



Annual Report 2007



South Asian Network for Development
and Environmental Economics



South Asian Network for Development and Environmental Economics

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THE SANDEE SECRETARIAT



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Message from the Program Director

Dear Friends and Colleagues:

Another year has flown by for SANDEE - a dynamic and challenging year. Research, training and information dissemination - our three mantras were well evoked throughout the year.

One of the most important changes in the last year is the increased emphasis we gave to our 'underserved areas program.' There are parts of the region where there is very little access to research resources and capacity to undertake environmental policy analyses is seriously limited by lack of training in the fundamentals of economics. We try to support these areas with special focused programs. In 2007, thanks to Pranab Mukhopadhyay's initiative and Joyashree Roy's persuasion, we started a graduate Fellowship Program in Jadavpur University. This will allow one or two candidates from Nepal, under-served parts of India, Maldives, Bhutan and in some cases Sri Lanka, to undertake an Masters or M. Phil program in Jadavpur over the next three years. Other activities under this program are the creation of a 'resource center' within IUCN Nepal so that researchers can access reference books as well as some electronic journals, and, special training focused on the needs in Nepal.

A second important change that came about in 2007 is increased outreach to the policy community. Several SANDEE researchers interacted with policy makers on issues such as clean water, pesticide use, mangrove conservation or community forestry. They informed policy makers, reviewed policy proposals and trained them. SANDEE was also invited to address key groups of decision-makers - bureaucrats from West Bengal at an IPCC dissemination workshop and parliamentarians from across Asia who were interested in Sustainable Development. Furthermore, in a joint initiative with

UNDP and UNEP, SANDEE organized a training workshop for policy makers from Finance, Environment, Agriculture and Planning Ministries across South Asia. The workshop was designed to have policy makers think through various environmental economics concepts and instruments and discuss their viability.

As you will read inside, we have had a productive year. Our research support continues to thrive with slowly increasing interest in climate change. With five training workshops, our training docket was extremely full last year. And of course, our researchers have made us proud - we had more than ten peer-reviewed publications that emerged from SANDEE research in 2007.

I continue to be grateful to serve the SANDEE community and thank our donors IDRC, Sida and NORAD for their faith in us.

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. 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.

SANDEE made 6 grants in 2007, including 1 study grant. SANDEE, almost always, has two competitions and meetings in one year. The second meeting for 2007 was held in January 2008 and a provisional list of the grants made in this cycle is reported in this annual report.

Research Cycle 15 (July 2007)

The Fourteenth biannual research and training workshop was held in Godavari Village Resort, Kathmandu, Nepal from the 8-12 July, 2007. The workshop included four days of parallel sessions on ongoing projects and new proposals.



At the R & T
workshop, Kathmandu, July 2007

Dr. Subhrendu Pattanayak gave a plenary presentation on how climate impacts can be examined using various tools available to economists and how the results can be quite surprising. He presented a study based on Brazil that looked at health impacts of climate change using econometric modeling and then extrapolated these impacts to understand labour impacts at the national level through the use of a computable general equilibrium model. This was an interesting presentation that both brought to light different ways to study

climate impacts and identified the use of different tools.

In response to SANDEE's 15th call for pre-proposals, SANDEE received 42 pre-proposals from around the region. A rigorous review process involving SANDEE's Management and Advisory Committee and regional and international reviewers was undertaken and the following projects received grants:

Post-tsunami coastal fishery aid in Sri Lanka, Asha Gunawardena and Kanchana Wickramasinghe, Sri Lanka

The fisheries sector was adversely affected by the tsunami of 2004 and in the rehabilitation effort received considerable attention from donors. Asha intends to examine the targeting of beneficiaries, especially the distributional impact of livelihood interventions such as boats for tsunami affected fishers. The study will assess the links between tsunami interventions and current problems of fishers with reference to income, profitability, accessibility to fishing, input availability and input and output price.

Benefits and costs of air pollution regulations in Kathmandu Valley, Naveen Adhikari, Nepal

The government of Nepal has taken initiatives to improve air quality through enactment of industrial and environmental acts, vehicle emissions exhaust test, ban on three-wheel diesel tempos, introduction of electric and gas powered vehicles, import of EURO-1 standard vehicle, ban on new registration of highly polluting brick kilns, etc. Naveen will study whether environmental policies to control the air pollution in the valley have worked or not. He will also estimate benefits to different stakeholders from air pollution regulations. This could have implications for long term alternative energy initiatives in the valley.

The recreational use value of Diyawanna Oya wetland ecosystem: An application of travel cost method, by Thusitha

Dilhani Marawila and Manoj Indika Thibbotuwawa, Sri Lanka
Urban wetland eco systems generate a wide spectrum of ecosystem services. Diyawanna Oya wetland, an important recreational site in the greater Colombo area of Sri Lanka is prone to severe threats from reclamation and construction for urban development purposes. Thusitha will study the preferences of regular visitors and their willingness to conserve this endangered resource using the Travel Cost method. The findings should give directions for policy formulation on sustainable utilization and conservation of this and other urban 'public spaces'.

The relative efficiency of water use in Bangladesh agriculture, Nasima T Chowdhury, Bangladesh (Study Grant)
Water is scarce in the non-monsoon months in Bangladesh and farmers cultivating boro rice, wheat and some other winter crops have to rely on irrigation. Nasima's study grant will allow her to understand the data needs for estimating the cost of water for alternative modes of irrigation by farmers in the Northwest region (NW) of Bangladesh. This region faces severe water scarcity during the dry season due to low annual rainfall.

