Leuser Ecosystem*

*Ecosystem /ēˈkō-sīsˈtəm/ noun - a system involving the interactions between a community of living organisms in a particular area and its nonliving environment
Boundary of Leuser Ecosystem in Aceh province, comprises of 13 districts and covering 2.6 million ha of biodiversity rich forest.
The Leuser Ecosystem in Aceh province, includes parts of 13 districts and covers 2.6 million ha of biodiversity rich forest.

The Leuser ecosystem provides vital services for the province of Aceh. These ecological services, include the provision of a regular supply of high quality water, protection from landslides and floods, the regulation of local climate as well as effective pest control. The services and more sustain the lives of some four million people living in Aceh and North Sumatra.

The Leuser ecosystem can function as a life-support system due to its rich biodiversity resulting from its size and wide variety of habitats. Efforts to conserve the Leuser ecosystem date as far back as early 19th century, when the traditional leaders of Aceh lobbied the colonial government to protect their natural heritage, ranging from the mountains all the way down to the coast.

The boundary of the Leuser ecosystem follow natural landscape features, and the ecosystem itself is a natural unit which includes the traditional ranging patterns of large animals and areas of high wildlife concentrations. Few wild land areas in the tropics contain as rich array of habitat types as the Leuser Ecosystem. More than 100 km of the western boundary of Leuser Ecosystem lie along the coast of the Indian oceans, behind these sandy beaches lie fresh water peat swamps, while these in turn are backed by lowland rainforest which eventually sweep upwards to more than 3000 meters where forests give way to alpine meadows. The ecosystem also includes three volcanoes, high altitude plateaux, and mangrove swamps that sweep eastwards toward the Malacca strait.
The Leuser Ecosystem is the largest remaining area of undisturbed Malesian rainforest. It harbourss numerous species of mammals, birds, reptiles, fish as well as unknown numbers of invertebrates, plants and other organisms. Its fauna is the richest of any known Asian conservation area. All the large mammals that characterize the megafauna of Sundaland are still found here - tiger, orangutan, elephant, rhino, clouded leopard, sunbear etc. - and because the Ecosystem is large and includes the requisite habitat, these animals exist in viable populations, which means that the chances of their long term survival are greatly strengthened. This is perhaps the only place in the Malesian realm where this is still possible.
The increasing pressures to open up more forest for settlement and commercial enterprises has greatly increased the frequency of human-wildlife conflicts. Tigers are a threat to livestock and people, wild boar and elephants can destroy commercial crops and even the homes of farmers. Of all the wildlife that constantly come into contact with people living on the fringe of the forest, the elephant has recently gained a reputation as dangerous.

Elephants follow well defined “corridors” or routes through the forest year after year. Most conflicts occur when people or plantations businesses open up land on these corridors. Inevitably, if nothing is done to resolve these conflicts the elephants will be killed and eventually driven to extinction. This would impoverish the forest and reduce its services. Why?

It seems difficult to imagine an elephant delicately tending a garden, but scientists have reported findings on the importance of this species in looking after the forest. Let's look into the services provided by the elephant.

**Seed dispersal**

Elephants consume abundant amounts of fruits when available; the seeds pass through their guts and after being expelled -sometimes tens of miles down the trail- these seeds give rise to new plants. This “service” helps to maintain the biodiversity of the forest, as well as naturally rehabilitating degraded forest.

**Largest horticulturalist**

As the largest animals in the forest, the elephant play a functional role in the forest ecosystem in unique ways; They alter the physical structure of vegetation when they feed, they help fertilize the soil with the large amounts of nutrients with their feces, they provide food and create habitats for a large numbers of vertebrates and invertebrates, and engineer pathways through the forest that are used by a wide variety of other species.

Elephants are exuberantly expressive and emotional creatures. Joy, anger, grief, compassion, love; the finest emotions reside within their great masses. Through years of research, scientists have found that elephants are capable of complex thought and deep feelings. In fact, the emotional attachment elephants form toward family members may rival our own.

These characteristics make elephants such a special creature, unfortunately rampant destruction of elephant habitat and rapid expansion of human settlement on elephant corridors has made conflict between this animal and us become inevitable. When such conflicts take place its not uncommon for the elephant to take the blame, while in fact it was us who have stepped into their territory.
Until recently, the subtle combination of moderate Islam and mystical traditions in Aceh has resulted in the province’s forests being only lightly impacted by humans and no know extinctions of species have occurred in the last century. During the same period of time the rest of Sumatra has lost some 80 percent of its forest.

Until as recently as the 80’s most Acehnese would not consider felling a large tree without first conducting a mystical ceremony. The opening up of Aceh’s forest to professional and outside concessionaires broke traditional taboos and demoralized many people who lived near the forest. They even joined the logging themselves and during the boom many local people left their farms and rice fields untended, and looked down on those to stuck to traditional ways.

This threatened the traditional fabric of many local societies, by the time illegal logging was brought into some semblance of control many of the arts, crafts, traditional building skills and customary norms were already in steep decline.
Revitalizing local traditions and pride.

In response to local requests to help regenerate traditions and customs BPKEL with funding from the Global Heritage Fund and support from the Aceh Foundation agreed to support the establishment of two cultural centers (Balai Adat) to act as focal points for the application and learning of traditional crafts and culture. After a selection process, in which communities were assessed as to how much they could contribute to the construction, the sites selected were Alur Dua Mas in South Aceh, and Ketambe in Southeast Aceh. In both these areas the local communities committed to provide 50% of the construction costs.

Construction of Balai Adat

Designs for the cultural centers reflect traditional building styles and at the beginning of the construction traditional ceremonies were performed. Construction lasted approximately one year and the official openings of the centers were also done along traditional lines with the additional attraction of traditional dance and martial arts performances done to entertain guests.

Use of the Balai Adat

Even before construction had finished the cultural centers were being used to host local cultural events, village meetings to deal with problems, and as a place to allow local youths to sleep - a clever way to guard the facilities. In fact on at least two occasions local government planning sessions were held in the cultural centers as their traditional design and natural air ventilation provided a cooler venue than standard government buildings. Since the official openings the use of the centers has increased and it is hoped that these places will also facilitate the learning of traditional crafts and creating a deeper concern for the surrounding forests.

The future

Already neighboring villages have raised government funding to build their own Balai Adat. Proof that the concept is taking off.
Ecoranger training and selection

Aceh's forests comprise an area of more than 3 million hectares, with about 2.3 million hectares located within Leuser Ecosystem. Guarding, protecting and conserving these forests from the threats of deforestation requires competent and sufficient human resources.

The European Union (EU) has recognized the importance of this, under an agreement between Fauna and Flora International and the European Union. One hundred and seventy five thousand Euros has been made available for selecting and training of approximately sixty new rangers for the Leuser Ecosystem. The training program will last a full year but already the rangers are adding significantly to BPKEL's capacity to undertake its responsibilities in the field.

The selection process for the candidate rangers began in May 2011 and was designed to favour people living near the borders of the Leuser Ecosystem. Further selection was done of the basis of health, physical endurance and mental toughness - a process that was completed on 28 May 2011. Of the 87 people who applied, sixty qualified for the first stage of basic training.

On the 9 June the basic training was formally begun with a short ceremony at the training facility. The Aceh Government was represented by the Head of Bappedalda, Husaini Syamaun and various RinDam officials were present. The European Union was represented by John Penny. RINDAM is an institution that specializes in giving basic training to government civil servants, military, search and rescue organisations and private sector personnel. Their willingness to provide one month's basic training is most appreciated and will form a solid basis on which to build the additional skills these men will need for their work in Leuser.