Annual Report 2005

South Asian Network for Development
and Environmental Economics

South Asian Network for Development
and Environmental Economics

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SANDEE researchers, and resource persons at the
Research and Training Workshop in Waikkal, Srilanka

Message from the Program Director

Dear Friends and Colleagues:

In early 2005, South Asia was still reeling from the aftermath of the Tsunami. Hurricane Katrina brought home again the extreme vulnerability of coastal communities to natural disasters. The coastal poor remain particularly defenseless to both sudden natural changes and to gradual erosion of resources and resource-dependent livelihoods. But, how do we prioritize amongst the different ecological and economic problems faced in coastal areas? And, what kind of research can help meet the challenges of coastal zone management? My introduction of this annual report dwells on these issues.

In March 2005, SANDEE and Madras School of Economics brought together thirteen experts from around South Asia to consider how coastal communities respond to risks associated with natural disasters and what public policies can reduce the costs of coastal degradation. Based on these discussions, SANDEE added a new area of grant support. Some key issues that will be addressed in the next few years are described below:

- Coastal Policies and economic incentives: Who bears the costs of actions taken to reduce vulnerability to disasters? What are the costs of non-compliance in terms of impacts of natural disasters? What are appropriate criteria for set-back zones? What are the economic costs of decreased development in high risk zones?

- Decentralization and coastal management: Can responsibility for coastal management be devolved to lower levels of governments? What functions can be undertaken at the village,

municipal, district and state levels? What are some economic instruments that can be used to regulate coastal development?

- Community adaptation: What incentives and dis-incentives lead to in-efficient use of coastal resources, particularly fisheries? How and to what extent do disaster relief and re-construction efforts exacerbate inefficient resource extraction? What is the role of collective action mitigating the effects of coastal and riverine disasters?

- Market strategies: What is the role of insurance markets in responding to natural disasters? What data, policy and regulatory changes are required to strengthen insurance markets? What are other market strategies that can help communities to pool risks?

- Natural and infrastructural barriers: What is the role of natural barriers and the services they provide in mitigating slow and rapid-onset disasters? How can we value these services? What are some un-expected costs of man-made barriers? What incentives do communities have to maintain infrastructural and natural barriers?

Another significant change in 2005 is the departure of our long-time colleague Mr. Manik Duggar at the end of the year. He moved to Canada to pursue new interests and we wish him all the very best.

As for the rest, 2005 was a good year with two biannual workshops, three training workshops and many publications from SANDEE associates. Please read on to find out more.

With every best wish
Priya Shyamsundar

Research Support

SANDEE has a biannual small grants program which supports South Asian researchers working in the field of environmental and natural resource economics. Researchers meet twice a year to present their progress and new research projects and discuss research methods with peers and senior colleagues from the region and around the world. Research support to the researchers in the region is one of our core activity.

SANDEE made 13 grants in 2005, including 2 conditional grants.

Cycle 10 (July 2005)

Economic Valuation of Health and Agricultural Impacts of Households: Case of Cement Air Pollution in Puttalam District of Sri Lanka, C. Bogahawatte and H.M.S.J.H. Bandara, Sri Lanka

Even though the problem of air pollution is often associated with metropolitan areas, certain natural resource based industries operating in suburbs or rural areas also cause air pollution. In his study, the researchers will try to investigate the impact of rural air pollution caused by a large cement factory in Puttalam district of Sri Lanka. This research seeks to estimate the magnitude of pollution impacts on health and agricultural productivity for households in proximity of the cement factory. The researchers will also assess how changes in pollution standards can contribute to better health and improved agricultural production.

Poverty, Environment and Microcredit: An Assessment of the Micro-credit Based Social Forestry of Proshika in Bangladesh, M. Jahangir Alam Chowdhury, Bangladesh

Long-term sustainability of micro-credit based social forestry programs will depend on their capacity to alleviate poverty. The poor are likely to lose interest in participating in such programs if they do not generate adequate income. In this study, Jahangir will examine the impact of 'Proshika,' a micro-credit program that seeks to improve the environment through social forestry and reduce poverty. The study will be based on a careful use of quantitative program evaluation tools.

Economic Valuation of Storm Protection Function: A Case Study of Mangrove Forests of Orissa, Soudamini Das, India

The role of mangrove forests in providing protection to the lives and properties of coastal communities during natural calamities such as cyclones is well-known. However, there has been no systematic attempt to value this crucial protective service. In this study, Soudamini aims to evaluate the storm protection function of mangrove forests and compare it with the storm protection value of Casurina forests that are planted by the government as cyclone buffers. She also seeks to compare the relative costs of different anti-cyclone measures.

An Economic Evaluation of the Effects of Effluent Water Discharged from Raw Natural Rubber (NR) Manufacturing Industries on Human Health in Sri Lanka, Jagath Edirisinghe, Sri Lanka

Natural rubber manufacturing industries discharge the effluents generated during rubber production into natural waterways without much treatment, thus posing threat to human health. In this study, Jagath will identify the health impacts of such effluents and will estimate the costs of abating effluents.

Vulnerability of Indian agricultural farmers to climate change and globalization, K. S. Kavi Kumar, India

This proposal brings together two important issues that concern Indian agriculture in the future – global climate change and globalization. The study seeks to examine different strategies that might effectively reduce the vulnerability of Indian farmers to these combined forces. Kavi

Kumar proposes to use an agent based social simulation model to analyze the effectiveness of existing mechanisms to reduce farmer vulnerability.