Valuation of the Storm Protection Services of Mangroves forests under storm surges and cyclones, Sakib Mahmud, Bangladesh
Bangladesh has been periodically hit by cyclonic storms impacting on life and property. One of the natural barriers to storm surge is the mangrove forest in the coastal areas of Bangladesh and these services of mangroves are not taken into account while deciding on land use. Sakib wishes to examine whether the mangrove afforestation efforts is an effective strategy for sustainable development.



Mangrove forests, Sundarbans

Decentralization in forest management: Changing incentives and attitudes through JFM, by Rucha Ghate, India

Joint Forest Management (JFM) not only accepts that the forest dwellers have the first claim on the resource, but also promotes their active involvement in the management of the resource. Rucha Ghate studied 23 (erstwhile) forest villages spread across Maharashtra (India) in 1985. She will revisit these villages and study whether there has been a shift in attitudes of communities and the forest department towards each other. She will also look at impacts of incentives offered under JFM including programmes for poverty alleviation.

Research Cycle 16 (January 2008)

SANDEE's general practice is to undertake two research competitions each year and to have a Research and Training workshop after each completion to finalize the grants. In 2007, we did hold two research competitions but the second workshop took place in January 2008. Thus, the list of grants mentioned below is only a provisional list and the final list will be presented in the next annual report. In response to the 16th research competition, SANDEE received 65 proposals.

The Value of Life: Evidence from Labor Markets in Pakistan, M. Rafiq, Pakistan

Rafiq plans to estimate the value of statistical life (VSL) in Pakistan using the Compensating Wage differentials among workers in Lahore facing fatal and non-fatal work-related risks. This would be the first such study in Pakistan and would help facilitate policy-making on the benefits of reducing pollution, health hazards, accident risks and other safety measures.

Motives for Firms to Adopt Solid Waste Management Controls: The Food Processing Sector in Sri Lanka, J. M. U. K. Jayasinghe, Sri Lanka

Jayasinghe proposes to study the economic incentives of Sri Lankan food processing firms to adopt solid waste management

practices. The different types of solid waste controls of a firm will be juxtaposed with with nine market-based, regulatory, and liability incentives. He hopes to use the outcome of the analysis to develop an "incentive-based regulatory framework" for Sri Lanka that would safeguard the environment without affecting the relative competitiveness of the firms. He will also test whether firms care for their reputation and therefore adopt environment friendly waste treatment mechanisms.

Alternatives to Fuel wood use in Tobacco Curing in India the Economic Feasibilities and determinants of their use, Nayanatara S. Nayak, India

Tobacco is considered a "merit bad" as its consumption has an adverse health impact and imposes a heavy burden on the economy, society and the environment. The production of tobacco also has adverse environmental impacts -- the cultivation and processing of tobacco can result in loss of forest cover, lead to gradual deforestation, and emission of CO₂ due to burning of wood. Nayanata seeks to understand if there are alternative tobacco production technologies that can reduce the damage on the environment. Karnataka state in India is one of the largest producers of tobacco. Thus, Nayanatara will study the economic feasibility of adopting alternatives to fuel wood in curing of tobacco in Karnataka, India.

Economics of Urban Drainage system: A case study of Cuttack city, Orissa, India, Jogasankar Mahaprashasta, India

Urban drainage is a major problem in Cuttack, one of the oldest and most densely populated cities of Orissa, India. Jogasankar wants to estimate the willingness to pay for better drainage systems in the city by examining the impact of improved drainage on property prices and adaptive expenditures that people make to avoid illness. This is study will inform policy makers who are currently investing in urban infrastructure about finding effective ways to finance these investments.

Valuation of an Ecosystem its Impact on Livelihood Support: The Case Study of East Calcutta Wetlands, Gautam Gupta, India

The East Calcutta Wetlands (ECW), a Ramsar site, has a fragile ecosystem and serves the city of Kolkata as an organic sewage treatment zone. The sewage is used as fish-feed in the adjacent aquaculture farms and the wastewater is used for cultivation. Close proximity to Kolkata, however, poses the threat of land conversion for property development. Gautam Gupta and Vivekananda Mukherjee will attempt to measure the economic benefits from a wetland conservation programme, estimate the degree of dependence of the local community on the wetland, and examine the issue of property rights and incentives in the wetland area.

Sustainable livelihood and tourism: A case study of Kinjhar Lake in Sindh Province of Pakistan, Tehmina Mangan, Pakistan

Kinjhar lake in Sindh province is one of the 19 Pakistani Ramsar sites. This lake is important for fishing, recreation, wildlife, flood control, ground water recharge, and fresh water supply but faces many threats from development. Eco-tourism, however, offers promise for conserving the Kinjhar lake. Thus, Tehmina wants to explore the potential for tourism to augment the livelihood of people living around the lake and how this might affect conservation of Kinjhar lake.

The Relative Efficiency of Water Use in Bangladesh Agriculture, Nasima Tanveer Chowdhury

Nasima wants to study the possibility of sustainable water use for agriculture in Bangladesh. She will examine the relative efficiency of water use especially in parts of the country, where there is a water scarcity. She will estimate the marginal value product of water and evaluate the efficacy of marginal pricing rules in irrigation water allocation. This has policy implications for various government run canal irrigation projects under the Bangladesh Water Development Board (BWDB), which has leased out some projects to Water User Groups.

