (number of species used 08)	'wal-enasal', 'goraka'	'Wal-kurudu', 'Wal-Kurundu' (*Cinnamomum multiflorum*) 'Wal-enasal' (*Elettaria ensal*) 'Goraka' (*Garcinia cambogia*)
Other (number of species used 02)	Florescence sap, bee's honey	'Kitul' (*Caryota urens*)
Medicinal (number of species used 280)	Various plants/parts	205 species are widely used (See Wickramasinghe, 1995 for the list)
Binding materials (number of species used 98)	Barks, leaves, lianas	'Wewal' (*Calamus rotang*) 'Krindi-wel' (*Rourea minor*) 'Bambara-wel' (*Dalbergia pseudo-sissoo*)
Raw materials for making utensils and industry (number of species used 12)	Leaves, stems, lianas	Rattan Bamboo Pandanas Fishtail palm

the share of forest products in the economy, primarily comes from treacle and jaggery is about 56%. The technologies for processing raw products in order to convert them into edible forms and consumable items have been innovated by them. The implication here is the orientation of the consumptive value of the forest to local livelihood and society is by the people themselves.

Therapeutic and Amenity Values

The people in Waleboda, as noted by all the other seven community clusters, perceive Adam's Peak as a sacred forest. The subjective content of the "Samanala Adaviya", is superior to their lives in the non-forest lands. Their understanding of the wilderness has been derived through what they have learned, heard, followed, believed and experienced. As a result, the healing effects of the forest extend beyond medicinal plants and their use in therapy. One simple explanation on "Samanala Adaviya" synthesizes how they perceive the wilderness. " Samanala Adaviya is not simply a mountain standing at the edge of our village. We are at the edge of its roof. Our community - we are sheltered by it, its extended generosity comes in many forms. Our respect for its sanctity enables thousands of deities and the God "Sumana Saman" - the god of the terrain, to consider us as the living beings relying on the generosity of "Samanala Adaviya".

The people in Waleboda consider themselves as one single community and it gives them an identity of their location. The small village clusters distributed across space are bound together and form "Maha-gammedda". This is considered as essential for social functions, their collectivity and equality. It is a symbol of strength. They perceive themselves as the living-beings in the system, and dependants, whose responsibility is to safeguard the system from external pressure. This commitment is influenced by their belief system related to purity, sanctity, life forms, gods, deities, sacred footprint in the 'Samanthakuta' - the peak, etc. As mentioned below their commitments to conservation have been strengthened by their perceptions.

"It is full of life and invisible powers that extends generosity towards us in the outskirts. Every life form, the trees, shrubs, herbs, bamboo, rhizomes, moss, pandanas and weeds of the 'Samanala Adaviya', carries its holistic features. We believe that nature itself has made us live outside to retain the purity of 'Samanala Adaviya', to retain the gods of the forests and deities who are in a better position to safeguard the forest. Hanging twigs on trees before entering the dense forest is a symbol of secured permission. Traditionally the resources of this terrain are not removed without performing such rituals. It has been accepted as the rules of the terrain, which are enforced by God "Sumana Saman".

The implications of these perceptions and values on conservation are direct and indirect. These have allowed to control over-exploitation and limit resource-gathering only to the needs. The level of satisfaction of these communities

when compared to the others reveals a wide gap. They attach great importance to the healthy food of the forest produced on a year-round circle. The use of herbal medicine for curing and treating ailments and food which prevent illness, are part of their life-style.

"Our food, diet, healing practices, housing and rituals are symbols of the level of satisfaction of the forest-based lifestyle that our ancestors had enjoyed".

"For us-the sanctity of 'Samanala Adaviya' is associated with the superiority of its functions. The day dawns from there, we believe that the sun worships the sacred footprints seven times before dawn. We revere the forest and the footprints from this distance to begin the day by worshiping".

These practices are accepted as part of their identity. This identity is noted in the materials that they use for house construction and the ingredients that they use in every diet. The strength of these locally evolved perceptions, has to a great extent, been degraded during the last few decades. The entering of non-territorial people into the forest without any respect for the life of the forest and its superpowers is the main reason for this. According to them, the unfailing generosity of this sacred forest will not last forever, because the gods and deities of the forest may not allow the violation of the rules of the terrain. Their perceptions on the life supporting capacity and the service functions are also broader. In the hierarchy, it occupies the highest position.

More strongly, their respect for the non-polluted water and the manipulation of climate, rainfall and mist, in particular, is quite remarkable.

"Water running down the streams is a symbol of its unfailing generosity. Our ancestors have described the holiness of these streams. The water running through millions of roots of medicinal plants has curative and preventive effects. It is the water that this 'Excellency' creates by catching the clouds, and releasing through the canopies of huge trees. It carries down the blessings of gods and deities before it falls on to the surface".

What they believe in, with regard to the superior functions of the forest is unique. Valuing the unfailing generosity of nature, for which they extend their gratitude, has evolved such belief systems, and such perceptions are of tremendous relevance to conservation. The holistic approach to conservation promoted through human linkages is strong and demands designation of 'Samanala Adaviya' as the Sacred Mountain Forest of Sri Lanka.

