

INDIGENOUS KNOWLEDGE SYSTEMS

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FOREWORD

When staff of the Information Sciences and Systems and Environment and Natural Resources Divisions first began discussions on organizing a seminar on Indigenous Knowledge (IK) Systems, the idea was to put together a small group of program staff with two or three resource people who would help us improve our own understanding of the main issues related to research in this area. We also hoped that they would spend some time helping us determine research priorities and possible new entry point for the Centre.

In pursuing the matter, we rapidly discovered that the topic was of interest to many people, and quickly came into contact with a number of people and organizations actively involved in some aspect or other of the field. We also learned that many of our own colleagues from other divisions wanted to learn more about IK.

Indigenous knowledge provides the basis for local-level decision-making regarding farming practices, health care and societal organization. This is particularly true in rural areas where the vast majority of the world's population still lives. Very little of this knowledge has been recorded, and yet it represents an immensely valuable data base on human kind, with insights on how communities have interacted with their changing environment.

IDRC is often described as a "knowledge organization", whose mandate is to contribute to social and economic development through research and information. IDRC encourages an approach to problem solving that is innovative, interdisciplinary, but above all grounded in the views and aspirations of developing nations. Thus, projects we support are conceived, managed and carried out not by IDRC, but by developing-country organizations, sometimes in partnership with a Canadian institution, and very often with other Third World partners.

Our interest in indigenous knowledge *per se* is not new; over the years, several research and information projects have dealt with one aspect or another of the contribution of IK to social and economic development. The United Nations Conference on Environment and Development (UNCED, 1992) challenges us to address the entire field more systematically, and to focus in particular on knowledge pertaining to the environment, referred to as Traditional Ecological (or Environmental) Knowledge (TEK).

In the first place, there is the realization that the knowledge built up over centuries and millennia, by people living in many different climates and ecosystems, constitutes a precious resource for the survival of our planet. As explained in a recent book entitled Our Responsibility to the Seventh Generation published in 1992 by the International Institute for Sustainable Development, the wider society can benefit from indigenous peoples by learning from them how to adapt to and utilize fragile, marginal environments. Unlimited growth without attention to the environment is simply not sustainable over time. For this reason, viable alternatives

must be sought and followed. These ideas were also expressed in Agenda 21, which is the plan of action produced by UNCED, and before that in the Bruntland Report, Our Common Future (1987).

The accompanying report describes our efforts, through the workshop, to better understand IK as an area of growing concern in development, and as a specific field of research in its own right.

Gisèle Morin-Labatut, Program Officer, Information Sciences and Systems Division

INTRODUCTION

This internationally attended workshop was funded and organized by IDRC's Information Sciences and Systems Division (ISSD) in collaboration with the Environment and Natural Resources Division (ENR). Invited resource persons included academics, consultants, and aboriginal NGO representatives involved in IK related activities. (See Annex A for the list of participants and agenda of the workshop).

IDRC's current corporate interest in IK represents an outgrowth or evolution of its historical concern with issues such as information needs of local communities for social and economic development, the role of community-based resource management in the development process, and Canadian commitments that were made at UNCED in the summer of 1992. IDRC has taken a lead role in the Canadian follow-up to activities associated with UNCED's Agenda 21 (particularly the Biodiversity Convention) which has much relevance to the issue of IK and sustainable development.

The main objectives of this workshop were to provide interested IDRC staff with a practical understanding of the nature and dynamics of IK systems in both Canada and in developing countries. The resource persons provided opportunities for brainstorming of current IK issues of interest to IDRC such as IK research; recording and ownership of IK information; and the role of indigenous communication systems and their relationship to sustainable development.