Research Grants 2007

S.N.	Research Topic	Principal Investigator	Institution	Country	Starting Date	Duration
Cycle 14 – July 2007						
1.	Policy options to solve post-tsunami coastal fishery issues in Sri Lanka	Asha Gunawardena	Institute of Policy Studies of Sri Lanka	Sri Lanka	Sept. 2007	18 months
2.	The Recreational Use Value of Diyawanna Oya Wet Land Eco System: An Application of Contingent Valuation and Travel Cost Method	Dilhani Marawila	Institute of Policy Studies of Sri Lanka	Sri Lanka	Sept. 2007	12 months
3.	Valuing Health Benefits of Air Pollution Reduction in Kathmandu Valley	Naveen Adhikari	Tribhuvan University	Nepal	Sept. 2007	18 months
4.	Economic valuation of storm protection values of mangrove forests under the coastal ecosystems of the Sundarbans	Sakib Mahmud	Economic Research Group	Bangladesh	Jan. 2008	15 months
5.	The relative efficiency of water use in Bangladesh agriculture	Nasima Chowdhury	Economic Research Group	Bangladesh	Aug. 2007	6 months
6.	Impact Of Changed Forest Policy on Tribals: A Qualitative Study Through Revisits	Rucha Ghatge	SHODH: The Institute for Research and Development	India	Jan. 2008	19 months

Publications

SANDEE Working Papers and Policy Briefs

SANDEE published the following working papers and policy briefs based on its research in 2007.

Working Papers

Pesticide Use in the Rice Bowl of Kerala: Health Costs and Policy Options, P. Indira Devi, SANDEE Working Paper No. 20-07

Estimating the Economic Benefits of Arsenic Removal in India: A case study from West Bengal, Joyashree Roy, SANDEE Working Paper No. 21-07

Can Participatory Watershed Management be Sustained? Evidence from Southern India, D. Suresh Kumar, SANDEE Working Paper No. 22-07

Who Collects Resources in Degraded Environment? A Case Study from Jhabua District, India, by Neetu Chopra, Supriya Singh, Shreekant Gupta, Urvashi Narain and Klaas Van't Veld, SANDEE Working Paper No. 23 - 07

Shifting Cultivation and its Alternatives in Bangladesh: Productivity, Risk and Discount Rate, by M. A. Monayem Miah and S. M. Fakhurul Islam, SANDEE Working Paper No. 24 -07

Valuation of the Storm Protection Services of the Mangroves of Orissa, by Saudamini Das, SANDEE Working Paper No. 25 - 07

Does Tourism Contribute to Local Livelihoods? A Case Study of Tourism, Poverty and Conservation in the Indian Sundarbans, by Indrila Guha and Santadas Ghosh, SANDEE Working Paper No. 26-07

Managing the Arsenic Disaster in Water Supply: Risk Measurement, Costs of Illness and Policy Choices for Bangladesh, by M. Zakir Hossain, SANDEE Working Paper No. 27-07

Pesticide Use in Nepal: Understanding Health Costs from Short-term Exposure, Kishor Atreya, SANDEE Working Paper No. 28-07



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Jhum Cultivation in Chittagong, Bangladesh

Policy Briefs

Sustainability of Community Aquaculture-a study of transaction costs from Sri Lanka. Policy Brief No. 17

Ground Water Irrigation and Sustainability-Water Markets, Institutions and Power Supply in Northern India. Policy Brief No. 18

Facing Hazards at work-Agriculture workers and Pesticide exposure in Kuttanad, Kerala. Policy Brief No. 19

Counting the cost of Water Pollution-an investigation into Arsenic poisoning in West Bengal. Policy Brief No. 20

Why does community participation fail after the State withdraws? Understanding watershed management in Tamil Nadu, India. Policy Brief No. 21

Why helping the environment helps women: a study on the link between resource availability and gender equality in India, by Neetu Chopra et. al, SANDEE Working Paper No. 22-07

From slash-and-burn to sustainability - A study from the Chittagong Hill Tracts of Bangladesh, M. A. Monayem Miah and Fakrul Islam, SANDEE Policy Brief No. 23 -07

Mangroves - A Natural Defense against Cyclones: An investigation from Orissa, Saudamini Das, SANDEE Policy Brief No. 24-07

Can tourism be a vehicle for conservation? An investigation from the mangrove forests of the Indian Sundarbans, Indrila Guha and Santadas Ghosh, SANDEE Policy Brief No. 25-07

The economics of arsenic water pollution - a study from Bangladesh, M. Zakir Hossain Khan, SANDEE Policy Brief No. 26-07

Peer-Reviewed Publications

- Khan, H. (2006), 'Willingness to pay Margalla Hills National Park: Evidence from Travel Cost Method', *Lahore Journal of Economics*, Vol. 11(2):43-70.
- Kathuria, V (2007), 'Informal Regulation of Pollution in a developing country - Evidence from India', *Ecological Economics*, Vol. 63 (2-3), pp. 403-17
- Kishor Atreya (2007), 'Pesticide use knowledge and practices: a gender differences in Nepal', in *Environmental Research*, Vol. 104, Pg. 305 – 311, Elsevier Science Publication
- Khan, H. (2007) Poverty, environment and economic growth: exploring the links among three complex issues with specific focus on the Pakistan's case. *Environment, Development and Sustainability*. DOI 10.1007/s10668-007-9092-5
- Atreya, K (2007), 'Farmers' willingness to pay for community integrated pest management training in Nepal,' *Agriculture and Human Values* 24:399-409
- Das, S (2007), 'Storm protection Value of Mangroves from the valuation of Expected damages to Properties and Lives due to cyclones in Coastal Orissa', in Kumar, P. and Reddy, S (Eds) "*Ecology and Human Well-Being*", Sage Publication, New Delhi.
- Kishor Atreya (2007), ' Probabilistic Assessment of Acute Health Symptoms Related to Pesticide Use under Intensified Nepalese Agriculture', *International Journal Of Environmental Health Research*
- S. Madheswaran (2007) Measuring the Value of Statistical Life: Estimating Compensating Wage Differentials among Workers in India", *Social Indicators Research*.
- Devarajan, S. Ferro, M.V., Shah, S. and P. Shyamsundar (2007). Accelerating Poverty Reduction in South Asia by Scaling Economics Education and Policy Research in F. Bourguignon, Y. Elkana and B. Pleskovic (Eds), *Capacity Building in Economics Education and Research*, the World Bank, Washington D.C.