Management

The forest management has originated from their subsistence, religious concern, folklore and sanctity of the forest. Restrictions on hunting wildlife, cutting and felling large trees, over-exploitation of forest resources, have been enforced in respect to the superior powers; the gods of the forest, the God 'Sumana Saman' and the deities. Therefore, the management of 'Samanala Adaviya' to preserve its integrity is considered as their dedication, which in turn brings prosperity.

The prosperity that they expect by conserving the integrity of 'Samanala Adaviya' and its forest, does not come only in the form of forest products. The gathering of forest products fallen on the ground and the biomass that regenerate year after year or season after season, is non-harmonious. Spatial and species diversity, water, forest cover, fauna, leaves, flowers etc. are considered symbols of prosperity. Before collecting forest produce, the permission of the gods is sought by hanging twigs on huge trees which are believed to be the resting places of forest deities. This has become the common practice. Management means the maintenance of the system in a holistic way, without disturbing functions, sanctity and produce.

Apart from these well-accepted beliefs and myths, there are social regulatory mechanisms to assure their non-destructive uses. The felling of huge trees is considered a sin. The removal of large trees is interpreted as the displacement of space occupied by the deities. They are essential parts of the forest. The conditions set up by these communities is enforced through social regulations. Three principles are in practice. These include resource sharing, the mutual respect for community membership and sense of ownership together with the feeling of territorial rights. All these principles are devoid of individual desires. It was found that in the past even the clearing of the forest to put up a shelter had been made in consultation with the others, when it became evident that no alternative places are available.

They engage themselves in collecting forest produce in groups, except when tapping 'Kitul' (*Caryota urens*) for florescence sap. Group engagement represents the respect for community and equity. For generations they have been able to prevent outsiders from entering the forest for resource exploitation. All the paths leading to the forest have been through hamlets, so the possibilities of applying too much pressure on the forest have been minimized.

Their marital systems have also been in favour of keeping with the spirit of the community and locality. It was noted that in the past, about 98% of the marriages have taken place within the community cluster. This situation has changed slightly at present, with the migration of youth for education and employment. This implies that there is a tendency to undermine the socially accepted rules, practices and perceptions associated with conservation.

With the increasing distance to the forest, the domestication of the species of direct contribution to village livelihood is also found. This takes place in homegardens and along riparian belts. The growing of 'Kitul' (*Caryota urens*) and 'Bedi-del' in non-forest land is an example. They bring the seeds from the forest where the mother trees grow. The planting of wild varieties of greens and medicinal plants, like 'Hathawariya', 'Eramusu' etc., and also 'Wal-del' (*Artocarpus nobilis*) in village lands is considered as part of their innovative effort towards conservation. Their maxim seems to be that the time has come to regenerate the preferred species of the forest outside the 'Adaviya'. They have the knowledge and experience, while the mother-trees of the forest provide the materials.

Discussion and Conclusion

This case study highlights a number of issues related to traditional conservation innovations. The study represents ethnoforestry practices and the multiple value systems. The local people demonstrate the wealth of information available among the peripheral communities regarding the diversity of the forest and its resources, and this provides the basis for research and the means to secure community partnerships. Incentives for local investment are valued not only in terms of material or remunerative benefits. It also includes psychological satisfaction, which is the best therapy or means of healing. The Traditional Ecological Knowledge and local practices are integrated to the Waleboda community.

Local innovations have been subjected to change due to four main reasons. The first is related to the alienation of the local people, innovators of the forest, its diversity, therapeutic values, life supporting capacity, resources and their uses. The second is related to the alienation of the perception of the forest and its sanctity. The third is the lack of planning to accommodate their concerns to satisfy their interests. The fourth is the lack of policy instruments to eliminate commercial exploitation of forest resources and the land in the process of resource exploitation during the recent past. Gem mining is one of the best examples of this.

The possibility of losing local innovations is high. The alienation of these from policy formulation, under valuation, attitudinal changes and also the changing perceptions over forests are some of the reasons. The integrative approach to conservation has been initiated with local knowledge, experiments and practices of the local communities. It is not feasible to transplant the ideas of conservation and combine non-forest livelihood with the forest, if cultural roots are not available. Local communities have over generations, through their experience and knowledge, innovated the locally acceptable integrative approach to the issues that they have had to deal with. Food and nutritional security, poverty, conservation and its costs, traditional medicine, traditional knowledge, empowerment, equity, are some of the issues that one could address by recognizing and mobilizing the peoples innovations for conservation.

The typologies of situations related to local innovations are diverse due to the effects of local contexts. Traditional communities are the local innovators of the forests, their biodiversity, and the community-forest interface. Their rights and duties to contribute to the conservation efforts are strong. The integrative approach that combines livelihood systems and conservation is a way out for many problems that we have to deal. The feeling of community, resource sharing, and sharing of responsibilities are the key elements that could restore and promote local innovations in conservation.

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