In order to address some of the above wider issues of IK research, it was anticipated that some of the following questions would have been addressed during the course of the 3-day workshop:

- ***what is indigenous knowledge? (concrete and abstract notion)***
- ***why do we want to know what IK is? (e.g., for cultural preservation? for the sake of adding to our knowledge? to contribute to development efforts?)***
- ***who are the main actors or "stakeholders" involved in IK related research (users/beneficiaries)***
- ***how can this information be used for the benefit of the local communities or be duplicated for similar global ecozones?***
- ***who and when will these questions be answered and evaluated?***

The following report is a summary, presented in three substantive parts, of the issues that were discussed during the workshop. The first part deals with the theoretical foundations of IK research, including definitions of IK and a comparison of IK with western science; the role of IK in development; and the field of IK as an object of study. This section also discusses the general constraints for research on IK systems, and the issues involved in the protection of IK property rights. Several national, regional and international IK networks are also described.

The second part of this report deals with the concept of IK and its practical application in Canada's aboriginal communities. The experiences of a cultural youth program in inner-city Winnipeg; the role of IK in native philosophy; aboriginal gender issues; IK and land use patterns, and co-management regimes, were some of the concerns discussed at the workshop and presented in this section.

The workshop ended with a "brainstorming" session of ISSD staff and resource persons. The outcome of these discussions constitutes the third part of this report. This consultative process was intended to help determine what role IDRC could play in promoting research and experimentation in the use of information technologies by indigenous organizations to collect and manage TEK, and exchange it with other communities; capacity-building experiments for indigenous community groups and organizations in information management and dissemination; cooperation and exchange between Canadian and Third World indigenous groups; and research on topics such as the role of TEK in sustainable development planning and resource management.

I. INDIGENOUS KNOWLEDGE: THEORY AND PRACTICE

(a) Theory of IK and comparison to western science

Dr. Mike Warren (CIKARD) offered the following description of the different types of IK Systems:

- the natural and physical environment (e.g., TEK or "traditional ecological knowledge management")
- cognitive and ideational thought (e.g., innovation based on prediction)
- social organizations (e.g., traditional healers)

Dr. Jacques Chevalier from Carleton University emphasized that it is important not only to understand the nature and cultural dynamics of IK systems, but also to understand the importance and benefits of IK to the various stakeholders in the sustainable development process.

Some **definitions** of IK brought to the floor over the course of the workshop include:

- IK is knowledge that is unique to a local culture;
- IK forms an information base for a society which facilitates communication and equitable decision-making;
- IK is a dynamic information system which is influenced by internal creativity and experimentation, as well as contact with external systems;
- IK systems are determined by gender role, generation (age), class and occupational role.

In the west, processes associated with agricultural production or resource management tend to be mechanistic and objective, while in many developing countries, similar tasks may rely on rituals and spiritual beliefs (e.g., ancestor worship or animal totems) to sustainably manage common property systems. Dr. Fikret Berkes from the University of Manitoba, outlined some of the paradigm

differences between the indigenous "world view" and the scientific "reductionist view".

Comparison of western and indigenous knowledge systems

	WESTERN	INDIGENOUS KNOWLEDGE
NATURE OF DATA	Synchronic Quantitative	Diachronic Qualitative
NATURE OF APPROACH	Mechanistic Objective Reductionist Systematic Experimentation	Spiritual Subjective Holistic (ecological) Trial and error
PRIMARY CONCERN OR FOCUS	Accumulation of facts Verification of predictions General principles and theory building	Building of collective wisdom Symbolic meaning Principles which are personal and moral

(b) The importance of IK systems in development practice

Participants expressed the relative importance of IK in development process. To begin with, familiarity with IK and local decision-making processes helps development or "change" agents to understand and communicate with indigenous groups for the planning and implementation of effective sustainable development interventions. Moreover, by working with and through existing IK systems, development agents can facilitate a transfer of low-input technology through international research networks in order to improve and adapt local systems to changing environmental conditions.

