

Traditional Knowledge in Ecosystem Management Sabah Parks' Experience

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What is a Protected Area (PA)?

An area of land and / or sea especially dedicated to the protection and maintenance biological diversity, and natural and associated cultural resources, and managed through legal or other effective means."

At Sabah Parks, the adopted statement of purpose is:

"...The basic purpose of the National Park Systems is to preserve for all time areas which contain significant geographical, geological, biological or historical features as a national heritage for the benefit, education and enjoyment of mankind..."

Among the objectives of Protected Areas are:

- Scientific Research
- Wilderness protection
- Preservation of species and ecosystem
- Maintenance of ecosystem services
- Protection of specific nature and cultural features
- Recreation and Tourism
- Education
- Sustainable use of resources from natural ecosystem
- Maintain culture and traditional feature

Sabah Parks Areas, gazetted during its first 20 years (1964-1984)

- (1) Taman Kinabalu, 1964 (75,370 ha)
- (2) Taman Tunku Abdul Rahman, 1974 (4,929 ha)
- (3) Taman Pulau-Pulau Penyu, 1977 (1,740 ha)
- (4) Taman Pulau Tiga, 1978 (15,864 ha)
- (5) Taman Bukit Tawau, 1979 (27,972 ha)

These Parks were gazetted at a time when the human population in Sabah were scarce, land were plentiful and forested areas were vast and largely contiguous. As a result, the first five parks have no communities living inside, and little or no conflict/overlap of area between the parks and the communities.

Sabah Parks' Areas (post 1984)

- (6) Taman Banjaran Crocker, 1984 (139,919 ha)
- (7) Taman Marin Tun Sakaran, 2004 (~35,000 ha)
- (8) proposed 8th park:
 - Tun Mustapha Marine Park
 - Northern Borneo, off Kudat
 - >50 islands, up to 20,000 people living inside (local or otherwise)

Among the shared characteristics of these parks are the presence of local Communities living inside or around the parks and area overlap and disputes are plenty.

Tun Sakaran Marine Park (Semporna)

- Gazetted in July 2004 with an area of 32,452 ha (1,185 ha land area, 8 islands)
- There are communities living inside the Park, including the 'palauh' or 'bajau laut' (sea gypsy).
- Exceptionally high marine biodiversity, but heavy and unsustainable use of the marine resources
- In the coral triangle – with the world's highest coral diversity; just west of the Wallace line, with 528 spp of fishes, 255 spp of coral, 100 spp jellyfish, 30 spp crustacean and many others.

The Semporna Islands Development Project (SIDP) at TMTS

- A collaboration between Sabah Parks and the *Marine Conservation Society*, UK and funded by *the Darwin Initiative*. The title of the project is "Penglibatan Masyarakat untuk Penggunaan Mampan dan Pemuliharaan Terumbu Karang." The major objective is to enable all stakeholders to be involved with the TMTS.
- Under this projects, various workshops and consultations have been held, resulting in the drafting of:
 - skim pengzonan (zoning scheme)
 - permit dan peraturan (rules and regulations)
 - kegiatan perikanan (fisheries activities),
 - Kawalan (control),
 - pemantauan dan penguatkuasaan (monitoring and surveillance), and
 - *alternative livelihoods* and development plan.

The Proposed Tun Mustapha Marine park (TMMP) at the northern portion of the:

- area ~ 1.03 million ha with more than 50 islands (Major islands are Pulau Balambangan, P. Banggi and P. Malawali). The area extends From Marudu Bay to the Philippines Border in the Balabac Strait
- The area is the meeting point between the South China Sea and the Sulu sea and covers covers many types of ecosystem, such as Coastal to deep sea environment, Mangrove and islands environment.
- The area is a major part of the *Sulu-Sulawesi Marine Ecoregion (SSME)*. The *SSME* is at the epicentre of the world's highest coral diversity.
- There are more than 20,000 people living within the proposed area with ethnics ranging from Dusun Bonggi, Ubian, Bajau, Suluk, Cagayan, Binaden to probably other undocumented people.
- The major is fishing, supplemented by other activities like Agriculture (coconut, banana, tapioca, fruit trees). Most of the communities have income less than RM300.00 per month.
- Communities will be a major challenge for ecosystem conservation at this proposed park.

Indigenous Knowledge and Nature Conservation at Sabah Parks

The Crocker Range Park as an example:

Crocker Range Park

The park is the backbone of Sabah and provides water for the West Coast and interior areas of the state. The park encompasses vast expanse of pristine habitats, next to the state capital Kota Kinabalu.

The park was gazetted principally as a Water catchment area. The park has areas in 8 districts, i.e. in Beaufort, Papar, Penampang, Tuaran, Ranau, Tambunan, Keningau, Tenom.

Four main rivers flows from the park to the West Coast, i.e. the rivers Papar, Kimanis, Bongawan, Membakut. Eight Main Rivers flowing to the the interior originate from the park, i.e. the rivers Padas, Melalap, Pegalan, Pampang, Liawan, Apin-Apin, Tendulu and Tikolod.