Lekha Mukhopadhyay (2007), 'Successful Voluntary Participation in Common Property Resource in Kumar, Pushpam and Reddy, B. Sudhakara (eds) *Ecology and Human Well-Being* Sage, London for INSEE

Mohammad Jahangir Alam (2007), 'Water quality tests and behavioral factors of child diarrhea in Dhaka Slums', BRAC University Journal, Vol. IV, No.1, pg. 103-109.

Ram Chandra Bhattarai (2007), "Transaction Cost in Farmer Managed Irrigation System in Nepal: A Case of Some Selected FMIS in Kathmandu Valley" in Prachanda Pradhan et al. (eds.) 'Irrigation in Transition: Interacting with Internal and External Factors and Selecting the Strategic Actions' Proceedings of the Fourth International Seminar Held on 6-7 November 2006, Kathmandu Nepal, Farmer Managed Irrigation Systems Promotion Trust, Kathmandu Nepal (pp 276-292).



Figure 1:
Peer-reviewed publications from SANDEE
since its inception

Taking Research Forward

Policy Dialogue and Dissemination

On the research dissemination front, SANDEE was quite successful in 2007, in particular, in getting research to policy makers and to civil society. This happened through several specific activities.

Early in the year, SANDEE Fellow E. Somanathan was invited to discuss his SANDEE research with policy makers from Environment Ministries of Malaysia, Thailand, Hong Kong, Cambodia, Vietnam, and the Philippines at a workshop organized by the Universiti Sains Malaysia, the University of California at San Diego, and the World Bank. The workshop was organized to inform policy makers about public information and monitoring issues related to beach water quality as well as water and sanitation more generally. Somanathan presented his findings showing that households in urban India reacted to information about poor drinking water quality by engaging in home water purification. He also chaired a panel discussion on policy options for Vietnam and the Philippines.

In Nepal, the findings of two pesticide related studies by Kishore Atreya and Ratna Jha were discussed in several workshops and internal official meetings organized by the by the Plant Protection Office of the Department of Agriculture. The results of these studies have been cited in working papers and handouts and highlighted in training events organized by the Department. Kishore Atreya's review of health costs of pesticide use has been translated into Nepali and presented to Pesticide retailers, IPM farmer-trainees, executives of district IPM Farmers associations and the government officials.

SANDEE researcher Saudamini Das has done excellent work on the role of mangroves as natural barriers and how they helped decrease casualties during the 1999 super-cyclone in Orissa, which took some 10000 lives. This issue is very important as climate change is likely to bring more extreme events to the



Workshop on Storm Protection Services of Mangroves, Orissa, 2007

sub-continent. SANDEE helped Saudamini Das organize a local workshop in Bhubaneswar, Orissa, to discuss her research on the role of mangroves in mitigating the impacts of the 1999 super-cyclone. With wide national media coverage, the workshop, which was co-organized by a set of parliamentarians from Orissa, drew some 175 officials, parliamentarians, media-persons, and NGO groups, and received national media attention. Orissa is a poor state and is hit by frequent storms - thus, the issue of mangroves and what to do with protection and conservation was a hot topic of discussion.

Research Associate Lekha Mukhopadhyay discussed her SANDEE experience related to participatory Forest Management in Buxa Tiger Reserve with practitioners and forest policy makers in December 2007. Subsequently, the Afforestation and Eco-development Board (NAEB) of the Government of India asked Lekha to revise a project proposal being prepared for obtaining external funds for the Sunderban Biosphere Reserve.

SANDEE was invited to present a panel at an IPCC dissemination workshop on climate change in Calcutta and to discuss how and what kinds of research could take the climate change agenda forward. This workshop was organized by the IPCC to get key messages on climate change out to decision-makers and SANDEE was invited to respond to the issues on the table. Thus, SANDEE had a panel presentation at the end of the workshop to show what kinds of research can be done

that might begin to address some local issues relevant to climate change. The conference, which was inaugurated by the Governor of West Bengal, was well attended by some 350 or so government officials.

SANDEE took the lessons from its research to parliamentarians in late 2007. Invited by UNDP and the International Parliamentarians Union, SANDEE's Program Director presented some of SANDEE's work to a group of pan-Asian Parliamentarians and to act as a resource person to this group. SANDEE's analytical approach to poverty and environment was much appreciated.

While SANDEE's research provides information on how to deal with environment and development problems, its impacts depend on the extent to which the research actually influences the management and policy making community. Is there a demand for environmental economics and sufficient understanding and interest in policy circles? Our own sense is that there is 'demand' for good environmental economics research but it is very important to sensitize policy makers and bring them upto speed on some of these issues. To do this, SANDEE co-organized a workshop on Poverty, Economic Development and Environmental Change for some 25 policy makers from South Asia during December 2007 along with UNDP and UNEP in Bangkok. The workshop, helped in identifying some areas of reforms and analysis and research during various country specific and theme specific sessions. There is potentially some more follow-up activity that will happen in the next year.

Presentations and Teaching

Many of the SANDEE researchers as well as colleagues trained by SANDEE disseminate their work in different fora and teach environmental economics or some aspects of it. We highlight only a few of the examples below.