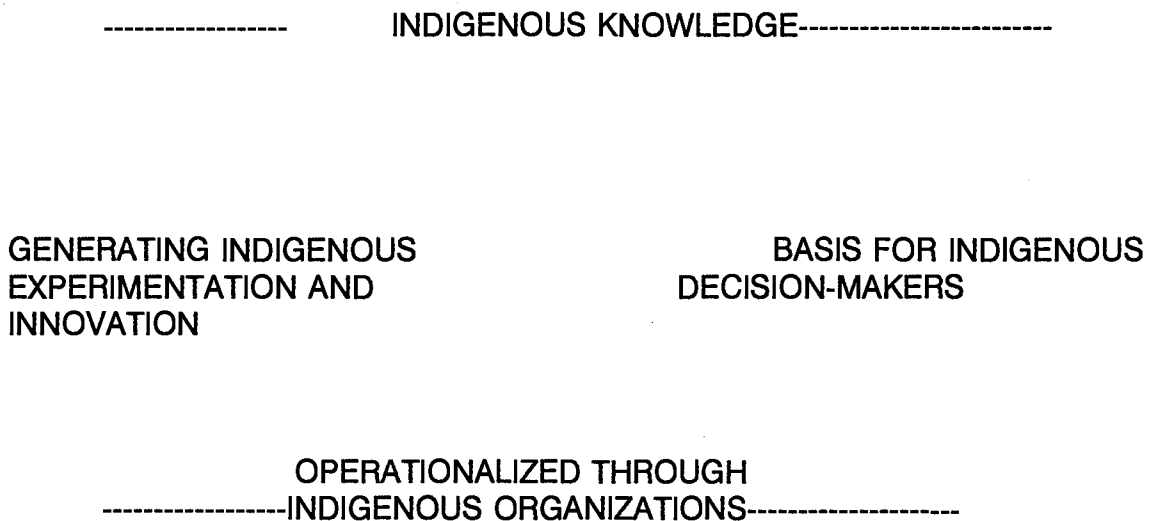
However, it is crucial to recognize that some traditional knowledge systems are at risk due to western-oriented educational systems; the death of elders who are

often repositories of IK; and the alarming loss of species biodiversity due to the effects of industrialization.

(c) IK as an object of study

An important question posed by Joachim Voss of IDRC is: to what extent do we damage or change IK by pulling it out of its cultural context as an object of study? Workshop participants agreed that it is vital to develop an agenda that does not violate communities and that preserves their unique knowledge. IK systems should be recorded and communicated without losing the cultural value structures as outlined below by Mike Warren.

Cycle facilitated by indigenous communication system



Participants provided the following list of users and beneficiaries of IK Systems:

- villagers/paraprofessionals/peoples organizations
- local community-based NGOs
- researchers/academics
- extension personnel, other development agents and educators
- policy makers/bureaucrats/donor agencies

(d) Some constraints for research on IK systems

A problem in most countries is that some donor elites (political leaders, bureaucrat decision-makers) believe that supporting IK means reverting back to a colonial times mentality which labels IK as obsolete, or romanticized for modern times. There are also legitimate constraints for donor agencies to adapt their science-oriented project approach to existing traditional systems.

Although there are increasing instances of better management of natural resources by traditional systems, most countries have not paid much attention to IK in terms of creating national inventories of local knowledge. This is a problem of acceptance by national leaders of the importance, use of, and access to IK. It also represents a mistrust by indigenous groups to share their livelihood secrets (intellectual property) to outside researchers or extension workers who do not speak the same language, or who are not well known and accepted by the indigenous community.

(e) Protection of IK property rights

While the concept of knowledge varies from culture to culture, the concept of intellectual property is an exclusive concept of western philosophy. The notion of patenting ownership of knowledge relating to the characteristics and uses of plants and wildlife, etc. is rooted in the western tradition of protecting physical and intellectual private property.

It is important to consider the economic and social benefits for the local population in the long term. Hypothetically, for example, if a plant containing a cure for cancer was "discovered" in a forest in Mexico, what group(s) would benefit: the local people? the Mexican government? a multinational corporation?

