Biodiversity: Science and Governance Bulletin

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HIGHLIGHTS OF THE INTERNATIONAL CONFERENCE “BIODIVERSITY: SCIENCE AND GOVERNANCE”: THURSDAY, 27 JANUARY 2005

On Thursday, participants to the International Conference “Biodiversity: Science and Governance” convened in workshops throughout the day to address key governance challenges: documentation of biodiversity; challenges in achieving the 2010 target; biodiversity and urban areas; biodiversity and health; microbial biodiversity; challenges for fisheries management; innovation; indicators and the 2010 target; biological and cultural diversity; and management of tropical and subtropical biodiversity – forests and islands.

Editor’s note: Coverage of workshops has been limited to those described below, selected according to priorities determined by the Conference organizers.

WORKSHOPS

GOVERNANCE: Multi-level governance of biodiversity:
Anil Gupta, Indian Society for Research and Initiatives for Sustainable Technologies and Institutions, spoke on traditional knowledge for biodiversity conservation. He advocated establishing a fund to reward and compensate knowledge providers; a disclosure requirement for knowledge sources in patent applications; and an international register of sustainable technological innovations and traditional knowledge.

Chimère Diaw, Center for International Forestry Research, discussed the social construction of biodiversity. He said the challenge lies in creating a framework relying on both large and small institutions and on local and scientific knowledge.

During a panel discussion, Maria Fernanda Espinosa, IUCN, drew attention to the need for: prior informed consent procedures for access to knowledge and resources; benefit sharing; economic evaluation of traditional knowledge; and recognition of rights of users and providers. Charles McNeill, UNDP, presented the Equator Initiative, designed at building communities’ capacity to conserve biodiversity and reduce poverty. Graziella Borrini-Feyerabend, Switzerland, noted differences between governance types and governance quality. Bernard Roussel, French National Museum of Natural History (MNHN), said local community representation regarding the protection of traditional knowledge should be based on common ownership. Jean-Louis Guindo, UN Economic Commission for Latin America and the Caribbean, noted the need to address gaps and differences regarding biodiversity conservation among governments, as well as synergies among relevant mechanisms. He also said international agreements should set clear timetables and quantitative goals. Renaud Dutreil, French Minister of National Education, Higher Education and Research, underscored the need to improve scientific knowledge and its interface with decision making. Peter Bridgewater, Secretary-General of the Ramsar Convention, recommended that scientific bodies of biodiversity-related conventions coordinate their work. Gordon McInnes, European Environment Agency, underscored the need for information connectivity. Monique Barbut, UNEP, said an international group of experts on biodiversity should aim to: enhance the quality of biodiversity policy; integrate biodiversity science into social and economic policies; and better use existing, and conduct new, research on biodiversity.

Serge Lepeltier, French Minister for Ecology and Sustainable Development, highlighted the need to solve conflicts of interests regarding biodiversity and integrate access to and sharing of benefits from genetic resources into national legislation.

AGRICULTURE: Participants heard presentations on case studies regarding: local agricultural systems in Indonesia; diversified agro-forestry in Indonesia; cultural eutrophication in the Northern Gulf of Mexico; pastoral practices and dynamics of woody vegetation in the Sahel; and a recovery scheme for farmland birds in the UK.

The workshop’s facilitators then introduced the general debate. Henri Buller, University of Exeter, highlighted the need to determine to be done from agriculture and reconceptualize biodiversity as an integral part of agriculture rather than as an externality. Emile Frison, Director of the International Plant Genetic Resources Institute, stressed that biodiversity can be a driver for intensification of agriculture in marginal areas. Jacques Baudry, French National Institute for Agricultural Research (INRA), underscored the need for local empowerment. Bernard Hubert, INRA, suggested further studying the relation between market globalization and locally produced goods, and stressed the need for a mindset change regarding farmers’ rights and responsibilities. Sara Scherr, Consultative Group on International Agricultural Research, said farmers are stakeholders in biodiversity, and noted the need to consider the Millennium Development Goals on food security from an ecosystem perspective.

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necessary. Dominique Busserau, French Minister for Agriculture, Food, Fisheries and Rural Affairs, highlighted the interdependence between agriculture and biodiversity, and stressed the need for partnerships, research development and awareness raising.