A management plan was formulated for the CRP with the involvement and input from all major stakeholders, including members of the local communities living in and around the park. The formulation process of the management plan was intended to be participative and adaptive. The main goals of the CRP management Plan are:

- To make management and conservation plan based on scientific data
- To reduce disputes with local communities; involve multi-stakeholders
- To promote sustainable tourism and environmental education
- To strengthen management institution
- To encourage research and monitoring

There are indigenous communities living in and around the park boundary. First and foremost in the formulation of the CRP management plan, data regarding the communities were gathered to fully comprehend the problem and possible solution.

In the Study of the relationship with the Surrounding Communities, three activities were conducted, viz., identification of communities that have notable impact on the park management, Socio-economic surveys and analysis, and workshops, dialogues and discussions with the communities to identify the people's needs.

The Buayan-Kionop community

One example of an extensive field surveys on the indigenous communities in and around the CRP is the collaborative research and field works between Sabah Parks (SP), Global Diversity Foundation (GDF) of the United Kingdom and the Institute of Tropical Biology and Conservation of University Malaysia Sabah (ITBC, UMS), funded by the Darwin Initiative of UK. The research and field works were targeted at the the Buayan-Kionop community in Crocker Range, Sabah. Much of the field works were conducted by Members of the GDF team, for example Mr. Yassin Miki, Mr. James Wong, Ms. Rachel Chua, Dr. Agnes Lee Agama, Dr. Gary Martin and postgraduate students such as Perpetua Gladys George and Adam Murphy.

Among the findings thus far are as follows:

The Buayan-Kionop area has long been inhabited by the Dusun communities. There are four sub-villages, i.e., Buayan, Tiku and Timpayasa (just outside the park boundary) and Kionop (deep inside the CRP). The total population is only about 300 people.

Historically, they practice traditional farming, subsistence hunting, subsistence fresh water fishing and collection of forest products.

The practice of traditional farming or swidden agriculture involves first, the clearing the forest by cutting and burning, secondly, cultivating the fields, and finally leaving the fields to fallow for a number of years.

It was also ascertained that the Buayan-Kionop community interact with the forests around them and they have an intimate knowledge of the surrounding forest.

Based on the study, the Buayan-Kionop community categorize the forests into six types and each forest type has its own defining attributes, cultural and use values. The six forest types are:

1. **Puru** (*primary forest*) - Never been destroyed, dominated by big trees.
2. **Kapanggor** (*very old secondary forest*) - Have been used for farming long before.
3. **Tomulok** (*secondary forest*) – Subdivided into two categories (tomulok muda & tomulok tua) depending on the stage of forest regeneration. Normally dominated by pioneer trees such as *Morogis*, *Topou*, *Gosing*, *Lamou-Lamou*, *Pakudita* & herbs and shrubs.

- Has the most diverse uses and is one of the most important types of forest for daily survival
- Very important for firewood, handicraft materials, hunting, foods & medicines
- Important as potential future farming sites

4. Kinokotuan - Farm that has just finished harvesting

5. Gopu - Previous farm which continued to be planted with tapioca or other type of crops.

- Important for secondary crops (tapioca, sweet potato, vegetables, fruits & medicinal plants),
- Source of some medicinal plants.
- Animals are also caught in agricultural areas, particularly through the use of traps.

6. Tumo - Current rice farm,

- important for agriculture (rice & vegetables).

In addition, the communities at Buayan-Kionop value primary or old secondary forest (**Kapanggor & Puru**) as these areas are:

- Very important and have diverse uses mainly for timber, food, medicines, handicraft materials and hunting
- Most of the wild animals - bearded pig (*Sus barbatus*), barking deer (*Muntiacus spp.*), sambar deer (*Cervus unicolor*), palm civets (*Arctogalidia trivirgata*) are caught in *puru* and *kapanggor*
- These wild animals hunted to make up a important proportion of the meat for the Buayan-Kionop community
- Most suitable area for future swidden agriculture

Hunting

It was also found that the local community at Buayan-Kionop knows:

- the population dynamics of key hunted species
- Migration pattern, feeding ecology (fruiting season (mostly tikalod)
- Salt licks, 'watering hole' (lolobuhon)
- Animal crossings (trails, stream, rivers)
- These Knowledge creates potentials for hunting quotas, self monitoring, etc.

In summary, these different forest types make up the Buayan-Kionop Resource Catchment Area . Understanding of the Buayan-Kionop Resource Catchment Area is important because:

- It sustains resource pools of useful species: food, materials and medicine
- The establishment of CUZ's must account for the different ways people use and rely on these different forest types
- Changes in the access to, and use of, the Resource Catchment Area will impact on the livelihoods, identity and survival of the Buayan-Kionop community
- Understanding the patterns of access and use of the Resource Catchment Area will enable mutual cooperation and long-term collaborative management of this area

That is why, traditional knowledge is important in the conservation of the ecosystem.

The way forward

In a nutshell, that is the essence of our future approach in protected area management and nature conservation. In order for nature conservation to be beneficial to a wider range of stakeholders and have a lasting support from the grassroots, those efforts should consider the following:

- Benefit beyond boundaries,
- Involve local communities,
- Adaptive and participative.

Those are the philosophy advocated at the Crocker Range Park.