A popular example is the centuries-old practice of using the neem tree seed and leaves as a highly effective, water soluble biopesticide by traditional farmers in India. In 1988, chemists determined the chemical structure of the neem tree extract; subsequently India has managed to benefit considerably from the commercial exploitation of the active ingredients which are now used globally. Moreover, several companies in industrialized countries are working on commercial neem products.

Therefore, research into IK introduces certain ethical considerations regarding the use of knowledge obtained, and the benefit or harm that may come to indigenous groups by exploiting their knowledge. It is therefore necessary to find cost-effective ways of dealing with issues of property rights that will not disenfranchise or disempower the original source. It is necessary to consider, when entering into an economic relationship (such as the biotechnology duplication of a traditional

herbal medicine), if the same exploitative or partnership arrangement previously in place would continue.

(f) IK centres and information networks

Mike Warren and Guus von Liebenstein presented the following information on IK centres and information networks.

Sub-regional: East Africa (NMK); Trans Andean (Venezuela, Bolivia)

National/Regional

ARCIK	African Resource Centre for Indigenous Knowledge
REPPIKA	Regional Program for the Promotion of Indigenous Knowledge in Asia
GHARCIK	Ghana Resource Centre for Indigenous Knowledge
KENRIK	Kenya Resource Centre for Indigenous Knowledge
INRIK	Indonesian Resource Centre for Indigenous Knowledge
PHIRCSDIK	Philippine Resource Centre for Indigenous Knowledge and Sustainable Development

Centres are also being established in Benin, Namibia, Zimbabwe, Burkina Faso, Nigeria, South Africa, Costa Rica, Venezuela, Bolivia, Peru, and Colombia.

The main objectives of the national centres will be to:

- facilitate networking across sectors with GOs, NGOs, POs, donors, researchers, facilitators, and producers of IK;
- establish inter-sectoral advisory committees and coordinators;
- establish a PR mechanism (e.g., newsletters, publishing of popularized events for newspapers and media);
- conduct training workshops on IK for members of advisory committees and sectoral coordinators;
- organize national workshops on IK and sustainable development aimed at decision-makers (POs, GOs, NGOs, donors, etc);
- establish IK documentation centers;

- coordinate national level activities generated out of global centres;
- provide material for IK and Development Monitor;
- carry out an analysis of the national education policy in order to introduce IK curriculum materials into formal educational institutions;
- organize a fund raising task force; and
- develop a code of ethics

International

CIRAN: Centre for International Research and Advisory Networks, the Netherlands Organization for International Cooperation in Higher Education

CIKARD: Centre for Indigenous Knowledge and Agricultural and Rural Development Iowa State University of Science and Technology

LEAD: Leiden Ethnosystems and Development Program

ILEIA: Information Centre for Low-External Input Agriculture

In recent meetings in The Hague and Leiden (14-15 May 1992), it was agreed (through a Memorandum of Understanding) that CIRAN, CIKARD and LEAD would collaborate on a variety of networking activities based on the growing global network of IK resource centres. The initial set of activities to be based out of CIRAN include:

- publication of The IK and Development Monitor, a quarterly newsletter for the global network of IK resource centres such as CIRAN, CIKARD, LEAD, ARCIK, REPPIKA, INRIK, GHARCIK, CEICADAR and KENRIK. (For further information, please contact Marijke Veldhuis, Editor, CIRAN, P.O. Box 90734, 2509 LS, The Hague, The Netherlands);
- publication of a global directory of individuals and institutions involved in IK as it relates to development;
- establishment of an electronic mail capacity linking all the centres;
- establishment of a global data base reflecting IK and technologies appropriate for development;

- organization of an international conference to demonstrate to representatives of multilateral bilateral donor agencies the role that IK can play in the development process (by the end of 1993).