SANDEEite Joyashree Roy celebrating the Nobel Prize announcement with IPCC members, IPCC disseminations workshop, Kolkata, October 2007



Bhutanese Policy Makers at the Poverty, Economic Development and Environmental Change workshop organized by SANDEE/UNEP/UNDP, December 2007

Devi Indira, P. presented her SANDEE research on pesticide use in agriculture at the Kerala State Science Congress, organised by the State Council for Science Technology and Environment from January 29-31, 2007. This is a prestigious science event held by the State Government every year which was inaugurated by the Chief Minister. Her paper was quoted by the mass media, in their reports of the event.

SANDEEites were an active presence in a conference on "Sustainable Development and Livelihoods" organized by the Centre for Development Economics (CDE), Delhi School of Economics from February 6-8, 2007. Day 3 of the conference was devoted to sustainable development and water. SANDEE advisor, Subhrendu

Pattanayak reported on an interesting ongoing study of a randomized controlled intervention to increase awareness and demand for latrines in rural Orissa. SANDEE Fellow E. Somanathan spoke on research conducted with secondary data and followed up by a randomized experiment in Gurgaon, to quantify the link between awareness of water quality and the demand for water purification. Research Associate Abhijit Banerji presented his work establishing the static efficiency of groundwater irrigation in North India; the work also quantifies potential efficiency gains from power sector reforms.

Krishna P. Pant presented a paper on his SANDEE research on indoor air pollution at a Public Economics seminar at Goteborg University, Sweden in December 2007. The title of the presentation was Taxing Fuel wood for Health and Environment Protection in Nepal.

Several SANDEEites presented their SANDEE research at the National Conference on Expanding Freedom: Towards Social and Economic Transformation in a Globalising World, at the

Institute of Economic Growth, Delhi, India in April, 2007. Lekha Mukhopadhyay presented a paper on 'What causes variation in efficiency of labour for collection of common property resources- agro-economic conditions and or conditions of resource base? And, Usha Gupta presented her SANDEE work on valuing the costs of air pollution in Kanpur.

Ramchandra Bhattari was able to attend a teaching workshop on institutional economics, following which he presented a paper on 'Elements of Transaction Costs in Farmer's Managed Irrigation System in Nepal: A case of Some Selected FMIS in Kathmandu Valley' at the eleventh annual conference of The International Society for New Institutional Economics, held at University of Iceland, Reykjavik during June 21-23, 2007.

C. Bogawatte and Herath Bandara presented a paper on 'Health Impacts of Cement production process in Sri Lanka', at Peradeniya, Sri Lanka at the First Symposium of Agricultural Economics Association in September 2007.

Kishor Atreya disseminated his SANDEE research result through a talk program titled 'Health Effects of Pesticide Use in Nepal' jointly organized by Plant Protection Society, Alternative Development and Research Centre and Kathmandu University in July, 2007.

Krishna Pant is using the research methods learnt during SANDEE meetings to guide student thesis at Kathmandu University and Purbanchal University. He is also teaching a course on Natural Resource Economics at Kathmandu University.

SANDEE Associates' Achievements

We track the achievements of our researchers to see if they are linked to SANDEE activities. On the career advancement front, several researchers have done very well. For example:

Santadas Ghosh is now Reader in Economics in Visva-Bharati (Tagore founded central University), West Bengal, India. His





SANDEE research played a key role since this is a move from a 'teaching college' to a regular research/teaching university and SANDEE research is the only research he has been involved in.

S. Madheswaran has been promoted to Professor at the Institute for Social and Economic Change. He presented his SANDEE research for his 'promotion seminar'.

Kishor Atreya is now in a Ph. D program with full scholarship at the Norwegian University of Life Sciences under the Department of International Environment and Development Studies. His Ph.D. research will directly follow and build on his SANDEE research on pesticides use in vegetable farming.

P. Indira Devi has been promoted as full Professor at the College of Horticulture at Kerala Agricultural University.

Krishna Pd. Pant responded to an advertisement through SANDEE's listserv and obtained a post-doctoral fellowship in Sweden. He spent two months at Gothenburg participating in various activities and studying two courses - Topics in Public economics and Environmental valuation.

Joyashree Roy and Indrila Guha obtained a 135,000 USD grant from South Asia-Pacific Network for Global Change Research for conducting a three year research project on 'Developing an Integrated Framework for Science Policy Interactions towards Enhanced Management of Coastal System'. This work builds on Indrila's SANDEE research on the Sundarbans.

A TERI-led consortium, headed by Dr. Pachuari, won a grant from the Natural Environment Research Council of the UK for undertaking a situation analyses of the poverty-ecosystem link in the Indo-Hindukush region. The total requested budget was 249,977 GBP. Eight of 25 key people involved with the project are associated with SANDEE: This is an example of networking happening outside SANDEE.

Strengthening Skills in Environment and Development Economics

Training

SANDEE organized five training courses in 2007. In total we trained approximately 100 researchers and policy makers from seven countries through these workshops. SANDEE's training workshops have three objectives: a) develop institutional capacity in environmental and natural resource economics; b) increase the number of South Asian professionals who can use economic tools to analyze environmental problems and bring more of these colleagues into SANDEE's research networks; and c) strengthen university teaching ability by providing teachers with environmental economics' skills. This year, we added a new training activity focused on policy makers.

