

INSEE

NEWSLETTER

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Designed by: INSEE Secretariat at IEG Delhi

FROM THE PRESIDENT'S DESK

INSEE is now just about five years old. But the INSEE family is quite old and growing. It was in the year 1999 that several social and natural scientists came together and formed the society with an intention of providing a forum for dialogue between scholars, practitioners and policy makers on different aspects of economy, ecology and environment. There is a lot of expectation from the young Society.

During the short period of five years, the Society has moved up the scale of research and outreach activities in a number of ways. The Biennial conference of INSEE has become a household word, at least among the INSEE family. Proceedings of the first two conferences have been published in book forms. During the last four years, INSEE has organized several workshops, training camps and round tables in different places such as Bangalore, Bhopal and New Delhi.

One of the major aims of INSEE is to act as a platform for Indian scholars and practitioners to interact with several international research bodies such as International Society for Ecological Economics, International Association for Studies in Common Property Resources and many more. In recent years INSEE has also established a close link with South Asian Network for Development and Environmental Economics.

INSEE has a *mission* and a *vision* for the future. The mission is to bridge the felt need for interaction across social and natural science disciplines to strive and promote new thinking of national and international importance on matters related to ecology and environment. The vision set out for the coming ten years is of creating strong links between INSEE and major national and international organizations and professional associations and enabling research in ecology and environment across countries. These are not easy tasks. INSEE will work towards promoting curriculum in this over-lapping field between natural and social sciences, networking with organizations such as ISRO and ISAE, and outreaching policy makers with emerging tools and research findings for policy adoption.

The years of 2002 and 2003 saw some huge leaps in this direction. A training workshop is being organized on watershed development in October 2003 at Gujarat Institute of Development Research, Ahmedabad. With a mix of participants from GO, NGO and researchers, it is only hoped that alternative methods of watershed development will be put to a rigour of validation and applications.

The biennial conference of INSEE for the year 2003 will be at Indian Institute of Management, Kolkata. For good reason, the theme of *Biodiversity and Quality of Life* has been chosen for the conference. It will also be a forum in which several policy makers and academicians who have worked and deal with National Biodiversity Act and National Biodiversity Strategy & Action Plan will be present. I am sure, you too will make it a point to be there. There will also be a pre-conference training workshop on Biodiversity and Quality of Life.

INSEE has also formally accepted the invitation from International Society for Ecological Economics to co-host the ISEE conference in 2006. This will be a grand opportunity for India and neighbouring countries to put together our commitments to show the world that our interest in ecology and environment is a long term one and towards developing a sustainable world.

The strength of INSEE is in the strong commitment of its members. The commitment is in the form of volunteering for organizing training camps, seminars, workshops, bringing out books, documents etc. All suggestions for taking a lead in the organization of such events in the future will be greatly appreciated. At present we have about 200 life members. We would like this number to grow to 300 in one year.

All suggestions can be directed to our Executive members or to the INSEE secretariat.

This Newsletter from INSEE is being brought out for the first time. It contains three short pieces on issues of current interest contributed by members, in addition to information of a more logistic nature. We will wait for your comments, suggestions and information of news value, to make it better in the coming issues. Our aim is to begin with this Newsletter, aimed at making the INSEE more operational and purposive. I hope all of you will have a very pleasant, rewarding and memorable association with INSEE.

Gopal K. Kadekodi*

*President INSEE, and Director, Institute for Social and Economic Change, (ISEC) Bangalore

FORTHCOMING EVENTS

THE THIRD BIENNIAL CONFERENCE OF INSEE

ON

"BIODIVERSITY AND QUALITY OF
LIFE"

ON

18-20 DECEMBER 2003

AT

INDIAN INSTITUTE OF
MANAGEMENT CALCUTTA,
KOLKATA

ORIENTATION AND TRAINING WORKSHOP

ON

"WATERSHED DEVELOPMENT
AND MANAGEMENT"

ON

OCTOBER 16-19, 2003

AT

GUJARAT INSTITUTE OF
DEVELOPMENT RESEARCH
GOTA AHMEDABAD

PRE-CONFERENCE TRAINING WORKSHOP

ON

"Biodiversity for Social Scientists"

ON

17 DECEMBER 2003

AT

INDIAN INSTITUTE OF
MANAGEMENT CALCUTTA, KOLKATA

CONTACT PERSON FOR ORIENTATION AND TRAINING WORKSHOP

Interested persons may contact the workshop co-ordinator **Dr. Amita Shah**, Professor, Gujarat Institute of Development Research, Gota Ahmedabad 380 060. gidrad1@sancharnet.in

CONTACT PERSON FOR CONFERENCE

Interested participants may communicate with **Dr. C. S. Shylajan** at IIM (C), Kolkata shylajan@iimcal.ac.in for detailed inquiries and mode of payment for advance booking.