II. IK AND THE CANADIAN EXPERIENCE

(a) Inner-city Winnipeg program

Larry Morrisette is the Team Leader of the Youth Program at the Ma Mawi Wi Chi Itata Centre in Winnipeg. He is involved in teaching native youth (primarily Cree) living in and around Winnipeg about Indian culture and the legitimacy of the traditional way of life. Issues related to cultural preservation and "urban self government" are priorities of the Youth Program. This program is in its eighth year and the target age range is 14-24.

According to Mr. Morrisette, life on native reserves is typified by high levels of suicide, unemployment and alcoholism. "Development" played a major role in displacing the traditional way of life of the Canadian native community. An awareness of the viability of some of the traditional ways may help such communities in the healing process.

(b) IK Systems as a method of understanding the world

Madeleine Dion Stout is Director of the Centre for Aboriginal Education, Research and Culture, at Carleton University. She points out that in North America, indigenous peoples can be described as "communities of distinct people with a long standing relationship with the government" and whose knowledge is conditioned by their upbringing and formal schools. Aboriginal peoples of North America are currently pursuing a "very strong spiritual recovery movement" which goes beyond a social/political movement.

Indigenous people believe that healing is associated with the supernatural powers that come from many spiritual sources. *The medicine wheel*, depicted on the next page, is one of the most popular symbols of the spiritual movement in Canada and represents an abstract conceptualization of the world view philosophy.

(c) Aboriginal gender issues

Mary Carpenter, a student in the Faculty of Law at the University of Ottawa, believes that the "worst transgression for native people is to have culture used against them". This is particularly true in the case of aboriginal women who are often neglected in any participatory decision-making situations.

Among the Canadian northern people (the Inuit), a woman's child bearing function defines her entire life. Although their role as domestic caretakers is vital to the development and well being of their families, and to the preservation of their culture, aboriginal women are often oppressed, over-burdened with great responsibilities and taken for granted.

(d) Documenting traditional land use patterns

John Turner is the Coordinator of the Omushkegowuk Harvesters Association in Moose Factory, Ontario. As a result of his experience as a trapper, Mr. Turner gained extensive knowledge about the patterns and management of wildlife around his area (e.g., where beavers breed, where fish spawn etc.). Despite a lack of formal education, Mr. Turner has gained much experience regarding traditional ecological knowledge.

Mr. Turner was recently involved in conducting a "harvest survey" in conjunction with Dr. Fikret Berkes. The general objective of the study was to demonstrate, as part of land claims research, the value of the traditional economy and how it "fits" into the overall economy. Specifically, the study aimed to determine patterns of land use by indigenous people living around the Moose Bay area; to prove ownership, use and occupancy of the land; and to implement a management structure for these lands.

The survey, based on a questionnaire (developed with the academics and administered by a representative from each community), was sent out to harvesters in 7 communities in the Mushkegowuk Region. Each community has its own hunting area. Although conventional maps show blank areas with little or no activity, results of the survey indicate that wildlife harvesting is still a very important yet "invisible" occupation within indigenous communities, despite the socio-economic changes of the past 20 years.

Maps were drawn to exhibit fishing, goose, moose and caribou hunting areas; the intensity of hunting during different seasons; and the distribution of harvest activity. The survey showed that in some cases, hunters have adapted modern techniques for harvesting (e.g., hunters may use airplanes to access certain hunting grounds).

The land use maps have also been used to determine economic estimates of wildlife protein values (i.e., Dr. Berkes estimates \$8,400 per year per family). This is useful because it demonstrates the social importance of traditional harvesting activities which provides food to many communities that are cash poor.

Mr. Turner is also involved in the development of "map biographies", which depicts the story of an individual's land use activity (fishing, hunting, trapping and goose hunting) over a lifetime on a map. This is particularly useful in documenting the wisdom of elders, or those who have extensive and expert knowledge of particular areas. The map biographies of elders include much more detailed IK and archaeological information such as spawning or nesting sites, graveyards and spiritual sites.

This information will be combined with geographic information system (GIS) computer software to produce digitized maps. To date, Turner has completed 32 of these maps for the Moose Factory Community GIS technician. This method of recording change over time can also be used for purposes of environmental assessment and for land use planning.

