

Biodiversity and Health Symposium Conclusions and Recommendations'

The final half day of the Symposium was designed to focus the attention of participants on the implications for policy of information presented in previous sessions and to collectively identify those areas of research that are most critical to furtherance of policy objectives. An important part of this was the invitation to traditional healers and other representatives of indigenous peoples (seven of the Symposium participants) to express their needs and concerns before an international audience. Their collective response was an endorsement of the Symposium's aims and objectives and emphasized the need to include more healers in the future and to support opportunities for Healers' Associations to hold international conferences.

General conclusions

It was agreed that several of papers offered a positive direction for the future. That is, *a solution to many of our modern environmental and social problems in the developing countries is the protection and promotion of biological and cultural diversity.* Specifically, the diversity of medicinal plants along with the knowledge of traditional healers can effectively mitigate health, economic, and environmental dilemmas incident to rapid globalization. This consensus called attention to the weakness of indigenous peoples' (and local communities') voice in international forums. The most important policy objective to emerge from this convocation of specialists in natural medicine was therefore a social one: With a commitment to improve human and environmental health and well-being, governments and international aid agencies must provide a

conduit for indigenous knowledge to enter the policy debate and an effective voice for local communities in the decision process.

To increase the effectiveness of healthcare as well as to alleviate poverty in the poorest parts of the world, participants recommended urgent attention to three principles:

1. Success will only be achieved if both biological diversity and cultural diversity are conserved,
2. Leadership must come from indigenous peoples/(local communities) in the use of traditional knowledge for broader health benefits;
3. International cooperation and partnerships are necessary to ensure safety and quality of traditional phytomedicines.

These principles reflect the central theme of the conference: collaboration to forge strategic partnerships. Many critical issues are unique to specific locations and circumstances. Effective action to address them will require links between public and

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private sectors, urban and rural communities, de-eloped and developing countries, aboriginal peoples/(local communities) and their governments, the elderly and the young, as well as traditional and modern health practitioners.

Presentations demonstrated that research and indigenous knowledge have made important contributions to the information made available on medicinal plants and especially to sustainable use and management. Nonetheless, an urgency to satisfy increasing consumer demand for natural products and supplements threatens to overwhelm these efforts. To illustrate, annual purchases in Canada exceed \$4.5 billion, the United States \$27 billion, and the international market is over US \$60 billion and growing at a rate of 7% per annum. National and international policies are required to ensure sustainable resource development and equitable division of costs and benefits. As a major source of knowledge in this domain of medicinal plants and traditional healing, Canada has an important role to play in formulating policy.

Participants unanimously welcomed the support of the Canadian government, its international development agencies, researchers, and civil society to international efforts including the Convention on Biological Diversity (CBD), WHO's Health for All and Good Agriculture and Collecting Practices actions, WHO/IUCN/WWF Revised Guidelines on the Conservation of Medicinal Plants and programs, and the Global Strategy for Plant Conservation. They also urged further support from the Canadian government for international agreements and conventions toward a legal framework that will encourage conservation of biological and cultural diversity and sustainably manage resources.

Background criteria for specific recommendations

The health-environment-economy nexus produces a policy dilemma of longstanding. The emphasis on cultural diversity in this Symposium introduces an important resource for mitigating the entire complex of problems. In coming to its recommendations respecting each of these four elements, the Symposium identified important values to be respected as well as specific policy objectives.

A. Values and principles that should be reflected in policies

Cultures

- Recognize that traditional medicine is the people's choice and culturally acceptable (and accessible);
- Culture represents an important source of health knowledge that is crucial to sustaining smallholder productivity

and social safety net;

- Traditional knowledge and the holders of that knowledge merit respect and protection;
- Ensure the participation of local (indigenous) peoples, specialists, including women and other members of the local communities, in all activities related to biodiversity and health;

Health

- Formal recognition that traditional medicine has a role to play in primary healthcare provision, especially for the rural and urban poor;
- Validation of the safety and efficacy of traditional treatments would improve general level of healthcare in developing countries;
- As well as a source of medicines, biodiversity is valuable to human health for its environmental services, bioindicator values, and therapeutic contribution to the over-all environment;
- Link between health and diet needs greater emphasis.

Environment

- Indigenous peoples' lands contain important biodiversity, including sources of medicinal plants;
- Maintenance of this biodiversity in our lands is important to health promotion as well as medical care;
- Medicinal plant conservation requires much more attention worldwide.

Economy

- Commercial development of safe, efficacious, and affordable phytomedicines could extend and improve general healthcare in many countries;
- Although it may not be adequately measured as part of the formal economy, medicinal plants and the knowledge of their use make a significant contribution to productive activities, incomes, and well-being in developing countries
- Notwithstanding these opportunities, local communities should have the right to control commercialization of their knowledge;
- Local communities have the right to equitable sharing of the benefits arising from the use of their knowledge.

B. Objectives of policy (implications of the values and principles)

Cultural

- Formal recognition of traditional medicine in developing countries that rely on it for a majority of healthcare needs and explicit support for its continuance and augmentation;
- Education and public awareness programs that acknowledge the contributions of traditional knowledge and bridge traditional and scientific research approaches;
- Mechanisms to protect indigenous people's knowledge

as a property right.

Health care and promotion

- A commitment to improve local healthcare using traditional means before considering commercialization of medicinal plant products in global trade;
- Assistance to (rural) healers and birth attendants for establishing associations to express their collective needs and concerns;
- Links between governments and traditional healers' associations to support integration of traditional and modern medical practices;
- Financial and moral support to local NGOs (e.g., TRAMIL, PROMETRA, (Eastern Africa Network on Medicinal Plants and Traditional Medicine), et al.) that are actively involved in assisting communities in the maintenance of traditional sources of healthcare;
- A "Consultative Group for Traditional Medicine Research" (CGTMR) to focus on regional needs (analogous to CGIAR).

