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ISSRM 2005

The 11th International Symposium on Society and Resource Management
June 16-19 2005 Östersund, Sweden

BOOK OF ABSTRACTS

from **KNOWLEDGE**
to **MANAGEMENT**
BALANCING RESOURCE EXTRACTION,
PROTECTION & EXPERIENCES



INDIGENOUS KNOWLEDGE IN RESOURCE MANAGEMENT

From Empires to Tribes: Sustainability of Mayan Agricultural and Natural Resource Management

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Since the Rio Earth Summit in 1992 many collaborative efforts have constructed indicators to monitor progress towards sustainable development. Sustainability indicators are thought useful for developing better information collection and reporting systems, especially for natural resource indicators. Concerning sustainable agriculture and natural resource management, recognition is growing about the importance indigenous knowledge plays as a foundation. Hence we see increasing efforts by archaeologists, ecologists, and others to investigate the long lasting effects of human habitation and what can be done to make it more sustainable in the future. The goal of this research project is to identify past patterns of sustainable land management, land quality, and sustainable agricultural systems to answer key questions: what can past practices tell us about what is sustainable; where do we look? One example of an area with a long-term history of resource use is the Mayan region of Central America, an area of global ecological, agricultural, and forest significance. Much recent research has established that the ancient Maya were skilled managers of their land resources and that their agricultural and land management practices were obviously successful in feeding millions of people over hundreds of years. The Maya developed a spectacular civilization based on agriculture and trade that attained a zenith of organization, population, and construction around AD 700 to 900. Yet, despite what appears to be excellent knowledge of agrarian practices, these people employed strategies that eventually undermined the long-term balance between depletion and recovery and led to rapid decline. So we might question whether indicators within the once-prevailing ecosystem or within prevailing human activities over time can be discerned. The project will suggest that in order to look ahead for

sustainability indicators, we must first look back at historically altered ecosystems and environmental changes to gain a better understanding of system dynamics.

Environmental Knowledge and Attitudes among Indigenous Schoolchildren: A Case Study from Asia

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After the International Year of the World's Indigenous People in 1993, the Taiwanese government started to pay close attention to the welfares of indigenous people and continued to focus on the indigenous issues and concerns since then. Although numerous studies have been done to explain the relationships between environmental knowledge and environmental attitudes, no definitive answers have been found. To instill pro-environmental behavior in indigenous communities, it is essential to learn about their knowledge and attitudes toward the environment. The authors developed a 34-item survey instrument to measure environmental knowledge and environmental attitudes among the indigenous elementary school students in central Taiwan. It was completed by 388 third, fourth and fifth grade students from nine schools in Nantou and Taichung counties. The results showed low knowledge scores, but high score levels for attitudes. The study revealed that there were statistically significant differences among indigenous students' county location and grade level in environmental knowledge; in addition, the differences among indigenous students' gender and grade level in the environmental attitudes were also statistically significant. By canonical correlation analysis, this research found indigenous students' environmental knowledge and environmental attitudes were positively correlated. The lower grade level of indigenous students' knowledge in the constructs of "Natural Resources" and "Environmental Protection and Prevention", the less positive attitudes toward the constructs of "Natural Resources", "Social-Economic Impacts" and "Environmental Protection and Prevention" they had. Overall, a significant positive correlation between knowledge and attitudes was demonstrated. The findings of this article are

valuable and useful to Taiwanese indigenous communities and/or schoolchildren in designing as well as implementing environmental education programs from the aborigine's standpoints to promote environmental conservation and to foster responsible environmental behavior in the near future.

Tourists, Nature and Indigenous Peoples - Visitors' Opinions as One of the Guidelines for Management and Tourism Development

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For the last 100 years tourism has been part of the Swedish rural economy. This is also the case in the peripheral and sparse populated areas in the Swedish mountain region. When mining, logging, and farming industries are declining and the number of inhabitants are decreasing, tourism has taken on a new meaning for rural mountain areas. It is above all nature that is attracting visitors. Recently, indigenous tourism has become a growing segment within the world tourism industry. Also the Sami of Northern Sweden has begun to engage in tourism, partly due to the restructuring of the reindeer herding forcing Sami into other occupations. While tourism may be attractive for some as a means of economic development, others are concerned about the environmental impacts of tourism in fragile ecosystems. It is obvious that tourism in a rural context displays many of the features of the symbiotic relationship that exists between tourism and the environment. Several development questions about land use and immemorial prescriptions have been raised in Sweden. However, quite little focus has been paid on the visitors' point of view. A central question for planning and management the use of large nature areas is the demand and supply of different services and qualities. Data on tourism and outdoor recreation is needed in many phases of a planning process: impact assessment, spatial planning and for utilization and management of the area and the implementation of the plan. The focus in this poster is especially on visitors' opinions on tourism that is based on the nature and the culture of the area. Tourism attractions, tourism development, management and land use are also discussed. The poster is based on two case studies carried out in the Northern Sweden; Tourism in Sápmi and Visitors in Södra Jämtlandsfjällen.

Influence of Development Stages and Local Involvement on Tourism Impact in Aboriginal Communities

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Presenter: Ming-Che Wu

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With abundant and quality natural and cultural resources, many aboriginal communities turn to tourism as a tribe development approach. "Chou" is one of the important indigenous tribes in Taiwan. Currently most of them reside in 10 communities in A-Lisan mountain areas where are within Yu-san National park and A-Lisan national scenic area. Therefore, more or less, sooner or latter, those Chou communities involved in tourism development. However, tourism is not always the panacea for tribe future; many cases demonstrate that negative tourism impacts can/do occurred. Concerning the importance of resident participations and possible variations in different development stages, this research examines the influences of "tourism development stage" and "local involvement" on tourism impact perceptions of indigenous people. Study results reveal that resident involvement in tourism development influences their impact perceptions. More importantly, the influences are varied on different impact dimensions, such as "physical environment", "economic", and "social-culture" impacts. The tourism impact perceptions are not significantly influenced by tourism development stages, but the interactive effect of local involvement and development stage is closed to be statistically significant. At the end, this research comes to the conclusions that the overall tourism impact perceptions are formed based on resident's recognitions of potential values and remedies for negative impacts through various tourism development stages. This study also raises cautions that we should not simply rely on tribe self-governing to deal with negative impacts of tourism development. The variations of individual impact dimension and its relation with local involvement should take into account.