Community Forestry and Poverty Reduction in Nepal, Ridhish Pokharel, Nepal

Nepal's community forestry program was originally initiated in order to achieve the national goal of poverty reduction. But, despite two decades of successful implementation, the program's contribution to poverty alleviation is far from satisfactory. In this study, Ridhish seeks to examine how community forestry funds, which are established through the collection of fees, fine and donations, contribute to poverty reduction. Investments made from these funds will be carefully scrutinized as well as the factors that contribute to these investments.

R & T, Colombo, Srilanka

The Productivity of Pesticide in Cole Crops Production: A Case Study of vegetable production pockets of Bhaktapur Districts of Nepal, Ratna Kumar Jha and Adhrit Regmi, Nepal

Several studies have claimed that the use of pesticide for pest control in production system is unsustainable. In this study, Ratna Kumar will examine the contribution of pesticide to crop yields and identify the determinants of pesticide use in Cole crop production. The study also seeks to find out how farmers perceive pests and assess their beliefs and practices related to crop protection problems. This study will directly contribute to Nepal's pesticide policies since one of the principal investigators is part the Plant Protection Directorate of the Ministry of Agriculture.

Cost Benefit of Indoor Air Pollution Control Initiatives in Nepal: A Case Study at Rashuwa District, Min Bikram Malla Thakuri, Nepal

The smoke caused by household burning of biomass as fuel is one of the four leading causes of death and disease in the world's poorest countries. A number of measures have been developed and disseminated that aim to reduce exposure to indoor air pollution. While the physical impacts of adopting an intervention, such as reduced emissions or improved fuel efficiency can be observed directly, the value in terms of monetary benefits is less evident. This study aims to generate empirical evidence on the costs and benefits of specific indoor air pollution control initiatives in rural Nepal that have provided households with different types of stoves and chimneys.

Cycle 11 (December 2005)

Valuing the impact of diarrhoea on child health in slums in Bangladesh, Md. Jahangir Alam, Bangladesh

Contaminated drinking water and poor sanitation facilities are a major cause of diarrhoea, a common water-borne disease among slum children in Bangladesh. In this study, Jahangir will assess the welfare gains to slum households from avoiding diarrhoeal attacks among children. This empirical analysis will provide policy inputs to planners, international organizations and domestic NGOs and help identify the benefits of some specific slum intervention programs.

Health benefits from reducing air pollution in Dhaka city, Tanzir A. Chowdhury and Mohammad Imran, Bangladesh

The air quality of Dhaka city is deteriorating at an accelerating rate due to hazardous vehicular emissions. Vehicular air pollution is one of the major causes of many diseases like irritation, headache, fatigue, asthma, high blood pressure and heart problems. In this study, Tanzir and Imran will estimate the benefits to the citizens of Dhaka from a reduction in air pollution to safe levels, using a dose response function and cost of illness approach. The study will generate significant inputs for transport analysts and policy makers, who are considering strategies such as introduction of CNG and a metro system in Dhaka.

Willingness to Pay for Reducing Pollen Allergy in Islamabad, Shabib Haider Syed, Pakistan

The mulberry tree, commonly found all over Islamabad, is now understood to contribute significantly to pollen pollution, which has become a major problem in recent years. Pollen pollution is a source of respiratory allergies and asthmatic attacks, which are on the rise. In this study, Shabib will estimate the value that residents of Islamabad place on clean air and what they are willing to pay reduce pollen contamination. He will try to identify least cost solutions that the government can take up in order to mitigate the effects of pollution, keeping in mind residents' willingness to pay.

R & T, Bangalore, India

Energy planning and poverty reduction in Nepal-India region. Y. B. Thapa, Nepal (Conditional Grant)

Nepal has no sources of commercial energy such as fossil fuels but has significant hydropower potential, which is utilized at a below optimal levels. Nepal and India have been trying to co-operate on water and energy related issues for many years, yet there is much that remains unclear and more that can be done to benefit both countries. The proposed study seeks to examine macroeconomic linkages between Nepal and India in order to assess the impact of greater cooperation in energy planning. Using macro-models, it will assess the implications of inter-connected power systems on energy prices, use and on economic growth in Nepal.

Timber logging in Pakistan's northern areas: a market based approach to conservation, Moeed Yusuf, Pakistan

Pakistan's woody biomass is disappearing at a rate of 4-6% per year. In large part, this is a result of excessive timber felling motivated by high timber prices. In this study, Moeed seeks to develop a market-based instrument for reducing deforestation. He will study the market for imported timber, identify an appropriate tariff structure and examine whether imported timber can be competitive. The premise of the study is that rationalization of import duty could play a role in stemming timber logging in Pakistan.

