

**Concept Note**  
***Indigenous Knowledge and Changing Environments:***  
***Biological and cultural diversities in transition***

**International Experts Meeting**  
19 to 23 August 2007, Cairns Australia

An international experts meeting on “Indigenous Knowledge and Changing Environments” is being organized by UNESCO’s programme on Local and Indigenous Knowledge Systems (LINKS) in association with the Australian National Commission for UNESCO, from 19 to 23 August 2007 in Cairns, Australia. This event is supported by the Christensen Fund and jointly hosted by the Australian Tropical Forest Institute (ATFI) and the Department of Anthropology, Archaeology and Sociology of James Cook University. Against the backdrop of mounting international concern about the impacts of global climate change, specialists from both the natural and social sciences, and indigenous peoples, will come together to deliberate on past, current and future responses of local and indigenous communities to changing environments, as mediated by their indigenous knowledge.

**Context**

Recent manifestations of the dynamism of the global environment, accompanied in some instances by considerable human suffering and loss of life (e.g. the Indian Ocean tsunami; violent tropical storms including Hurricane Katrina in the Gulf of Mexico; El Nino events; extreme incidents of flooding and drought), have alerted the global community to the urgent need (i) to better understand these ‘natural’ phenomena,(ii) to enhance their monitoring and the prediction of impacts, (iii) to improve preparedness and response capacity at national and local levels, and (iv) to take action to constrain human activities that may exacerbate negative effects. In strategies for international intervention, local and/or indigenous communities have generally found themselves relegated to the category of victims of environmental change or natural disasters, objects of development aid and targets for capacity building. While their need for development assistance is very real, such a shallow characterization hides a more complex reality. Contrary to Occidental stereotypes of traditional cultures as timeless, a-historical and static, local and indigenous societies have continuously confronted and engaged with changing environments: as active agents of environmental transformation; as champions of coping, resilience and adaptation; or as observers of change processes and predictors of impacts. Faced with environmental variability in all of its diverse forms, including those related to climate change, it is important to better understand the diverse repertoire of responses that local and indigenous communities around the world have put into practice in the past and that they can bring to bear on environmental challenges in the future.

**Potential themes to structure presentations and discussions**

▪ *Local and indigenous communities as agents of environmental transformation*

Two diametrically opposed notions about human-nature relationships among hunter-gatherer, pastoral and horticultural peoples continue to hold sway. Either they have little or no influence over their natural environment and are shaped by ecological forces, or they have too

much influence and are accused of destroying their milieu by over-exploiting its resources. Between these extremes is a 'no man's land'. And yet, there is an extensive and still growing ethnoecological literature that documents the extent to which indigenous societies have transformed entire ecological systems in a manner which enhances and sustains biodiversity.

Analyses from the perspective of historical ecology demonstrate how tropical forest ecosystems of the Amazon (the 'virgin wilderness' *par excellence*) have been shaped by indigenous societies. Similarly, the creation of the Australian landscape as a biologically diverse mosaic of habitats is very much a human undertaking that has been orchestrated by Aboriginal peoples' judicious application of fire. But how did indigenous groups in the Amazon cope with historical shifts in the natural environment? In aboriginal Australia, did burning practices vary from year to year, or from period to period, in response to shifting environmental and climatic conditions? What knowledge of ecological dynamics allowed Aboriginal groups to differentially apply fire to achieve socially defined goals?

▪ *New Environments: expanding or undermining local knowledge systems*

Encounters with new or changed environments may constitute a significant challenge to existing knowledge, practice and representations. In some cases, these novel experiences may engender new knowledge which adds to and expands existing understandings and ways of doing. New technologies, for example, may allow people to frequent places or habitats that are normally beyond their reach. The adoption of mask and snorkel by Pacific Island fishermen has opened a sub-aquatic world for their exploration and discovery. How has this transformed fishing practice, altered knowledge of fish behaviour and marine ecology, and influenced people's perceptions of their place in the natural world?

But environmental change may also have more dire effects on knowledge. The construction of hydro dams in James Bay, Canada, created ice conditions that were at odds with anything the Cree First Nations had ever before experienced on their territories, and triggered the accumulation of methyl mercury to toxic levels in fish that by traditional standards were big, fat, healthy and therefore prized. By calling into question the soundness of indigenous understandings, might change in the natural milieu erode the confidence of its holders, and undermine the knowledge system as a whole?

▪ *Response and resilience in the face of environmental disasters and their consequences*

The December 2004 tsunami in the Indian Ocean was an environmental disaster of exceptional amplitude. It took the lives of 100s of thousands of people throughout South and South East Asia and highlighted the lack of preparedness of national authorities. In contrast, various indigenous groups (Moken in Surin Islands, Thailand; Ong and Jarawa in Andaman Islands, India; Simeulue Island peoples, Indonesia, amongst others) escaped unscathed because community members could read the signs of an impending tsunami and knew how to respond in a rapid and coordinated manner. Furthermore, fishermen in south India warned local authorities (to no avail) a few days prior to the earthquake and tsunami. They knew a dire event was imminent because they had captured in their nets a deepwater fish species that only streams upwards in the water column on the advent of severe storms or other devastating phenomena.

What signs in the environment serve to forewarn people of unusual and dramatic environmental change, whether they are related to tsunami, tropical storms or drought? How does knowledge and response remain intact, in the absence of any direct experience of these

phenomena when their occurrence is rare? Prior to 2004, none of the Moken of Surin Islands had ever seen a tsunami as the most recent event dated back some 70 years and occurred at a distant location: the islands of south Myanmar. Yet every villager knew to respond immediately by running to high ground. In the absence of any direct personal experience, how is such knowledge encapsulated in meaningful form, shared amongst an entire population and transmitted between generations? What coping strategies have local communities devised to accommodate environments disrupted by tropical storms, landslides, tsunami, drought, insect or rodent invasions, or other natural catastrophes (e.g. crops and gardens destroyed, water sources contaminated with saltwater, livestock killed or dispersed, boats or other means to access food destroyed, etc)?

▪ *Indigenous Knowledge as a basis for monitoring and predicting environmental change*  
Indigenous or ‘traditional’ knowledge is often misconceived as a fixed body of understandings that is passed from one generation to the next with little change in content and structure. Such knowledge would have little to offer in the face of change, as it would quickly be out of step with the shifting realities of the natural world. Recent work on indigenous knowledge refutes this notion. It underlines the dynamic nature of knowledge that is re-appropriated by each generation of knowledge holders, and re-interpreted through their own experiences, practices and interactions. This dynamic view of indigenous knowledge highlights opportunities to address the present, while at the same time setting it into perspective with the past. Anchored in indigenous knowledge, practice and worldviews, this local monitoring of environmental change may help set baselines, differentiate trends from one-off events, and predict environmental and social impacts resulting from natural and anthropogenic change, including those already observed and anticipated from global climate change.

What role might local knowledge holders play in monitoring and assessing environmental change in general, and the impacts of climate change in particular? What synergies and conflicts might be anticipated between indigenous and scientific contributions and interpretations in these domains?