GM Crops: Focus On a Current Debate

Nirmal Sengupta*

After five years of testing and debate, in March 2002, the Genetic Engineering Approval Committee (GEAC) of the Ministry of Environment and Forests, Government of India, approved the commercial marketing of seeds of Mahyco-Monsanto's Bt-cotton carrying an insecticidal gene from *Bacillus thuringiensis* (Bt). Preventive of cotton pests such as bollworm, and marketed under the trade name of Bollgard, this GM cotton is the first GMO (Genetically Modified Organism) approved for commercial plantation in India. In some other parts of the world commercial cultivation of GM crops is extensive. In 2002 above 58 million hectares of biotech crops were grown in the world. Worldwide, about 45% of soy, 11% of maize, 20% of cotton and 11% of rapeseed are biotech crops. The United States is the leading producer of agricultural GMOs followed by Argentina. Bt cotton is grown in South Africa, Mexico, China and now India.

At present herbicide tolerant crops account for 75% of commercially available GM crops being followed by insect resistant crops (17%). Farmers in the developing countries do not use herbicides. They use insecticides only on commercial crops such as cotton but not on staple crops. But drought tolerant, acid soil tolerant GM crops are already in laboratories. These are of great interest to developing countries. In near future, it may be possible to obtain food products with improved nutritional quality. JNU scientists have developed a GM potato that contains a gene from amaranth and produces up to 30% more protein. Small farmers and developing countries may not have to wait long to find a deluge of new opportunities and a severe challenge to their environment.

There are two views about GM crops. One is that GM crops may do irreparable damage to the environment, human health and well being of poor people. The other is that GM crops have the potential to alleviate hunger and poverty and even improve the quality of environment. No doubt the new technologies of genetic modification have a great potential to improve the agricultural performance of plants and animal species, and is the technology of the future. But like all other epochal technologies, a cautious approach is needed in adoption and extension. The need for a rigorous regulatory framework based on pre-marketing approval, subsequent controls and periodic re-assessments cannot be denied. Though the first GM crops were developed in the 1970s, systematic efforts for risk assessment and precautionary measures are very recent.

Before 1999, the European Union (EU) approved nine agriculture biotech products for planting or import. It then suspended consideration of all new applications for approval. EU will soon introduce tough new labeling and biotech trace-back rules. Several other countries including India are in the process of framing regulations. The first international instrument on this, the Cartagena Protocol on Biosafety has entered into force on September 11, 2003 as a part of the UN Environmental Programme. The Protocol establishes international principles that will govern the transfer, handling and use of GMOs with a particular focus on transboundary movements. It is not against GMO but directed to create an enabling environment for environmentally sound application of biotechnology.

The passages of these reforms are far from smooth. Both within countries and between them acrimonious debates are on. The US government has consistently refused to implement any measures to segregate and control the spread of GM varieties.

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As a consequence, US maize in general may contain some GM maize varieties that are not approved in other countries, although only a fraction of production is GM maize. Six EU countries are still evaluating the potential long-term health and environmental effects of releasing GMOs into their food chain that led to a five-year moratorium on imports. The U.S. maize farmers suffered loss of about \$300 million a year. President Bush then accused Europe of impeding US efforts to help end the long-term problem of hunger in Africa by dramatically increasing agricultural productivity. Trade Commissioner of European Commission, Pascal Lamy retorted that the hunger argument in poor countries should not be used to promote the interests of a domestic constituency. In May 13, 2003 the US instituted a WTO dispute settlement proceedings against the EU. The WTO decision in this case will have far reaching impact. Most Asian countries follow the European guidelines. Also, reconciling WTO rule with the Cartagena Protocol is now imperative.

Policy makers are severely constrained by the availability of facts, figures and analysis. Until now, the matter has been dealt largely from the perspectives of science, technology and environmental activism. Only recently, there are some efforts by social scientists. Qaim (in Qaim et. al 2000) introduced an analytical framework for quantitative impact assessment. Xepapadeas (2002) discussed the potential for using market-based economic instruments for insect-resistance management (IRM) to prevent emergence of new resistant species. Batie and Ervin (2001) argue that both theory and limited empirical evidence suggests that left to the market forces these are neglected public goods showing the usual adverse effects. Environment and Development Economics (2003) has recently brought out a special section containing three articles on 'genetic use restriction technology' nicknamed 'terminator gene'. Economists are in a unique position to provide the knowledge needed to set research priorities in the technology, formulate appropriate intellectual property rights, assist institutions in development and diffusion of products, assess public attitudes and design policies to address them (Graff et. al, 2000).