EE Workshop, Bangalore, India

Research Grants 2005

S. No.	Research Topic	Principal Investigator	Institution	Country	Starting Date	Duration
Cycle 10 – Summer 2005						
1.	Economic valuation of Health and Agricultural Impacts of Households: Case of Cement Air Pollution in Puttalam District of Sri Lanka	Bogahawatte C / Bandara Herath	Faculty of Agriculture, University of Peradeniya	Sri Lanka	Sept. 2005	12 months
2.	Poverty, Environment and Microcredit: An Assessment of the Micro-credit Based Social Forestry of Proshika in Bangladesh	Chowdhury M. Jahangir Alam	Department of Finance,University of Dhaka	Bangladesh	Sept. 2005	12 months
3.	Economic Valuation of Storm Protection Function : A Case Study of Mangrove Forests of Orissa, India	Das Saudamini	Institute of Economic Growth	India	Sept. 2005	24 months
4.	An Economic Evaluation of the Effects of Effluent Water Discharged from Raw Natural Rubber (NR) Manufacturing Industries on Human	Edirisinghe Jagath	Wayamba University of Sri Lanka	Sri Lanka	Sept. 2005	18 months
5.	The Productivity of Pesticide in Cole Crops Production: A Case Study of vegetable production pockets of Bhaktapur Districts of Nepal	Jha Ratna Kr.	Centre for Rural Development and Self-Help	Nepal	Sept. 2005	15 months
6.	Vulnerability of Indian agricultural farmers to climate change and globalization	Kumar K. S Kavi	Madras School of Economics	India	Sept. 2005	18 months
7.	Community Forestry and Poverty Reduction in Nepal	Pokharel Ridish	Institute of Forestry	Nepal	Sept. 2005	15 months
8.	Cost Benefit of Indoor Air Pollution Control Initiatives in Nepal: A Case Study of at Rashuwa District	Thakuri Min Bikram Malla	Practical Actions, Nepal	Nepal	Sept. 2005	12 months
Cycle 11 – Summer 2005						
1.	Valuing Impact of Diarrhea on Child Health in Slum: Evidence on Water and Sanitation	Alam Md. Jahangir	BRAC University	Bangladesh	Feb. 2006	12 months
2.	Valuing Health Benefits of Air Pollution Reduction in Dhaka City: Cost of Illness Approach	Chowdhury Tanzir and Mohammad Imran	BRAC University	Bangladesh	Feb. 2006	14 months
3.	An Analysis of Willingness to Pay for Pollen Allergy In Islamabad	Syed Shabib Haider	Forman Christian College	Pakista	May 2006	18 months
4.	Energy Planning and Poverty Reduction in Nepal-India Region: A Synthesis of Macro-Link and Input-Output Analysis(Conditional Grant)	Thapa Y. B	Himal Energy Development Company Pvt. Ltd.	Nepal	May 2006	18 months
5.	Timber Logging in Pakistan's Northern Areas: A Market Based Approach to Conservation	Yusuf Moeed	Sustainable Development Policy Institute	Pakista	Feb. 2006	12 months

Biannual Workshops

SANDEE has a biannual small grants program, which supports South Asian researchers working in the field of environmental and natural resource economics. This is SANDEE's most important task. Based on a very competitive process, researchers are invited to two meetings every year to either present on-going research or to defend new research ideas. Researchers meet to discuss research methods with peers and senior colleagues from the region and around the world.

a) Tenth Biannual Research and Training Workshop, July 2005

The tenth biannual research and training workshop was held in Manipal County Hotel, Bangalore, India from the 22nd -26th of July, 2005. The workshop included three plenary sessions and four days of parallel sessions on ongoing projects and new proposals. The plenary session included the following presentations.

Dr. Shanta Devarajan, Chief Economist, South Asia Region, World Bank presented a paper on 'South Asian Surprises'. He discussed the economic growth in South Asia inspite of various country level setbacks. He analyzed the reasons for this and emphasized that policy reforms that have played a major role in this growth.

Two panelists contributed to our understanding of coastal zone issues. U. Sankar, Professor Emeritus, Madras School of Economics, discussed the role of insurance in natural disaster. He identified problems and possibilities of using insurance mechanisms to mitigate risks faced by coastal communities. Dr. Muhammad Ali, Environment Research Officer, Ministry of Environment and Construction, presented an analyses of the Tsunami impact on Malawi. He discussed the role of natural and man-made barriers and formation in mitigating the effects of natural disasters.

Dr. Subhrendu Pattanayak, of the Research Triangle Institute, discussed the nature of eco-system services and the methodological complexities associated with valuing these services. His talk focused on a study of the Ruteng Park in Flores, Indonesia. Dr. Pattanayak's presentation discussed the physical linkages between deforestation and farm output and the economic methods for valuing the welfare impacts of deforestation. His detailed presentation of empirical techniques allowed SANDEE associates to glean many insights into doing careful empirical research.

b) Eleventh Biannual Research and Training Workshop, December 2005

The eleventh biannual research and training workshop was held in Club Hotel Dolphin, Waikal, Sri Lanka from the 14th -18th of December, 2005. The workshop included two plenary sessions, one data management class and four days of parallel sessions on ongoing projects and new proposals.

Prof. Enamul Haque gave a lecture on data management. This lecture was a response to a request from SANDEE associates who are presently collecting data. The talk focused on data handling, entry, data coding, techniques for checking accuracy, methods for building data-bases and so on. This session helped in thinking through how to keep data organized in a scientific manner in order to save time and avoid errors.

Dr. Susmita Dasgupta, World Bank, discussed the widespread problem of indoor air pollution in rural households in Bangladesh. The major causes of indoor air pollution are choice of cooking fuel, lack of proper ventilation and choice of construction materials. Based on a recent study, she recommended changes in cooking location, constructions material and ventilation practices for reducing average household pollution level.

Dr. Mohan Munansinghe, MIND, Sri Lanka presented a plenary session on 'Integrating environmental issues in sustainable development strategies'. Dr. Munasinghe provided a broad overview of sustainable development concerns that matter for developing countries.He discussed a variety of tools and methodologies that can be used for achieving sustainable development goals. His talk covered broad social and environmental policy issues as well as current debates related to climate change.