These activities are generating much interest within the communities. Eventually, the maps will be merged and shared with the community members. This way, information can be shared, updated regularly and, therefore, kept dynamic.

There exists the danger that the information could "fall into the wrong hands" and be used for development purposes that are not desirable or beneficial for the communities. Therefore, this information should be interpreted by the communities for their own use (e.g., responding to developers' plans, or formulating their own development programs, etc.).

Generally, these maps can serve as an important tool for negotiation with government authorities as they place local communities on "an equal footing" by demonstrating active land use patterns. Mr. Turner states that, in the case of native peoples, "all you have is what you know, especially elders ... this knowledge can make us equal partners in a co-management arrangement".

(e) Co-management regimes

Generally speaking, the concept of private property is a very "western" notion. Native beliefs, however, advocate the concept of common property management in which individuals comprising a community, have specific responsibilities in order to protect and maintain a shared ecosystem. State control or private ownership are not usually effective methods of land management for shared resources; sustainable outcomes are more likely with participatory management systems. It is therefore important to involve native people and their institutions in all stages of reaching and implementing a land claims or self-government agreement.

The breakdown in attempts to arrive at a co-management system between the government and native groups has been exacerbated by the government's imposition of an external system of land use management which hindered and, in many instances, terminated the traditional system. In Cree culture, for example, it is important to signify respect for animals by ritual. When rituals are abolished or diminished, then respect or regard for traditions linked to the intimate relationship with nature, are lost.

III. DEVELOPING AN IDRC "NICHE" IN IK RESEARCH: RESULTS OF A BRAINSTORMING SESSION

(a) IDRC strategic interests with IK systems

The strategic interests of the Information Sciences and Systems Division of IDRC with respect to IK systems pertain to the role that information systems and communication networks can play in promoting sustainable development through: capacity building and cooperation between relevant IK institutions; exchange of IK information; and research and experimentation in IK Systems.

The strategic interests of the Environment and Natural Resources Division concern the potential role played by IK in the issues of: low-input sustainable agriculture; community-based conservation of biodiversity; linkages between cultural and genetic diversity; community-based resource management systems; and state regulatory systems regarding commerce.

Although both ISSD and ENR share a common interest in research and policy issues and the implications for IDRC involvement in the field of IK, there is current discussion between ISSD and ENR on whether IK should be treated as a separate program area, or as a dimension of all projects (as similar to gender issues).

(b) Background issues related to IDRC's role in IK research

With respect to research entry points for IDRC, it is necessary to identify i) a few concrete activities for possible support by IDRC and ii) the partners, goals, approaches, and methodologies of such activities.

IDRC needs to determine the extent to which development organizations have to modify their agendas and definitions of "development" in order to adopt the concept of IK. Moreover, it is necessary to establish the areas in which IDRC should intervene - what is "safe" or not safe? (e.g., internal politics).

It is also necessary to determine whether some of these proposals can be applied to any concrete programs, initiatives, or research adopted within the next year, and which could also serve as models for application to other sectors/issues within IDRC.

IDRC should not be "fighting the battles" of indigenous groups (i.e., there is a big difference between research and active involvement for social change). Although communities must fight their own political and internal social battles, IDRC should ensure that IK feeds into development decision-making at all levels.

(c) IK institution and capacity building

The knowledge base and experience at Canadian universities and research institutions is very good, especially in Northern studies and with work involving co-management planning with native groups. These advantages should be utilized by IDRC to further strengthen Canada's leadership role in IK research.

It was suggested that a program entitled: "Institutions for Sustainable Resource Management", could be developed by IDRC to help strengthen the capacity of indigenous groups to marshal information and to organize themselves in ways to control and protect the knowledge (i.e., intellectual property) of their resource base.

IDRC could support training which incorporates scientific (research methods, technical skills, databases management, GIS etc.) and traditional training for young natives. The profile of natural resources management as a viable occupation for youth and women should be supported through university scholarships and on-site training with knowledgeable elders.