1) Microeconomic Tools for Environmental and Resource Economics, Nepal (3-20 January, 2007)

SANDEE organized a new course last year to build up the skills of colleagues in 'under-served areas', with a particular focus on Nepal. We undertook a three-week training course in Fundamentals of Microeconomics for Environmental Economics in Nepal from 3rd - 20th January, 2007. The three-week course imparted training in the use of mathematics in maximization problems, both in standard Microeconomics and Natural Resource Management. We also undertook a review of micro-economics. The objective of this course was to strengthen the skills of colleagues who are less familiar with mathematical economics or who have not had hands on experience with it for a while. This is a precursor to SANDEE's annual introductory course to Environmental Economics. Twenty-four participants from

Participants Microeconomics workshop, Kathmandu, Nepal, January, 2007





Working together – Environmental Economics Course, Bangkok, May 2007

Nepal, North-East India and Bhutan, participated in this training workshop.

ii) An Introductory Course in Environmental and Resource Economics, Thailand (April 30 - May 17, 2007)

SANDEE organized a three-week basic training course in Environmental and Natural Resource Economics, in Bangkok, Thailand from April 30 - May 17, 2007. This basic course is meant for economists interested in upgrading their skills and learning related to Environmental Economics. The course covered economic

issues underlying sustainable development, poverty-environment interactions, and natural resource use and pollution management. Twenty three participants were exposed to theoretical issues and economic tools and methodologies for analyzing environmental problems in developing countries. Faculty included Drs. Rabindra Bhattacharya from India, Dr. Enamul Haque and Tanzir Chowdhury from Bangladesh and Dr. Karl-Goran Maler from Sweden.

iii) Advanced Econometrics and Program Evaluation, Nepal (3-7 July, 2007)

SANDEE offered a five-day advanced training workshop to continue to build on the research skills of SANDEE researchers and trainees. The first part of the workshop focused on special topics in econometrics such as multinomial logit models or Poisson regression models. The last day of the program was oriented towards understanding Program Evaluation, the need for it and the tools it offers. Dr. Condo of the Indian Statistical Institute and Dr. S.

What Participants in SANDEE's Environmental Economics Course have to say....

Abu Hena Reza, Dhaka University, Bangladesh

I generally teach international trade, operations management and development studies. I have included environmental issues in my lectures after completing the Environmental Economics course with SANDEE. The topics I now discuss are trade competitiveness and environment; environment and cost of operations of manufacturing firms; and the environment and economy of Bangladesh.

P. Babu, Planning Commission, India

SANDEE's Environmental Economics course had helped me in many ways in my career as a teacher, researcher and as Government Officer. It provided me with: a) exposure to a range of issues in sustainable development; and b) strengthened my teaching knowledge and ability to discuss the subject authoritatively with post graduate students; and c) equipped me with economic tools that I have since used in my Ph.D. dissertation. After the SANDEE course, I took up teaching a course called "natural resource management and sustainable development" at the Center for Rural Development Studies, Bangalore University. Since then, I have joined the Planning Commission as an economic officer. My job is to examine the viability of projects and I frequently use Cost-Benefit Analysis, a tool I mastered during the EE course.

Hari Krishna Pant , Institute of Agriculture and Animal Sciences, Rampur Campus, Lamjung, Nepal

I have been teaching the subjects of agricultural and environmental economics for three years, but since taking the SANDEE course, I have added new material. I am also trying to make environmental economics, which is an elective, into a regular course.

Pattanayak of RTI International were the main faculty. 26 participants took part in the workshop.

iv) Proposal Writing and Policy Workshop in Environmental Economics, BCDM Center, Bangladesh (6- 10 September, 2007)

The main objective of this five day workshop was to introduce economists to research methods and tools in environmental economics and enable participants to develop skills required to prepare serious research proposals in this area. While previously these proposal writing workshops have mainly focused on one or two countries, this time, we brought together researchers from multiple countries who had submitted concept notes to SANDEE and helped them refine their proposals. This was a very effective strategy since the researchers learned a great deal and were able to submit much improved proposals to SANDEE.

v) Economic Development, Poverty Reduction and Environmental Change - A Workshop for South Asian Policy Makers, Thailand (10 - 13 December, 2007)

SANDEE co-organized a workshop on Poverty, Economic Development and Environmental Change for some 25 policy makers from South Asia during December 10-13 2007. This workshop was co-organized with UNDP and UNEP in Bangkok. The objective of this four day workshop was to inform policy makers about the use of economic instruments and policies to improve the environment and to discuss the various ways in which poverty and environment were inter-linked. A second objective for SANDEE was to disseminate the results of its various case studies to decision-makers. The UN agencies were interested co-sponsoring this workshop partly because they wanted to support an informal network of government officials across S. Asia who could share information and discuss poverty and environmental issues. The workshop, organized for senior and mid-level policy makers from seven countries, helped in identifying some areas of reforms and analysis and research during various country specific and theme specific sessions.

Capacity Building in Under-served areas

SANDEE tries to provide special attention to certain areas in the region that could use additional support for environmental economics. Last year, our focus was on Nepal and the Maldives. SANDEE undertook several activities in year 2007:

a) Graduate Fellowship

In 2007, SANDEE started a joint fellowship program with Jadavpur University, Calcutta for Nepali junior/mid-career teachers and researchers interested in graduate work environmental economics. Mr. Jit Prasad Acharya a faculty of Patan Campus, Economics Department is currently doing his M.Phil in Jadavpur. In 2008, this program will be open to a few more countries other than Nepal in South Asia.

b) Training

As previously discussed, SANDEE organized a three-week Training course in Microeconomic Tools for Environmental and Resource Economics in Nepal from 3rd - 20th January, 2007. This course was meant to build basic capacity in Nepal so that Nepali researchers could catch up - in terms of their economics training with other countries in the region - and compete better for research grants. We also included participants from Bhutan and North-east India in this course.

c) Book Support

In Nepal, even in institutes that teach environmental economics, the academic resources in the library related to EE are minimal. Taking this into consideration, SANDEE distributed multiple copies of 18 commonly used books on environmental