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Mainstreaming Mountain Biodiversity

Issues in Global Agenda : View from Rome

Upeendra Dhar*

Under the global agenda of sustainable development, mountain regions (covering nearly 25% of the Earth's land area, inhabited by over 12% of total global human population and more than half of World's population depends directly or indirectly on mountain resources and services) have received world wide attention. In particular, global events during International Year of Mountains - 2002 strengthened the international commitments for sustainable development of mountain regions. Wide-ranging implications of this issue were highlighted at global forums like the World Summit on Sustainable Development (Johannesburg, August 2002) and Bishkek Global Mountain Summit (October 2002). Furthermore, as water tower of the world, mountains will continue to remain in sharp focus during the International Year of Fresh Water - 2003.

Among other resources, uniqueness and life support value of mountain biodiversity are intricately linked with the agenda on development with far reaching implications at local, regional and global level. However, intense vulnerability of mountain biodiversity elements to the human and/or climate-induced changes is being viewed with concern. Also, biophysical diversity, geographic isolation and socio-economic marginality of these regions add to the complexity of issues related conservation and sustainable use of mountain biological diversity. Considering these facts, under the provisions of Convention on Biological Diversity (CBD), the Conference of the Parties (COP) selected Mountain Biodiversity as one of the major themes for in-depth consideration at its seventh meeting. Subsequently, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) considered Mountain Biological Diversity as the main theme in its eighth meeting held in Montreal, Canada (10-14 March 2003). In response to SBSTTA request, an Ad Hoc Technical Expert Group (AHTEG) on Mountain Biological Diversity was constituted. AHTEG meeting was convened in Rome (July 1-3, 2003). The deliberations reviewed the proposed programme of work on Mountain Biological Diversity and identified gaps in suggested actions and included of new actions. Government nominated experts from Algeria, Brazil, Canada, Cuba, Czech Republic, Ecuador, France, India, Italy, Nepal, Saudi Arabia, South Africa, United Kingdom and observers from FAO, ICIMOD, IUFRO, the World Bank and from the University of Rome and the Ministry of Environment and Territory Protection in Italy attended the AHTEG meeting. As the programme elements are framed to cover general and specific issue of Mountain Biodiversity across the globe, the mountain nations will have to prioritize issue as per their requirement. For instance, in the context of India, where Himalayan Mountain ranges are the prominent feature, among others, the following specific elements/action deserve priority consideration:

(i) identify factors responsible for the retreat of glaciers and implement measures to minimize the impact of this process on biodiversity, (ii) develop mechanisms and implement measures to reduce anthropogenic induced slope instability and mountain and /or enhance soil stability and ecosystem integrity by way of diverse and dense vegetation cover that will also promote soil biodiversity function, (iii) Initiate specific activities to

facilitate maintenance, protection and conservation of existing levels of endemic species, with a focus on narrowly -distributed taxa, (iv) examine the representativity and sustainability of existing protected areas and take measures to identify and address gaps and weakness to ensure representativity with wide ecological range, (v) to promote the sustainable cultivation of economically useful wild plants (e.g. medicinal, edible and aromatic plants) as an income-generating activity for the local inhabitants, (vi) promote integrated watershed management practices at all levels for maintaining ecosystem integrity soil stability, upstream- downstream inter-connections and protection against natural hazards, (vii) promote actions that are beneficial for conservation through generating employment and /or income particularly for marginal communities, (viii) document indigenous knowledge, practices, processes and technologies to ensure conservation, sustainable use of biodiversity and sharing of benefits, (ix) develop and introduce appropriate incentives and market mechanisms for the maintenance of ecosystem goods and services, (x) promote the implementation of agrobiodiversity, agroecosystem and the goods and services they provide both for meeting local demands and to ensure source of food security, (xi) develop capacity building measures and information sharing to facilitate the involvement of indigenous and local communities with their prior informed consent, in the management, conservation and sustainable use of mountain biological diversity, (xii) encourage the development of new methodologies and new mechanisms, such as the upland-lowland contract to implement cooperative agreements which sustain mountain biodiversity and the provisions of goods and services, (xiii) promote the monitoring of susceptible areas subject to climate change, (xiv) develop methodologies for assigning value to the ecological services provided by biodiversity rich land management system in order to develop economic incentives mechanisms for compensating the poor and vulnerable mountain communities, (xv) conduct interdisciplinary, key research programs on mountain biological diversity and its relationship to ecosystem structure and functions including to transitional zones linking upland-lowland ecosystem such as ecotones, hotspots, buffer areas and corridors, (xvi) promote further the education of women and their role in conservation and dissemination of traditional knowledge, (xvii) document best practice and appropriate technologies and innovative approaches to managing biodiversity, etc.