(d) IK networking and data capture systems

IDRC could involve formal institutions (government departments) or informal institutions (NGOs or institutions of common property management such as local trappers/ hunters), in the design of an information network. It was suggested that national information networks and resource centers be designed so they empower indigenous institutions to develop their own agendas; define their own problematic concerns that require external assistance; and share information with other groups who may be able to apply the knowledge to similar situations elsewhere.

Participants agreed that the use of electronic database networks could be useful for making IK systems more "visible" and available to share information with all indigenous groups; however, their participation would need to be strengthened.

IDRC could also conduct a study to determine developments within Canada with respect to the use of GIS and remote-sensing applications for natural resource management and IK data capture. This information could then be shared among various indigenous groups.

Annex A

List of Participants and Agenda

Seminar Resource Persons:

1. Fikret Berkes, Director
Natural Resources Institute, University of Manitoba
177 Dysart Rd., Winnipeg R3T 2N2
2. Mary Carpenter, Student, Faculty of Law, University of Ottawa
3. Madeleine Dion Stout, Director,
Centre for Aboriginal Education, Carleton University, Ottawa
4. Guus von Liebenstein, Director
Netherlands Organization for International
Cooperation in Higher Education
Badhuisweg 251, 2509 LS The Hague, The Netherlands
5. Larry Morrissette, Team Leader,
Youth Program, Ma Mawi Wi Chi Itata Centre
220 Andrews St., Winnipeg, Manitoba, R2W 4T1
6. John Turner, Coordinator
Omushkegowuk Harvesters Association
Box 370, Moose Factory, Ont P0L 1W0
7. Michael Warren, Professor and Director
Centre for Indigenous Knowledge for
Agriculture and Rural Development (CIKARD)
Iowa State University of Science and Technology
324 Curtiss Hall, Ames, Iowa, USA 50011-1050

Seminar Participants:

1. IDRC staff
2. Other invited participants:
Simon Brascoupé, Anthropology/Sociology, Carleton University
J. Chevalier, Anthropology/Sociology, Carleton University
Rodrigo Contreras, World Council of Indigenous Peoples
Julian Inglis, ECO-ED
Villia Jefremovas, Anthropologist
André Lalonde, IK/Environment Consultant, Ottawa

Peter Low, Consultant
Fiona Mackenzie, Carleton University
Gabriel Regallet, IISD
Angela Streather, ECO-ED
Carmen Drouin

Agenda

Monday, 5 October

1. Welcome and Presentations
Shahid Akhtar, Joachim Voss
2. The Role of Indigenous Knowledge in Development Activities
Warren and Morrisette
 - the contribution (actual and potential) of IK to sustainable development
 - the project cycle and donors: the relevance of existing indigenous structures in development activities and interventions
3. Indigenous Knowledge (IK) as an Object of Study
Warren and Voss
 - the nature of IK as opposed to scientific, individual or other types of knowledge
 - the relevance of the concept of IK for research, communication and socio-economic development
 - overview of methodologies for recording IK and decision-making systems
4. Indigenous Knowledge Systems as a Method of Understanding the World
Dion Stout, Carpenter and Turner
 - historical and current trends in the interaction between IK systems and modern, scientific knowledge
 - the language of research in IK systems
 - the research process: experimentation and innovation versus scientific research
 - the systematisation and validation of acquired knowledge

5. The Canadian Experience
Carpenter, Turner and Dion Stout
 - role of women in knowledge preservation and transmission
 - IK and co-management of natural resources
6. Management of Indigenous Knowledge Data and Intellectual Property Rights
panel discussion with Warren, J. Chevalier and Morrissette
 - control and appropriation of the research process and its results
 - the question of scientific validation of IK
 - legal and ethical issues related to the use and exchange of IK