SANDEE Working Papers and Policy Briefs

Land Degradation and Migration in a Dry Land Region in India, Amita Shah, SANDEE Working Paper No. 10-05

Using Traditional Knowledge for Commercial Innovations: Incentives, Bargaining and Community Profits, K. Aparna Bhagirathy, SANDEE Working Paper No. 11-05

The Trade-Off among Carbon Emissions, Economic Growth and Poverty Reduction in India, V. P. Ojha, SANDEE Working Paper No. 12-05

Land-use Strategies, Economic Options and Stakeholder Preferences: A Study of Tribal Communities in Forest Peripheries, Seema Purushothaman, SANDEE Working Paper No. 13-05

Industrial Pollution - Can the News Media Influence Change?, Vinish Kathuria, SANDEE Policy Brief No. 6.

Valuing Life and Limb: Understanding the Risk-return Trade-off, S. Madheswaran, SANDEE Policy Brief No. 7

Danger Dirty Water! An Assessment of the Importance of Information in Improving Water use Hygiene, Jyotsna Jalan and E. Somanathan, SANDEE Policy Brief No. 8

Sharing Traditional Knowledge for Commerce - the Power of Bargaining Strength, by K. Aparna Bhagirathy, SANDEE Policy Brief No. 9

Understanding migration – do the commons matter?, Amita Shah, SANDEE Policy Brief No. 10

Can India afford to tackle global warming? – A peek at year 2020, Vijay Prakash Ojha, SANDEE Policy Brief No. 11

Taking Research Forward

SANDEE 's research guidelines focus on the link between poverty and environmental change and the need to understand analytically how these connections matter in order to be able to meet the millennium development goals. Some examples of on-going impacts of SANDEE activities and policy-dialogue undertaken by SANDEE researchers are presented below:

SANDEE Fellow, Rucha Ghate has joined a state-level committee set up to modify the Maharashtra State Government Resolution 2003 on Joint Forest Management (2005-2006), where she will use insights gained from SANDEE research to re-work the JFM resolution. She has also been invited to join a Women Core Group engaged in state level discussions on "Joint forest management and the need for equal participation of women."

Rucha Ghate, Arabinda Mishra and Pranab Mukhopadhyay, three SANDEE grantees, joined hands and undertook a needs assessment of tribals in forest areas in the central region of India for the World Bank. They wrote an influential report on tribal perceptions and economic needs, which was sought as input into a multi-stake holder workshop and dialogue between three states.

Dr. Madheswaran advised government officials and faculty members of the VV Giri National Labour Institute on the usefulness of the value of statistical life as a tool for risk assessments. Madheswaran's ideas on the how the value of statistical life can be used in programs that affect occupational safety and environmental health were well received and generated considerable discussion among members of this Indian government organization. This

work is likely to get included in teaching and practice promoted by the VV Giri National Institute, which has considerable influence on labour related matters in India.

The policy impact of Arabinda Mishra's research is being felt in a subtle but sustained manner among policymakers. He teaches at a full-fledged MA programme on Public Policy for Sustainable Development for middle and senior level (10 to 25 years of work experience) civil servants of the Government of India and Arabinda uses his research work as a case study and this has proved to be an extremely popular and enriching experience for the participants.

Vinish Kathuria discussed his work on industrial pollution control and the role of the media with officers from the Tamil Nadu Pollution Control Board, Department of Environment, and National Environmental Engineering Research Institute and others recently in Chennai. The institutional constraints to pollution control were of particular interest to this group of policy makers, who agreed that some of the institutional fixes promoted by Vinish could be considered. These discussions got wide spread publicity the next day, when a national daily newspaper, the Hindu, ran a story on the importance of polluter pays principle with a headline saying "Rational charge system a must to sustain effluent treatment plants."

Seema Purushothaman is executing the next phase of the SANDEE project. She is working with the Asoka Trust for Ecology and Environment (ATREE) to undertake a regional land use study in order to identify the major policy drivers of sustainable changes in land uses. The insights gathered in her SANDEE research also has implications for the controversial Schedule Tribe (Recognition of Land Right) Bill-2005 being discussed in the Indian parliament. Recently, after an in-house discussion, a series of recommendations were made by ATREE to the task force set up with the Ministry of Tribal Affairs.

Amita Shah is using her SANDEE study in ongoing policy dialogue related to revising guidelines for Watershed Development Projects in India. Amita Shah is a member of a consortium called Forum for Watershed Research and Policy Dialogue. Under its aegis, she organized a consultative meeting with the Technical Committee on Viable Strategies/ Mechanisms for Meaningful Implementation of DPAP, DDP and IWDP schemes. On a separate occasion, the Committee invited Amita for consultation at the Ministry of Land Resources.

Publications and Presentations

1. Published journal articles

1. Adhikari, B. (2005), 'Poverty, property rights and collective action: understanding the distributive aspects of common property resource management', Environmental and Development Economics 10 (1):7-31.

2. Mukhopadhyay, P. (2005), 'Now that Your Land is My Land…Does it Matter? A Case Study in Western India', Environment and Development Economics 10(1): 87-96.

3. Atreya, K. (2005), 'Health costs of pesticide use in a vegetable growing area, central mid-hills, Nepal', Himalayan Journal of Sciences 3(5): 83-86.

4. Purushottaman, S. (2005), 'Land-Use Strategies for Tribals: A Socio-Economic Analysis', Economic and Political Weekly, 31st Dec: 5611- 5619.

5. Mukhopadhyay, K. (2005), 'Sustainable Industrial Development in Urban areas of West Bengal: A case study of Durgapur', International Journal of Sustainable Development 2(1): 123-139.

2. Chapters in book

1. Balasubramanian, R. and C. Chandrasekaran (2005), 'Poverty, Livelihood Options and Environmental Degradation: Exploring Their Linkages and Designing Policies for Conservation of Irrigation Tanks in South India', in Paul Steele (Ed.) *Poor People, Power and Ecosystems: Experiences from Across Asia*, A ADB-IUCN joint publication.