**CHALLENGES IN ACHIEVING THE 2010 TARGET:**
Following a discussion on main issues regarding conservation-oriented research and whether current conservation research is satisfactory, Roundtable Moderator Jean-Pierre Reveret, University of Quebec, opened discussions on proposals to improve research and its funding. Natarajan Ishawaran, UNESCO, explained that more money is injected into education than into the environment. Jean-Yves Grosclaude, French Agency for Development, stressed developing countries’ needs in capacity building, noting difficulties in convincing finance ministries of the benefits of conservation programmes. John Robinson, Vice-President of the World Conservation Society, stressed the need for an organizational framework for collecting and analyzing data, monitoring, and reporting ID reservoirs, he urged for global vaccination programmes for whooping cough and cholera. Noting increasing exchanges between vertebrate diversity and disease risk, focusing on Lyme disease. He stressed that, in addition to pathogens, wildlife biodiversity as a limiting factor in agriculture.

Jean-Paul Gonzalez, IRD, discussed the fundamentals and areas of disease emergence. He called for changing farming practices to minimize ID outbreaks, including increasing the genetic diversity of farm animals.

In the ensuing discussion, participants highlighted the need for increased: transdisciplinary research on ID, particularly in urban ecology; sharing of benefits of pharmaceutical discoveries; recognition of the climate-biosphere interdependence; and diversification of food production systems.

**MICROBIAL DIVERSITY AND SOCIETY:**
Workshop Chair Kenneth Timmis, German Research Centre for Biotechnology, gave an overview of the phylogenetic and functional diversity of microorganisms. He described microbial versatility, and noted a substantial lack of knowledge on diversity, life processes and value potential of microorganisms.

Erko Stackebrandt, German Collection of Microorganisms and Cell Cultures, elaborated further on microbial diversity and abundance, and said cultivating and conservation of even a fraction of existing microbes is prohibitively costly.

Michail Yakimov, Italian Institute for Coastal Marine Environment, presented on exploring and exploiting the diversity of pollutant-degrading microbes, highlighting experiments in which added nutrients and emulsifiers accelerated microbial breakdown of petroleum.

Willem de Vos, Wageningen Centre for Food Sciences, gave examples of how microbial diversity and functionality in foods and in the human body contribute to health, and how knowledge of this can act to humans’ advantage.

Jacques Balandreau, French National Centre for Scientific Research, explained how human activities affect microbial diversity in soils and in our bodies, and said the current increase in emerging environmental pathogens stems from our past ignorance of microbiology.

Angeli Kodjo, National Veterinary School of Lyon, said animals’ fate with regard to microbes is linked to ours, since humans acquire both microbes and resistance through contact with domesticated animals, and vice versa.

Victor de Lorenzo, Autonomous University of Madrid, described biodegradation as a battle between pollutants and bacteria, and said the catalytic ability of the bacterial landscape is higher than that of microbes’ added individual activity.

**INNOVATION: Innovation for and from biodiversity:**
Workshop Chair Bana Bihari Jana, University of Kalyani, India, introduced the session, highlighting the issue of genetically modified organisms (GMOs).

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Describing the regulatory framework related to biosafety in his country, Roger Zangré, National Agency for Valuation of Research of Burkina Faso, argued that alleviating poverty requires innovation, and suggested generating facts rather than letting fear and presumption prevail.

Marc Dufournier, French National Institute of Agronomy, highlighted successes accomplished through innovation based on tradition rather than technology. He expressed doubts about genetics as a limiting factor in agriculture.

David Heyd, Hebrew University, distinguished between human-oriented value and value per se and, noting that bioethics is usually associated with human health, stated that human and ecosystem health may conflict.

**Roundtable: Modern tools, methods and new ways of thinking:**

Pejman Rohani, University of Georgia, presented on the mechanisms underlying ID dynamics. He provided explanations of incongruities between pathological outbreak models and data.

Jean-François Guégan, French Research Institute for Co-operative Development (IRD), presented on the macro-ecology of population dynamics of ID. He described the macro-ecology of whooping cough and cholera. Noting increasing exchanges between ID reservoirs, he called for global ID eradication and an international programme to predict future biodiversity-related health risks.

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