Namobuddha Trip during Microeconomics workshop, Kathmandu, Nepal
January, 2007



economics to five institutes viz. Central Department of Economics - Tribhuvan University, Central department of Economics - Patan Campus, Institute of Forestry, Pokhara, Department of Agricultural Economics - Institute of Agriculture and Animal Sciences, Rampur and Kathmandu University. The books are kept in the references sections of Department libraries for the faculty and students.

d) Resource Center

SANDEE has established a 'Resource Center' on the premises of IUCN Nepal. This center is a public dissemination center in environmental economics and holds copies of reference and text books related to environment and development economics. It also has available copies of SANDEE and IUCN publications. We have also made available electronic access to journal databases that are freely available through SANDEE. The center should be a welcome addition that will support the environmental economics community in Nepal.

e) Supporting Research and Institutional Development in the Maldives

SANDEE, while South Asian in scope, has had some difficulty engaging researchers and policy makers from smaller countries to participate in its activities. Maldives in particular has been isolated from the rest of our efforts and we therefore made a special effort to visit the Maldives and try and engage the policy and academic community there to participate in SANDEE activities. We have an MOU with the Environment Research Center in the Maldives and will support their efforts to add environmental economics to their research program in the coming year. We were also able to bring Maldivians to our policy workshop to begin to help mainstream environmental economics into the policy arena. Our efforts in Maldives will remain small in the future because of the small size of the country and limited skills available.

Governance and Organization

SANDEE operates with the support of a small secretariat based in Kathmandu, Nepal and a governing board of researchers, donors and practitioners. 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 and the Board

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

- Priya Shyamsundar, Program Director
- Pranab Mukhopadhyay, Environmental Economist
- Kavita Shrestha, Administrative Officer
- Anuradha Kafle, Research and Information Officer
- Sunita Khanal, Account Assistant

SANDEE is provided oversight through a Management and Advisory Committee, which includes:

1. A.K. Enamul Haque, Professor, East West University, Bangladesh
2. AnnaMaria Oltorp, Swedish SIDA Representative
3. David Glover, IDRC Canada Representative
4. Nikhat Sattar, Head - Cluster Group 2, IUCN Asia
5. Partha Dasgupta, Frank Ramsey Professor of Economics, Cambridge University, UK
6. Priya Shyamsundar, Program Director, SANDEE
7. Shanta Devarajan, Chief Economist, South Asia Region, The World Bank, Washington D.C.
8. Y. K Alagh, Chairperson, IRMA, India

Donors and Partners

In 2007, SANDEE's programs and activities were sponsored by several regional and international agencies. These include:

1. International Development Research Centre, IDRC, Canada
2. The Norwegian Agency for Development Cooperation, NORAD, Norway
3. The Swedish International Development and Cooperation Agency, Sida, Sweden.

Many partners collaborated with SANDEE in sponsoring workshops or helped SANDEE with special guidance and assistance. Some of our key partners include:

1. UNDP, Sri Lanka and Bangkok
2. UNEP, Bangkok
3. UNEP Regional Resource Centre for Asia and the Pacific, Thailand
4. IUCN, The World Conservation Union (Bangladesh and Nepal)

We are extremely grateful to our donors and partners for their continued support and encouragement.

SANDEE Fellow Madesh working with researcher Uma



Fellows

SANDEE Fellows are nominated based on their service to the SANDEE family. While a full list of Fellows is available on the SANDEE website, we would like to introduce two SANDEE Fellows who were nominated by the SANDEE Management and Advisory Committee in 2007.

Dr. S. Madheswaran

S. Madheswaran is Professor at the Centre for Economic Studies and Policy, Institute for Social and Economic Change, Bangalore. His work over the last several years has mainly been in the area of labor economics. He has over forty peer reviewed publications in applied labor and environmental economics in Indian as well as international journals. He teaches econometrics, guides Ph.D. students, and advises the Karnataka Government on labor issues. Madheswaran has a Ph.D. from the University of Madras.

Dr. Rucha Ghate

Rucha Ghate is one of the founding members of SHODH: The Institute for Research and Development, based in Nagpur, India. She is also the Director of Collaborative Research Center of the International Forestry Resources and Institution, Bloomington, Indiana. She was earlier a Reader in Economics at Nagpur University and a Visiting Fellow at Indiana University, Bloomington, USA. She has taught at the Asian Institute of Technology and Mekong Institute Foundation, Thailand, and a course on 'environment and development' to visiting students from William and Mary collage, Virginia University, USA. She is the author of two book 'Uncommons in the Commons' and 'Forest Policies & Tribal Development', and her papers have been published in journals like International Journal of Sustainable Development and World Ecology, Forest, Trees and Livelihoods, Asia - Pacific journal of rural development, and Economic and Political Weekly. She has been a consultant on forestry issues to international agencies like the World Bank.



SANDEE Newsletters

SANDEE published two newsletters in Spring and Fall 2007 (Newsletter No. 14 and 15). These newsletters carry both analytical and newsworthy writings on policy issues in the different countries in South Asia. The contributors are mostly researchers from the region. Reporting SANDEE's activities is another important feature of the newsletter. The newsletter also tries to disseminate information regarding environmental economics and new developments around the world. SANDEE newsletters are available free of charge from our website.