3. Working Papers

1. Gupta, U. (2005), 'Valuation of Urban Air Pollution—A case Study of Kanpur Nagar', IEG discussion paper, Series No. 96 / 2005

4. Presentations

1. Haripriya, G. S. (2005), 'Controlling Pollution from an Industrial Estate', presented by G.S. Haripriya and Vinish Kathuria in 5th Methods and Models in Economics (MME) Conference 28th -30th Dec. at Indian Statistical Institute, Kolkatta.

2. Mukhopadhyay, K. (2005), 'An Output Distance Function Approach to Estimation of Air Pollution Abatement Cost of an Industrial Complex in India: A Case Study of Durgapur', presented at the 41st Annual Conference of 'The Indian Econometric Society', Jadavpur University,20 -22.

3. Somanathan, E. and J. Jalan (2005), 'The importance of being informed: experimental evidence on the demand for environmental quality', presented in Global Development Network's 6th Annual Conference in Dakar, Senegal on 25th Jan. 2005.

Proposal Writing Workshop, Islamabad, Pakistan

Training Activities

Capacity Building and Training Support

SANDEE organized three training courses in 2005 in partnership with a few regional and international organizations. SANDEE's training workshops are organized with the objective of developing individual capacity in environmental and natural resource economics in the region. The training also aims to increase the number of South Asian professionals who can use economic tools to analyze environmental problems and teach these tools to other colleagues.

Policy Research and Proposal Writing Workshop in Environmental Economics, Pakistan
16th -19th May, 2005

In 2005, SANDEE joined hands with IUCN – The World Conservation Union, Pakistan, and organized policy research and proposal writing workshop in environmental economics in Islamabad, Pakistan. One of SANDEE's aim is to influence policy-making in South Asia with the help of environmental economics' tools and techniques. The main objective of this workshop was to introduce economists to key policy concerns in environmental economics and to enable the participants to develop skills required to prepare serious research proposals in this area. Sixteen participants from Pakistan attended the Islamabad workshop. The faculty at the workshop included Dr, Shreekant Gupta, Delhi School of Economics, India, Dr. Sajjad Zohir from Bangladesh, Dr. Rehana Siddiqui from Pakistan, Dr. Bhim Adhikari and Mr. Usman Iftikhar from IUCN Pakistan and IUCN Sri Lanka respectively.

An Introductory Course in Environmental and Natural Resource Economics for Economists, 1st -20th July, 2005

SANDEE, jointly with Institute for Social and Economic Change (ISEC), organized a three-week basic training course in environmental and natural resource economics for economists, in Bangalore, India from 1st -20th July, 2005. The course was meant for economists interested in upgrading their skills and learning related to environmental and natural resource economics. The course covered a variety of topics related to poverty, economic development and environmental change.
Twenty-four participants, mainly young researchers, teachers and EE practitioners from the region attended the workshop. Faculty included experts from within and outside the South Asia region. Dr. Enamul Haque, East-West University, Dhaka, Dr. Rabindranath Bhattacharya, Kalayani University, and Dr. Puran Mongia, Delhi School of Economics were the core faculty. Several faculty including Dr. Gopal Kadekodi, Institute for Social and Economic Change, Bangalore, India, Professor Partha Dasgupta from Cambridge University, UK and Dr. Shanta Devarajan the World Bank gave additional lectures.

EE Workshop, Bangalore, India

An Advanced Training workshop on Econometric Methods, Sri Lanka, December 9th-12th, 2005

SANDEE generally organizes one advanced research workshop based on the demands put forth by researchers. In 2005, we organized a workshop on econometric methods. The workshop focused on discrete choice analyses and simultaneous equation models. At the end of this course, the participants were able to independently analyze and interpret data using a popular econometric package that many researchers wanted to learn.

Twenty-three participants attended this course; most of the participants were SANDEE research associates. This course was designed for SANDEE research associates who have a basic understanding of econometrics (theory and application). The primary faculty were Prof. T. Krishna Kumar, Retired Professor, Economic Analysis Unit, Indian Statistical Institute, Bangalore and Dr. K. R. Shanmugam, Madras School of Economics, Chennai, Madras, India.

Advanced Econometric Workshop, Colombo, Srilanka

New Projects

Nepal Capacity Development Program in EE

In order to strengthen the capacity of environmental economics in academic institutions in Nepal, SANDEE launched the Nepal Capacity Development Program in environmental economics. Building on an initial scoping exercise, SANDEE organized a needs assessment workshop at Jadavpur University, Kolkata, India in March 2005. Ten faculty and experts representing several Nepalese institutions (including economics, agriculture, forestry and environmental science and management) attended this workshop. As a result of the workshop, participants agreed to discuss with their respective institutions changes in curriculum and development of semester length modules in environmental and natural resource economics and forest economics. SANDEE jointly with Kathmandu University also organized a curriculum development workshop as a follow up. The faculty and several resource persons engaged in an intensive two-day workshop to develop curriculum appropriate for environmental economics for their respective institutions.

Nepal Capacity Development meeting, Jadavpur University, Kolkatta, India

Coastal Communities and Natural Disasters, Experts Discussion, Chennai, India, March 2, 2005

The Tsunami disaster (December 26, 2004) highlighted the extreme vulnerability of coastal communities, particularly fishermen to natural disasters. SANDEE organized a workshop on this issue in order to consider how vulnerable coastal communities respond to risk and uncertainty and what public policies can help decrease the cost of disasters. Thirteen experts from the South Asian Region (Bangladesh, India, Sri Lanka and Maldives) shared their views in the brainstorming session. SANDEE began a new area of grants related to coastal communities, natural disasters and environmental change based on the recommendations from this workshop.

