Methods and Tools for participatory processes

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My research involves collaborative projects with First Nations in British Columbia, Canada, to integrate the First Nations' Traditional Knowledge with science-based knowledge in land management processes. In these projects, biodiversity issues generally do not occur in isolation, but are part of larger participatory processes.

Community Forestry is an activity that includes biodiversity concerns and has close links with Participatory Rural Appraisal (PRA). We have developed information management tools for Community Forestry, which are available at the following web site, and include a discussion of both Community Forestry and PRA:

http://www.pfc.cfs.nrcan.gc.ca/management/cfmtools/index_e.html

The tools are based on a set of local Criteria and Indicators developed by the Centre for International Forestry Research (CIFOR).

Interaction among indicators is a key issue. For example, two indicators from the CIFOR set are:

I.1.5.3 Existence of property rights for exploited non-timber forest products (NTFPs) (e.g. fuel wood)
I.2.1.4 The richness/diversity of selected groups show no significant change

However, different forms of NTFP property rights could have different effects on biodiversity (I.2.1.4). We are currently exploring this issue in British Columbia.

One participatory process, Adaptive Management, generally involves a series of workshops, bringing together scientists, various stakeholders and land managers. However, attendance is usually limited to ensure reasonable dynamics in the time available, and many individuals and groups are not presenting their information in this setting. Our research addresses these concerns by developing a virtual workshop environment.

Thomson, A.J. 2000. Knowledge elicitation tools for use in a virtual Adaptive Environmental Management workshop. Computers and Electronics in Agriculture 27: 57-70.[PDF file at http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6T5M-40GJ059-5-K&_cdi=5006&_orig=search&_coverDate=06%2F30%2F2000&_qd=1&_sk=999729998&view=c&wchp=dGLbVzz-zSkWb&_acct=C000026798&_version=1&_userid=533256&md5=4ce9f4dd7dc95e3a7305ddc8523221cf&ie=f.pdf]

This system permits spreading participation over time and space in a manner that permits extension staff to interact 1-on-1 with the holders of traditional knowledge, and elicit the knowledge in a structured manner that permits its subsequent incorporation into decision systems and processes. Of key importance here is the integration of software development with new roles and responsibilities of extension staff. The process leads to development of indicators for subsequent monitoring. Indicators have been discussed in several of the earlier submissions.

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An alternative approach to developing indicators is through a structured questionnaire. We have explored this in a study that can be viewed at

http://www.pfc.forestry.ca/programs/tek/index_e.html

The development of indicators through this process is discussed in:

Thomson, A.J. 2000. Elicitation and representation of Traditional Ecological Knowledge, for use in forest management. Computers and Electronics in Agriculture 27: 155-165. [PDF file at http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6T5M-40GJ059-C-F&_cdi=5006&_orig=search&_coverDate=06%2F30%2F2000&_qd=1&_sk=999729998&view=c&wchp=dGLbVzz-zSkWA&_acct=C000026798&_version=1&_userid=533256&md5=bc389a2a7b2c6fb36d40e530b5c44409&ie=f.pdf]

The tools described above are the outcome of years of developing concepts related to dealing with many issues that have been raised during the present workshop: process of negotiation and consensus, communication among cultures, different values (Iain Davidson-Hunt); non-scientist involvement, development of indicators (Anna Lawrence, in Theme 1); issues of power (Teeka Bhattarai), and so on. Power issues, for example, are considered in a study of inclusion of environmental ethics in decision processes (Thomson 1997). Background papers to development of the tools are listed below.

Iain Davidson-Hunt indicated the general interest in learning "scientific" approaches in data collection, and this is certainly supported by my own experience. One current project addresses the effects of forest practices on plants and fungi traditionally used. The project is conducted by the First Nation, and followed a capacity-building programme that addressed issues such as case studies vs. replicated sampling, plot installation and maintenance, data recording, sample collection and preservation for taxonomic purposes, and logistics. Logistics was one of the most important aspects of the project, as many trade-offs of costs, benefits, timing and availability of their own local experts were involved.

In summary:
- biodiversity monitoring is often part of a broader process
- tools can be designed around development of indicators
- indicator interaction can be the source of biodiversity-related issues
- capacity building can be the key to successful participation

Background papers

Akenhead, S.A., A.J. Thomson, D. Morgan, B. Adams and W.M. Strome. 1996. Planning sustainable forestry when there are complicated rules and many stakeholders. Proc. Eco-Informa '96, Lake Buena Vista, Florida, 4-7 November 1996. 399-404.

Thomson, A.J. 1993. Paradigm Green: AI approaches to evaluating the economic consequences of changing environmental viewpoints. AI Applications 7(4): 61-68.
[http://www.pfc.cfs.nrcan.gc.ca/programs/tek/docs/ParadigmGreen.html]

Thomson, A.J. 1996. Asimov's psychohistory: vision of the future or present reality? AI Applications 10(3): 1-8.
[http://www.pfc.cfs.nrcan.gc.ca/programs/tek/docs/Asimov.html]

Thomson, A.J. 1997. Artificial Intelligence and Environmental Ethics. AI Applications. 11(1): 69-73.

Thomson, A.J., D.G. Goodenough, R. Archibald, D. Morgan, B. Adams, D. Hawkins, and D. Say. 1996. Landscape management and biodiversity: automating the design of Forest Ecosystem Networks. AI Applications 10(3): 57-65.

Thomson, A.J., M. N. Jimmie, N.J. Turner, and D. Mitchell. 2000. Traditional knowledge, western science and environmental ethics in forest management. In: 'Forests in Sustainable Mountain Development: A State-of-Knowledge Report for 2000'. M. Price and N. Butt (eds.). CABI Publishing, Oxford. 181-186.

Thomson, A.J., and S.A. Akenhead. 2000. Designing sustainable mountain landscapes in British Columbia. In: 'Forests in Sustainable Mountain Development: A State-of-Knowledge Report for 2000'. M. Price and N. Butt (eds.). CABI Publishing, Oxford. 215-218.