While on a wider scale the SBSTTA in its forthcoming ninth meeting (10-14 November 2003) will complete the proposed programme of work on Mountain Biological Diversity, on relatively smaller scale, for example in India, the Mountain Biological Diversity will be discussed at length during the third Biennial Conference of the Indian Society for Ecological Economics (INSEE), December 18-20, 2003, Kolkata. The main theme of the conference is "Biodiversity and Quality of Life" and Mountain Ecosystems constitute one of the sub themes.

All these initiatives indicate the importance of addressing issues related to maintenance, enrichment of mountain biological diversity for sustainable development.

* Director In-charge and Core-Head Conservation of Biological Diversity G. B. Pant Institute of Environment and Development, Almora

Time to take an Integrated View of Social and Natural Systems : Musings from Trieste

Kanchan Chopra*

It is often said that distance lends perspective. It is perhaps due to this that, visiting as part of the Ecological and Environmental Economics Programme here at ICTP, Trieste, my thoughts go back to The Indian Society for Ecological Economics (INSEE) and the directions that it needs to take and encourage in the future. The INSEE is now close to completing its fifth year of existence, having been initiated on September 24, 1998 and registered in early 1999. Time has shown that the Society is here to stay. It has received more than adequate support. Some professionals supported it because they saw this as a great opportunity for an extension of research and policy work on the environment. Some of us thought the issue of the relationship between development and environment needed a fresh rethinking from the perspective of the developing countries and no professional society in India did that. The word "sustainable development" had become a buzzword and seemed at best vague and full of contradictions. More investigations were needed and it seemed all of us needed to pitch in to provide policy answers.

"Ecological Economics for Sustainable development" was the theme of our First Biennial Conference in 1999 and we received a range of contributions from diverse perspectives. We were being inclusive and all shades of opinions on issues of environment and development were welcome as long as the analysis was rigorous and scientifically acceptable.

But there lay the catch. Acceptable as rigorous by which science and to be judged by what kind of yardstick? Tools differed, and those used by one set of practitioners were deemed inadequate by others. The issues involved are in effect echoes of conflicts between "environmental" and "ecological" economics in other parts of the world and somewhat counter-productive. My understanding of that conflict in so far as its content goes is as follows (with apologies to both sides): Environmental Economics argues that a focused analysis of the Economics of environmental problems using tested tools of economic theory and econometric analysis serves a purpose. "Ecological Economics", on the other hand, casts its net wider focusing on the inter-relationships between natural systems and social systems. I wish to argue in the paragraphs that follow that one is in fact nested in the other and the link makes sense only when created with the help of rigorous analytical tools and methodologies.

It remains true that partial analysis of limited problems serves a purpose. We look at a part of a system, the discharge of effluents into water or pollutants into air for instance and take a decision on what kind of payments or taxation schemes to design depending on an appropriate analysis of incentives. However, even for such partial analyses, we need to know which of the pollutants are more or less harmful to humans. And we accept the opinion of scientists on that issue and proceed with a kind of sub-system approach. This is by and large acceptable as long as we do not come across discontinuous behavior of systems arising, for example, out of disruptions in social systems or in natural systems. Examples of the first are: large scale disruption of livelihoods resulting in violence, political instability and hence non-acceptability of interventions suggested by civil society. Instances of such lack of acceptability occur often times in real life situations, often pushing the environmental agenda into the background

in a large number of political contexts.

Examples of the second consist of disruptions of natural regulating functions of ecosystems. These are sometimes substituted for by technology and related defensive expenditures. Over a longer period of time, the lower level of availability of the functions to some vulnerable regions or groups acquire characteristics of constraints on development for them. Any analysis of the inter-relations of development and environment must be able to point out towards these more medium term problems and the possibility or otherwise of their emergence. In a development context, whether or not a population will overshoot its resource base will depend on how the dynamic relationship between economic growth, technology, the environment and demographic transition work out. The tools relevant for this analysis lie in the area of dynamic systems analysis and are being increasingly used¹.