Managing the Commons of South Asia

SANDEE will publish an edited book on common property respource management and institutions entitled 'Promise, Trust and Evolution: Managing the Commons of South Asia.' The book is edited by two former grantees (Rucha Ghate and Pranab Mukhopadhyay) and a former advisor (Narpat Jodha) to SANDEE and brings together SANDEE research projects and work by various advisors. It examines the current status of the institutions that govern common property resources in South Asia. The papers cover a wide range of institutional settings and resources – forestry, water, land management – in different countries. In November 2005, the editors and several authors were hosted by the International Center for Theoretical Physics in Trieste, Italy for a writing and manuscript review workshop. The papers in the book are in their final stages and negotiations for publication are on-going with Cambridge and Oxford University Press.

Networking and Information Dissemination

SANDEE Newsletters

SANDEE published two newsletters in 2005 (No. 10 and No.11). The newsletters reports on SANDEE activities and analyze key environmental policy issues in the different countries in the region. Young economists and researchers are given an opportunity to publish interesting analysis. The newsletters also serve as a reliable means for information dissemination about environmental economics and new developments around the world. The newsletters are available in our website free of cost.

Website, Database and List-Serve

SANDEE's website hosts a wide range of information for environmental economists around the world. The information varies from SANDEE related activities to information on international organization. The website is also very useful to young researchers as it provides valuable information on techniques for research and writing. The website gives information about international organizations and institutions working in the field of environmental economics. Teachers can also avail information related to teaching tools and techniques.

An online database provides a forum for South Asian researchers to interact with each other and share academic achievements. Online membership is free of costs for individual members but institutional members within the region have to pay the equivalent of US$ 50 per year as a membership fee while international organization have to pay US$250.

Bibliographies

Quality research output is achieved through access to appropriate and adequate information in the relevant area of one's research. Lack of information regarding research ideas and publications is a major setback for those SANDEE researchers who cannot access relevant reading material because of lack of good libraries as well as lack of adequate resources in environmental economics in the region. This has been a key constraint, so SANDEE regularly develops bibliographies in

environmental economics related topics for the researchers. In 2005, we published two new bibliographies. These are:
1. Economics of Solid Waste Management
2. Economics of Water Pollution

The detailed references associated with these bibliographies are available to SANDEE researchers and course participants.

Questionnaires on the web

The questionnaires developed and used by completed and ongoing SANDEE projects are uploaded in the website. This helps the new researchers in developing their questionnaire using this as a reference. We have six sets of questionnaires from completed research projects uploades in eth website. We have also uploaded a set of ‘ Model Questionnaires’ that can be sued with modification by researchers for their work. This set of model questionnaire is primarily intended for researchers involved in studying rural livelihoods.

Governance and Organization

SANDEE operates with the support of a small secretariat based in Kathmandu, Nepal and a governing board of researchers, donors and practioners. We are a virtual network that is anchored by the secretariat, providing administrative support, and the biannual meetings in different parts of South Asia, providing technical support.

The Secretariat

SANDEE is administered with the help of a small staff. The secretariat staff includes:

- Priya Shyamsundar, Program Director
- Manik Duggar, Program Manager*
- Kavita Shrestha, Administrative Officer
- Anuradha Kafle, Research and information Officer
- Sunita Khanal, Account Assistant

* Mr. Duggar is now no more with SANDEE.

Management and Advisory Committee

1. Dr. A.K. Enamul Haque, Professor, East West University, Bangladesh
2. Anna Maria Oltorp, Swedish SIDA Representative
3. Dr. David Glover, Director, EEPSEA, (IDRC Canada Representative)
4. Prof. Jeffrey Vincent, Professor, Graduate School of International Relations and Pacific Studies, University of California at San Diego, USA
5. Prof. Karl-Goran Maler, Director, Beijer International Institute of Ecological Economics at the Royal Swedish Academy of Sciences, Sweden
6. Lucy Emerton, Head, Ecosystems and Livelihoods Group 2, IUCN – The World Conservation Union, Asia
7. Sir Partha Dasgupta, Frank Ramsey Professor of Economics, Cambridge University, UK
8. Dr. Priya Shyamsundar , Program Director, SANDEE
9. Dr. Shanta Devarajan, Chief Economist, South Asia Region, The World Bank, Washington
10. Dr. Rehana Siddiqui, Professor, Pakistan Institute of Development Economics, Pakistan

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5. Madras School of Economics, MSE, Chennai, India
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Experience shared by SANDEE colleagues

Sundarbans: the undoing of a successful collective action model

Indrila Guha and Santadas Ghosh

Sir Daniel Hamilton, a legendary figure in the Indian Sundarbans, was not a typical member of the British ruling class. Hamilton had some noble ideas about developing a community of poor people on the basis of mutual co-operation. He set up an experimental laboratory in the most inaccessible and hostile secluded land one can think of in Bengal some hundred years ago – the vast mangrove forest of Sundarbans. The issue of conservation yet to surface, he took three islands from the British authority on a long-term lease for developing human settlements – an unusual move at a time when population pressure was hardly significant in the mainland. He invited some of the poorest indigenous forest communities of mainland (*adivasis*) to settle there with an incentive package consisting of some land to be cleared by themselves and a food ration for one full year during a family's first year of living.