Ecosystem maintenance

- A baseline inventory of ecosystems and threatened habitats (especially dry and semi-arid regions) that contain medicinal plants so that protection priorities can be established;
- Harvesting guidelines for the sustainable collection of wild medicinal plants;
- The identification of sustainable propagation/cultivation practices;
- The development of new medicinal crops to avoid the threat to wild types;
- Establishment of genebanks and botanic gardens to protect germplasm of native medicinal plant species; An evaluation of the conservation status of medicinal plants in all countries to provide a basis for protection and management.

Economic development

- Government recognition that traditional medicine and medicinal plants in a culturally acceptable healthcare system offer significant economic benefits;
- Commitment by governments to maintain and augment a traditional system
- Commitment by government to implement, where necessary, constraints on commercialization and export of traditional knowledge to protect both biological and cultural diversity;
- Explicit provision, where cultivation is a response to enhanced appreciation of medicinal plants, to compensate for the displacement of collectors (generally women and landless peoples) from their accustomed source of livelihood.

Recommendations for effective partnering

The following comments apply to all governments, but the details reflect the Canadian context of the Symposium. Government agencies responsible for health, agriculture, environment, and overseas development assistance have all shown leadership in their various capacities, but even more could be accomplished if collaboration between parties were officially supported. This would permit greater synergy of actions and efficient use of financial resources. Specifically, an interdepartmental (Environment, Health, Agriculture, Foreign Affairs) agreement on the parameters of a national bio-diversity and health concept would give Canada a more effective voice as global issues on this topic become more urgent. It is recommended that Canada's development agencies (CIDA and IDRC) increase their efforts to encourage client (developing) countries to embrace the values and adopt the policies detailed above in developing their own national policies for traditional medicine (and medicinal bio-diversity). As an example, such actions would go far to implementing recommendations in African countries called for under the Declaration of the Period 2001—2010 as the Decade of African Traditional Medicine.

Furthermore, it is recommended that the Canadian government incorporate the importance of biodiversity to human health in all relevant national policy frameworks and programs and that attention be given to working with client (partner) countries to accomplish the following:

- Increase global efforts to conserve medicinal plant biodiversity and the traditional knowledge of their use in global healthcare;
- Support R&D actions to evaluate and standardize traditional phytomedicines in order to promote their safe, effective, and affordable use;
- Establish effective regulatory systems for registration and quality assurance of phytomedicines;
- Establish sustainable commercial enterprises for local phytomedicine production that offer new income alternatives. These should be linked to the specific socio-cultural background, resource potential, and the technological capabilities of each country; and
- Work with the World Trade Organization (WTO), the World Intellectual Property Organization (WIPO), and other relevant organizations to identify a process that effectively regulates the international trade of medicinal plant species and protects local communities as well as the individual country's resources and rights.

Focusing future research to the policy objectives and recommendations

The Symposium and its output of reports and recommendations reflect the understanding and values of researchers and practitioners whose expertise lies primarily in the fields of biological sciences and health care. We are conscious that further action on our recommendations depends on a favorable response from controllers of budgets and that these in turn depend on a compliant political environment. It is therefore important for us as a research community to focus our attention on possible sources of resistance to what we consider desirable policy directions and to encourage the kinds of research that will lend greater precision and higher value to policy goals.

The following are some of the research projects which Symposium participants identified as important input to formulation of an integrated biodiversity and health policy. Such research would benefit from a multi-sector partnership between Health, Agriculture and Environment, and Trade.

- Socio-economic assessments of volumes and values of harvested medicinal plants for optimizing opportunities in market supply and demand (Health, Trade, and Finance);
- Inventory of medicinal plants that identifies threatened species, threatened ecosystems, and threatened habitats (especially dry and semi-arid regions) (Environment and Health);
- Information required for recovery actions aimed at threatened species;
- Data required for effective, in situ and ex situ protection;
- Harvesting guidelines for the sustainable collection of wild medicinal plants (Environment and Health);
- Identification of sustainable propagation/cultivation practices and opportunities (Agriculture and Health);
- Estimate of social impact of cultivation on collectors (generally women and landless peoples);

- Development of new medicinal crops to avoid the threat to wild types and satisfy human needs (Agriculture and Health);
- The potential social and biological impact of marketing and trade (local, regional, and international) on the resource-base and people's livelihoods (Environment, Agriculture, Trade, and Finance);
- Identification of appropriate mechanisms to improve and ensure equity in access to, and benefit from, medicinal plant resources;
- Analysis of factors and challenges for policy development, harmonization, and implementation in developing countries;
- Identification of opportunities for community-based processing of plant materials, quality development, and marketing;
- Identification of key considerations in/for integrating traditional medicine and use of medicinal plants in public health care sector;
- Assessment of factors and policies that determine and constrain household dietary diversity and nutritional status. and the opportunities to enhance it;
- Identification of mechanisms to resolve potential conflicts between local level access and benefit sharing priorities, and national/international interests.

In submitting this list along with our report and recommendations, we especially solicit the attention and advice of decision-makers and their advisors on any potential resistance to the plans and policy objectives outlined. There are also some specific relevant questions. For example: Are there important additions to the list? Is there a ranking of them that will promote greater likelihood of success in the overall enterprise?

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