Biocultural diversity research is seen as a ‘new’ research area covering a range of disciplines, with issues addressed at global, national and local scales. Studies in Sabah have so far been primarily concerned with describing traditional knowledge (TK) at local sites, the relationship between TK and the conservation of bio-cultural diversity at these sites, customary beliefs and practices that contribute directly or indirectly to biodiversity conservation such as sustainable swidden agriculture, the observation of climate and weather changes and changes to flora and fauna, and, the dilemma of reconciling local community interests with conservation ideology and practices.

### Supporting Biocultural Diversity and Conservation in Sabah

Biocultural diversity research is seen as a ‘new’ research area covering a range of disciplines, with issues addressed at global, national and local scales. Studies in Sabah have so far been primarily concerned with describing traditional knowledge (TK) at local sites, the relationship between TK and the conservation of bio-cultural diversity at these sites, customary beliefs and practices that contribute directly or indirectly to biodiversity conservation such as sustainable swidden agriculture, the observation of climate and weather changes and changes to flora and fauna, and, the dilemma of reconciling local community interests with conservation ideology and practices.

#### Traditional Knowledge on Soil Potential

Most studies on swidden sustainability focus on the length of fallow period. The theory is that there is a relationship between shortened fallow periods and yield decline in swidden cultivation – a logical theory as a decline in nutrient availability in the ecosystem can be expected with crop export, erosion, leaching, volatilization of nitrogen and sulphur resulting in poorer soil physical properties and weed infestation.

Swidden farming is labour intensive, thus it is only logical for farmers to try to cultivate available areas that they believe will produce the highest return per unit of labour. The ability to use local knowledge to achieve this enables them to stretch the full potential of the soil as far as production is concerned. In regions known for very good soil
condition (this is indicated by faster soil recovery – short fallow), farmers will increase the spacing between holes which encourages more shoots since there are more nutrients available. As a result, although number of holes is less per unit of space, the soil potential is utilized. In an area where the soil is known to be unable to support the production of more shoots, farmers will decrease the spacing. As a result, although the number of shoots is less, this will be compensated by more holes (and crop) per unit of space. Similarly, this strategy successfully utilizes the full potential of the soil concerned.

This findings demonstrates how the intimate knowledge about soil potential has enabled local communities to compensate for the inferior quality of soil to achieve the best yield.

**Collaborative Fish Resource Management**

For generations, the Berawan regarded themselves as custodians of the natural resources within Loagan Bunut where they live. These indigenous peoples used resources sustainably, harvesting what they needed and living in ways that had minimal impact on the environment. However, in recent years, population growth coupled with personal affluence has resulted in the over-exploitation of resources, especially fish in the Loagan Bunut lake.

Co-management of natural resources by the local community and related government agencies as stated in the Wildlife Ordinance 1998 is a good approach in managing natural resources as it offers a win-win situation. The Peat Swamp Forest Project at Loagan Bunut National Park funded by United Nations Development Programme / Global Environment Facility (UNDP/GEF) facilitated active participation amongst various stakeholders in managing the natural resources found in the Park, which included the depleting (in number and quality) fish resources in Loagan Bunut. The project facilitated discussions to resolve problems through revision of the Fishery Regulations of 1969 to form up new regulations which also mandated the committee to enforce these regulations.
Although early experiences with stakeholders, particularly the local communities, were not encouraging, this has changed as more understanding of the benefits of the project was realized.

Ethnobotany Research

Several scenarios in Sabah suggest that traditional knowledge is being lost at an alarming rate. To put a halt to this, it is necessary for socio-environmental practices to be sustained. An approach to reduce this loss is to involve indigenous peoples in the management of those resources, collaborating with other stakeholders including researchers. This allows the integration of knowledge.

Ethnobotany is very new and is still evolving. Studies on plants in Sabah including *Rafflesia* and *Roselle* have highlighted the fact that traditional knowledge is seen as an object rather than a holistic system that contributes towards conservation efforts. *Rafflesia* is only known for its tourism related potential even though local communities have other uses for this plant. Exotic plants such as *Roselle* have been accepted and used over other native species by local communities.

While institutionalizing conservation initiatives can be carried out, there is no guarantee of its success within a decade. The minimal work on traditional knowledge of certain plants conducted at the Institute for Tropical Biology and Conservation (ITBC) revealed that conservation approaches in Sabah is not based on any proven system but on *ad hoc* work on the objects in question.

It is clear that traditional knowledge can be of value to the present social structure. However, this is only if understanding is localized and internalized to allow local authorities to act on it.
There is a long history exists between biodiversity and the Orang Sungai in the Lower Kinabatangan area. The indigenous Orang Sungai traditionally engaged in the early trade of forest products such as edible bird nests, rattan, beeswax, camphorwood, hornbill ivory and rhinoceros horn. Although trade in these products has declined significantly, the remaining tropical rainforest continues to provide the Orang Sungai with valuable resources such as for food, medicine and building materials. The relationship between the Orang Sungai and biodiversity was historically considered a ‘symbiotic relationship’.
In 1997 however, Lower Kinabatangan area was designated a protected area, creating conflicts of interest due to the changed relationship between the Orang Sungai and the biodiversity of this area. The vision of conservation stakeholders involved in the early days of conservation action in the Lower Kinabatangan focused on rainforest and wildlife conservation.

Although the community members of Sukau (one of the main villages along the Kinabatangan River) understood the benefit of this vision, this vision did not assist in overcoming the major problems faced by the locals – poverty and underdevelopment. Furthermore, differing needs created conflict between land used for oil palm plantations and the conservation programme in the area.
Suggested Reading


**Supporting Biocultural Diversity Conservation through Research**

Current research in Sabah involves, amongst others, the disciplines, sub-disciplines or knowledge areas of anthropology, sociology, human, physical and bio-geography, and political ecology which encompasses all of the above including legal studies.

Transdisciplinarity, which refers to a research strategy that crosses many disciplinary boundaries to create a holistic approach, is essential to evaluate economic and legal issues concerning intellectual property and the rights of biodiversity producers in relation to those of users, the patenting of ‘resources’ and its implications for governments and indigenous communities. These are central in the subject of Access and Benefit Sharing (ABS).

Academic transdisciplinarity in research and teaching is a growing priority today. Universities are forming research institutions that are transdisciplinary in orientation in order to go beyond the conventional boundaries established by individual disciplines and schools. This will enable such institutions to be at the forefront of policy work on biocultural diversity.

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**~ Component One ~**

The Learning Platform for Biocultural Diversity and Conservation is the first component of this collaborative project. Over 18 months, the Learning Platform has delivered a series of workshops and seminars aimed at broadening our understanding of the issues and recent developments concerning traditional ecological knowledge. This exchange of information and sharing of expertise allowed for the strengthening of capacity of conservation agencies, local communities and civil society organizations to address Access and Benefit Sharing issues in Sabah.

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**~ Component Two ~**

The second component focused on the Identification of Potential Indigenous Peoples’ and Community Conserved Areas (ICCAs) in Sabah. We conducted a state-wide review to explore, assess the status, and identify measures to recognize and support community conservation in Sabah. Recently included in the IUCN Guidelines on Categories of Protected Areas, ICCAs uphold indigenous peoples’ rights to their lands and resources as enshrined in the UN Declaration on the Rights of Indigenous Peoples, to which Malaysia is a signatory.