These islands of thick mangrove forest, hundreds of which make up the largest mangrove delta in the world, are one of the most dangerous and un-inhabitable places one can think of. Apart from the danger of various hostile creatures like crocodile and snake, the abundance of Royal Bengal Tigers was the single most deterrent against human settlement. But capping it all was the requirement of massive raw human labour to make the land cultivable. This is because a very small part of the surface of these deltaic islands keeps above water level at high tide. Salinity allows nothing but mangroves to grow. No possibility of growing food crops unless the land is kept out of reach of the river water for a considerable time and successive rainy seasons dilute the salinity.

Hamilton's plan called for building and regular upkeep of earthen dikes all around the islands, sufficiently high and wide to withstand the onslaught of high tides twice a day and waves created by winds/storms. Making such efforts obviously called for a unique community cooperation model with private property surviving on community cooperation. This model was so successful that it soon spread to other adjoining islands that were not reserved for conservation.

The island of *Gosaba*, where Hamilton's mission started, now hosts in its one corner almost all the Sundarban bound tourists staying for a couple of nights. Our study being related to

Sundarbans' tourism, we had extensive talks with the local stakeholders and villagers over more than a year. The most unsettling and common story now is that of the erosion of these earthen dykes and the near total collapse of this lifeline in all the islands. The simple reason is the gradual waning of community cooperation.

After independence, the significant population presence on inhabited Sundarban islands lead to the establishment of the Department of Sundarban Affairs of the West Bengal Government. The Sundarban Development Board was set up as a nodal facilitator for all developmental works in Sundarbans, with the Department of Irrigation taking over the upkeep of the dykes. Interestingly, this intervention by the State alienated the local population. It introduced contractors and interests groups and gave them all sorts of decision-making power. Now dyke maintenance is an occasional patchwork of activities and is mostly taken up *ex post*, after dykes are breached and locals are displaced.

In the Sunderbans, an apparent paradox has occurred. An outside agency stepped in with the intention of taking care of local problems, but in the process alienated the very stakeholders who were the subjects of concern. The very existence of a designated government agency acted as deterrence and stopped people from cooperating in advance to maintain the dykes. The crucial social psychology of cooperative living gradually fell apart over four decades. Now, an important research issue is to discover the underlying common link that may re-establish the right kind of institutions that can enhance co-operation and stem free riding by community members.

Ibex: an Agent of Economic Change, The Case of Karambar Valley, Ghizer Pakistan

Marriyum Aurangzeb, Pakistan

Hunting of wild animals is usually seen as an unsustainable practice for both environmental conservation and human well-being. The Karambar valley of Pakistan has however taken up hunting as a sustainable practice from the view of environmental conservation and livelihood generation for the local communities. The Karambar valley covers an area of 640 square kilometres in the Ghizar District of Pakistan's Northern Areas and is one of the poorest areas in the world. The people are farmers and herders and the majority of the valley's population lives below the poverty line. It has lately been realized that farming could never generate income enough to achieve the desired social, economic and environmental goals.

In such circumstances, the residents of the valley introduced the concept of trophy hunting of the Himalayan ibex in the valley. The Himalayan ibex is a species of wild goat, found abundantly in these mountain ranges. This experiment was first conducted in the neighbouring Bar valley, in 1989 with partnership among community organizations, NGOs and the Government. The WWF-Pakistan had also played a leading role. The First licenses to hunt ibex in the Bar Valley were issued in October 1996 and Rs. 244,000 (about US $ 4500) got generated through the exercise.

Inspired by this, 14 villages of the Karambar Valley got together to create the Karambar Social Welfare and Conservation Organization (KSWCDO) to start the process of legal Trophy Hunting of the Himalayan ibex in their own valley. In addition, a Conservation Fund and Permanent Endowment Fund were established dedicated to future earnings. During the period from 1998-2004 a total of 10 trophy hunting permits were issued by the Government to the Karambar valley community.

The community consequently earned Rs. 388,400 by using 90 per cent of the permits. The money generated from trophy hunting was pooled into a fixed account and the interest earned from this conservation endowment fund was subsequently transferred into a revolving account. The income generated was spent on conservation, development and administrative cost in the ratio 55%, 30% and 15% respectively. In this way, the income of the trophy-hunting programme was utilized for conservation of the Himalyan ibex along with other faunal species. Therefore, there is a trade-off between conservation and development that has laid the foundation of sustainable development in terms of development as a reward of conservation.

With the funds generated, the Karambar Valley community has been able to promote traditional “patti” by installing looms for local artisans and by establishing a resource center where local artisans prepare handicrafts and embroidery products. Through developing effective linkages with the government this resource center has been able to attract a fund of Rs. 576,000 from the government for food processing units. People are employed by the center to prepare and process various kinds of jams, jelly, vinegar and dry fruits in summers and almost the same products are produced from sea buck in winter which also has a high medicinal and food value. Thus this center provides the Karambar Valley community with a sound “all season” source of income generation. The whole process has instilled a sense of ownership for the natural resource in the community. The Valley community is now conservation practitioner and custodian of wildlife and natural resources instead of the exploiter that it used to be previously.