Tuesday, 6 October

7. Indigenous Communications Systems and the IK Cycle
Warren, Turner and von Liebenstein
 - the structure and functions of indigenous organizations responsible for storing and transmitting IK
 - IK as a basis for decision-making
 - integration of foreign knowledge into the IK cycle
8. Indigenous Knowledge and Information/Communication Technologies
von Liebenstein
 - definition and consequences of networking
 - electronic information flow
 - global networking
 - human and technical requirements
9. Understanding Indigenous Knowledge for Resource Policy Making
Berkes and Turner
 - communicating with policy-makers
 - input of IK and IKS to policy formulation
 - resource allocation for IK
10. Indigenous Knowledge Research Issues - Some Priorities
panel discussion with Berkes, Lambrou, Morrissette, Turner and Voss

- gender issues
- training of Indigenous People in IK research, management and communication
- indigenous approaches to environmental protection, conservation, biodiversity, etc.
- impact on IK of global economic and political context

Wednesday, 7 October

Brainstorming session to determine the IDRC (Canadian) niche in IK research; identify project possibilities and opportunities; identify project/network partners; identify collaborating partners; identify potential donors, etc.

Explore in depth one or two issues (e.g. genetic resources, or cultural aspects of managing biodiversity and natural resources) in terms of overall and specific objectives, methodology, outputs and results, research partners.

Annex B

Summary of participant questions and comments for future research activities on IK systems

General

IK is probably one of the largest national resources and it is only recently being recognized as being important to the development process.

It is important to recognize that IK should not be treated as a static concept, but rather as a dynamic process (i.e., always changing within the cultural framework); IK is a form of intellectual property and therefore should be protected against unfair manipulation and undesired commercial exploitation.

The issue of "cultural relativism" also becomes important. What are the values that any social group supports. IK should not be romanticized, but respected for creating an awareness of what local people have to offer.

Although IK systems represent a complex and different paradigm to science, it must be well understood in order to facilitate effective, useful, and targeted development in regions with indigenous populations. Western educational systems should include programs to inform all youth on what indigenous knowledge systems have contributed to the world and what it can do for them as individuals and within a community.

Participatory approaches to development tend to lead to more environmentally sound and sustainable outcomes. However, due to the "invisibility" of IK and indigenous organizations, participatory decision-making is logistically very difficult.

IK Data Capture and Network Systems

Systematic approaches are required to recognize the value of IK systems and how they will be used. Effective storage and retrieval systems for viable, community-based development activities are required.

Ideally, each country should have its own network to gather and organize IK across sectors in order to provide access to users. Other activities could include

establishing documentation units, providing training, and analyzing national education policies for the references to IK.

National networks should empower local or indigenous institutions to set their own agendas and define their own problematic concerns that require external assistance.

IK Research and Training Institutions

It is necessary for native groups to identify their information and research needs; they should build upon their own as well as scientists' capacity to manage information. They have to retain some form of control and dignity over the recording and use of traditional knowledge. Otherwise, this knowledge may become diluted and/or exploited to their disadvantage.

It is important to identify both institutional allies (e.g., universities, human rights agencies) and adversaries (e.g., government authorities, transnational corporations). Although the distinction among these groups is not always clear-cut, it is useful to know, for practical reasons, who the key players may be in the development of a project.

It is important for projects to have some scholarly merit (i.e., use of principles which are tested and proven, so as not to "rediscover the wheel"). There should be a strong concern for "methodological pluralism" and theoretical consistency.

The exchange of information and experiences is very important for extension purposes. It is also important to facilitate access to this information for the planning purposes of extension agents as well as of indigenous groups themselves

There exist much strife among indigenous people inequalities as well as internal tension. Elected, non-traditional leaders recognized by government do not always have legitimacy (i.e., moral authority) in the eyes of the population, and there are differences between elected and traditional leaders. Fear and ignorance sometimes prevent people from speaking out against their community leaders. It is therefore important that any activities or projects related to IK in Canada and abroad to consider the social and political "realities" that exist within and among indigenous groups.

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