We need to learn from the biological and other sciences the dynamic nature of equilibrium or even the fact that equilibrium may not exist.² And so it turns out that a meaningful understanding of the relationship between development and environment needs a relook at the tools of economic analysis through the prism of developments in the life and other sciences using tools of mathematics. But, developments in the life sciences do not have behavioral assumptions and behavioral motivations built into them. There shall then be need for further development in the theory of Economics as indeed is evidenced in recent literature³

To reiterate, as long as the small and focused "policy or theory" issues that we propose to discuss under the rubric of "Environmental Economics" are known to conform to small changes that bring the system back into equilibrium in the original "basin of attraction", limited exercises have a role to play. Let us simultaneously be on the lookout for new evidence on when this is not true⁴. While experiments on natural systems are more referred to in the literature in this context, societies are as well subject to rapid transformations from one state of affairs to another (following a period of gradual imperceptible change). This rapid transformation may mean a transition from compliance (say with social norms) in one basin of

¹ See for instance the paper by Andries (2003) in which he asks the question "under what conditions is a developing economy more or less prone to 'population overshoot and resource collapse' using a mathematical model that incorporates three main drivers: population dynamics, renewable resource dynamics and economic development." Similarly, Borghesi (2003) examines the impact of different objective functions and defensive technologies on the natural ecological dynamics.

² See Brian Walker/ Simon Levin etc from Feb 2003.

³ See Art de Zeuw Arrow, Dasgupta and Maler and others.

⁴ One of recent examples of work in this area is the work on the shallow lakes where increasing loadings of phosphorous move it into another regime of.... (Brock, Carpenter et al.1997) this has resulted in a reexamination of the tools of Economic theory and practice needed to deal with such instances. See Maler, Xepapadeas and De Zeuw (2003)

attraction to another neighbourhood "basin of attraction" characterized by non-compliance.⁵

The relevant explorations, therefore, shall need to be done at the intersections of the disciplines both within and between the natural and social sciences.

The good news that some of us may like to focus on is that this working across disciplines does not take place in a theoretical void (in a manner of speaking). It is rooted in the study of natural and social systems through the tools of dynamic systems analysis. There exists of course an increasing literature on the subject.⁶

So INSEE can look back with a degree of pride and confidence and claim that we were right in casting the net wide, in being inclusive. But we owe it to ourselves and to the issues we are all interested in

- to plan for the kinds of experimental studies in India that have laid the foundations for the analysis of ecological and social systems in other parts of the world
- or at the minimum to do our limited analytical exercises as nested within frameworks where we know they are relevant.

Neglecting this is of course wrong science. More importantly, it may give incorrect policy signals to policy makers and this can be far more damaging in a developmental context. We have indeed a long and interesting journey ahead!

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⁵ See Dasgupta (2002) where he refers to the use of such analysis referred to by sociologists as "tipping" and its use to explain recent fall in birth rates in parts of the poor world (Dasgupta 2000).

⁶ I quote two recent books Gunderson and Holling eds. (2002) and Berkes, Colding and Folke eds. (2002).

LATEST PUBLICATION FROM INSEE

*Papers from 2nd Biennial Conference,
held at Indian Institute of Forest
Management, Bhopal 2001.*

"WATER RESOURCES, SUSTAINABLE LIVELIHOODS AND ECO-SYSTEM SERVICES"

Edited
by

**KANCHAN CHOPRA
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Published for
Indian Society for Ecological Economics
By
Concept Publishing Company
New Delhi-110 059

PUBLICATIONS AND IN-HOUSE DOCUMENTS

● *"Ecological Economics for Sustainable Development"*

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Academic Foundation
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● *"Interdisciplinarity in Environmental Research:
Concepts, Barriers and Possibilities" (Proceedings
of the Workshop on Methodological Issues in
Interdisciplinary Research on the Environment)*

Editors

S. LELE
GOPAL K. KADEKODI
BINA AGARWAL

● *Narrative Report*

On

Round Table

On

"WATER POLICY ISSUES"
Held in
New Delhi, May 2002

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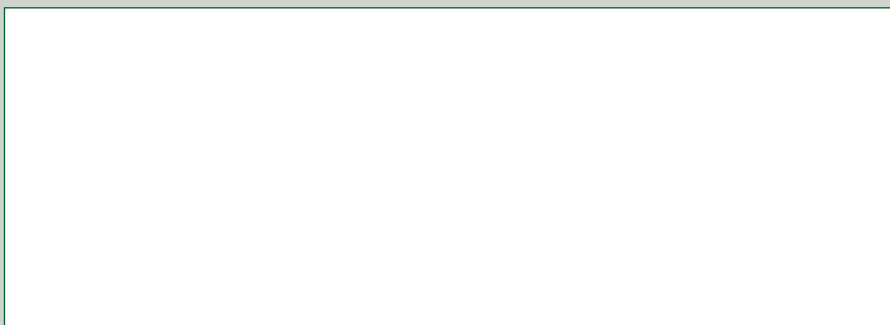
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