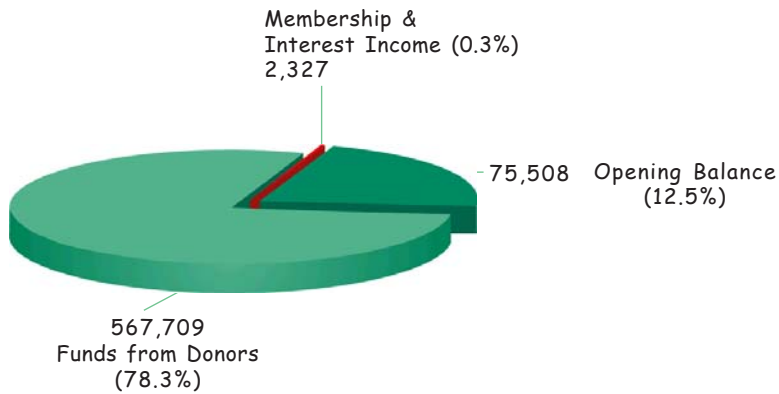
R&T, Colombo, Srilanka

Financial Information

Income and Expenditure (January-December 2005)

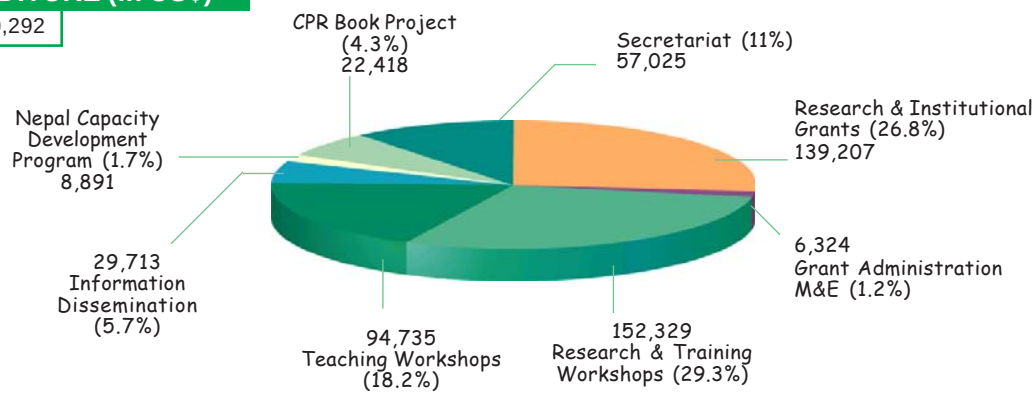
INCOME (in US$)

Total: $ 725,056



EXPENDITURE (in US$)

Total: $ 520,292



Key Environmental Indicators for South Asia 2005

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka	Region
Population (millions)	138.1	0.9	1,064.4	0.3	24.7	148.4	19.2	1,424.7
GNI per capita, Atlas method ($)	400	630	540	2,350	240	520	930	510
GDP ($ billions)	51.9	0.7	600.6	0.7	5.9	82.3	18.2	765
AGRICULTURE								
Land area (1,000 sq. km)	130	47	2,973	0	143	771	65	4,781
Agricultural land (% of land area)	70	12		33	35	35	36	55
Irrigated land (% of crop land)	54.5	24.2	33.6	--	34.5	80.5	33.3	41.2
Fertilizer consumption (100 grams/ha of arable land)	1,775	0	996	--	278	1,381	3,103	1,027
FORESTS AND BIODIVERSITY								
Forest area (% of total land area)	10.2	64.2	21.6	3.3	27.3	3.1	30.0	16.3
Annual deforestation (% change 1990-2000)	-1.3	0.0	-0.1	0.0	1.8	1.5	1.6	0.1
Forest Area (1,000sq km)	13	30	641	0	39	24	19	780
Nationally Protected Area (% of land area)	0.8	25.1	5.2	--	8.9	4.9	13.5	4.8
ENERGY, EMISSIONS AND POLLUTION								
GDP per unit of energy use (PPP $ per kg of oil equivalent)	10.5	--	5.0	--	3.8	4.3	8.0	5.1
Share of electricity generated by coal (%)	--	--	70.1	--	--	0.3	--	59.8
Electric power consumption per capita (kWh)	100	--	380	--	64	363	297	344
CO2 emissions per unit of GDP (kg/PPP $ of GDP)	0.1	--	0.4	--	0.1	0.4	0.2	0.4
CO2 emissions per capita (mt)	0.2	0.5	1.1	1.8	0.1	0.8	0.6	0.9
WATER & SANITATION								
Access to improved water sources (% of total population)	75	62	86	84	84	90	78	84
Access to sanitation in rural areas (% of rural population)	48	70	18	42	20	35	89	23
Freshwater resources per capita (cubic meters)	761	108,738	1,185	--	8,029	350	2,600	1,275
Total freshwater withdrawal (% of total water resources)	13.9	0	39.7	--	14.6	299.2	19.6	40.5
Under-5 mortality rate (per 1,000 live births)	69	85	87	72	82	98	15	92
NATIONAL ACCOUNTING AGGREGATES -2002								
Gross national savings (% GNI)	28.4	--	2408	42.7	31.6	22.7	21.7	24.9
Consumption of fixed capital (% GNI)	5.8	9.7	9.6	10.7	2.4	708	5.2	9.0
Education expenditure (% GNI)	1.3	2.4	3.9	6.1	3.2	2.3	2.9	3.5
Energy depletion (% of GNI)	2.0	0.0	2.4	0.0	0.0	3.7	0.0	2.4
Mineral depletion (% GNI)	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3
Net forest depletion (% GNI)	0.7	4.3	1.0	0.0	3.0	0.6	0.4	0.7
CO2 damage (% GNI)	0.4	0.6	1.5	0.5	0.4	1.9	0.3	1.3
Adjusted net savings (% GNI)	20.6	--	13.5	--	28.8	11.0	18.3	14.0

Source: Little Green Data Book, 2005. World Bank.

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