Website, Database and List-Serve

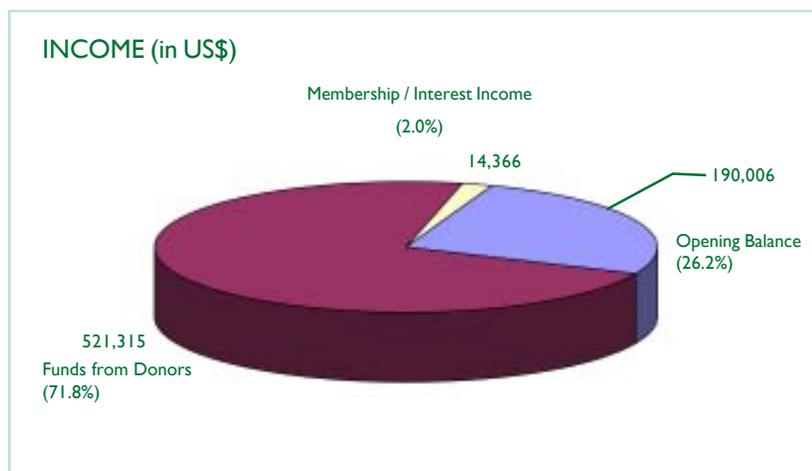


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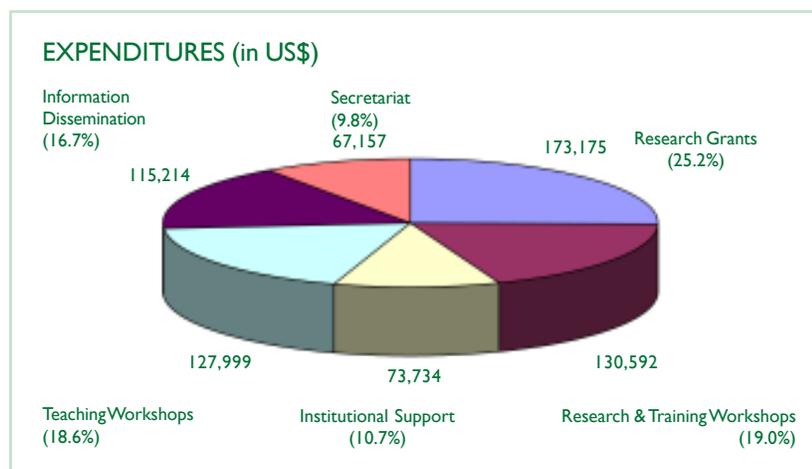
SANDEE's website hosts a wide range of information for environmental economists around the world. The information on the website ranges from details of SANDEE activities to information about international institutions and organizations working in the same field. Our website continues to grow. The website 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.

Financial Information: Income and Expenditure (January – December 2007)

Income Chart



Expenditure Chart



Key Environmental Indicators for South Asia

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka	Region
Population (millions)	141.8	0.63	1,094.6	0.3292	27.1	155.8	19.6	1,470
GNI per capita, Atlas method (\$)	470	1,250	730	2,320	270	690	1,160	692
GDP (\$ billions)	60.0	0.8	805.7	0.8	7.4	110.7	23.5	1,016
Agriculture								
Land area (1,000 sq. km)	130.2	47	2,973.2	0.3	143	770.9	64.6	4,781
Agricultural land (% of land area)	69	13	61	47	30	35	36	54
Irrigated land (% of crop land)	56.1	23.5	32.9	..	47.1	82.0	38.8	39.2
Fertilizer consumption (100 grams/ ha of arable land)	1,780	0	1,009	..	378	1,371	3,103	1,042
Forests and Biodiversity								
Forest area share of total land area (%)	6.7	68.0	22.8	3.3	25.4	2.5	29.9	16.8
Annual deforestation (% change, 1990-2005)	0.1	-0.4	-0.4	0.0	1.6	1.6	1.2	-0.2
Nationally Protected Area (% of land area)	0.5	25.6	5.3	..	18.6	9.5	27.3	6.0
Energy, Emissions and pollution								
GDP per unit of energy use (2000 PPP\$ / kg of oil equivalent)	10.5	..	5.5	..	4.0	4.2	8.3	5.5
Electricity generated using fossil fuel (% of total)	94.3	..	83.9	..	0.2	66.8	63.2	81.9
Electric power consumption per capita (kWh)	140	..	457	..	69	425	344	414
CO2 emissions per unit of GDP (kg/2000 PPP\$ GDP)	0.2	..	0.4	..	0.1	0.4	0.1	0.4
CO2 emissions per capita (metric tons)	0.3	0.6	1.2	1.4	0.1	0.8	0.5	1.0
Water and Sanitation								
Access to improved water sources (% of total population)	74	62	86	83	90	91	79	84
Access to sanitation in rural areas (% of rural population)	35	70	22	42	30	41	89	27
Internal freshwater resources per capita (cubic meters)	740	149,221	1,152	..	7,305	336	2,548	1,236
Total freshwater withdrawal (% of internal resources)	75.6	0.4	51.2	..	5.1	323.3	25.2	51.8
Under-5 mortality rate (per 1,000 live births)	73	75	74	42	74	99	14	83
National accounting aggregates -2003								
Gross national savings (% GNI)	28.8	56.0	32.2	35.8	31.0	18.4	20.5	30.1
Consumption of fixed capital (% GNI)	8.2	9.7	9.2	11.1	7.8	8.9	9.9	9.1
Education expenditure (% GNI)	1.7	4.0	4.0	6.9	2.6	1.6	2.6	3.6
Energy depletion (% of GNI)	3.8	0.0	4.8	0.0	0.0	7.5	0.0	4.9
Mineral depletion (% GNI)	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.8
Net forest depletion (% GNI)	0.7	3.2	0.6	0.0	2.5	0.4	0.3	0.6
CO2 damage (% GNI)	0.4	0.4	1.3	0.7	0.3	0.8	0.3	1.1
Adjusted net savings (% GNI)	17.0	45.6	18.6	30.1	23.0	0.9	12.1	16.4

Source: Little Green Data Book, 2006. World Bank.



South Asian Network for Development
and Environmental Economics

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