



SANDEE 

ECONOMICS & THE ENVIRONMENT

A decade
in focus

SANDEE@10

A message from the Programme Director

Dear friends and colleagues,

We started SANDEE (the South Asian Network for Development and Environmental Economics) 10 years ago with the idea that we needed a network of professionals from across South Asia who could examine environment and development problems together. SANDEE was born with a commitment to bringing people from our different but similar countries together. The glue that would hold the network together and propel it forward was the practice of economics focussing on the environmental problems of the region.

SANDEE's mission is to strengthen the capacity of individuals and institutions in South Asia to undertake high-quality economics research on environmental sustainability. SANDEE's activities are in the form of four programmes: research support, which is equal parts financial support and mentoring; teaching and training with a focus on teachers as well as researchers and practitioners; an under-served areas programme that provides special assistance to areas where the study of environmental economics is at a very initial stage; and networking and contributions towards practical applications of research. Through our activities, we hope to support the next generation of teachers, practitioners and policy makers with skills, networks and an expansive vision to address South Asia's joint environmental problems.

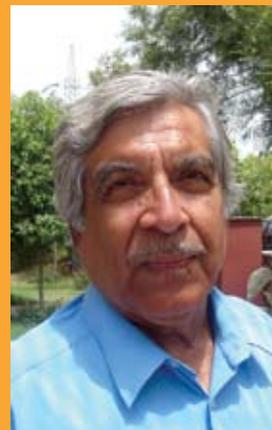
There have been many colleagues and friends who have been fundamental to SANDEE's existence and growth. Sir Partha Dasgupta and Karl-Göran Mäler put their reputations behind SANDEE, without which we would have surely not gotten off the ground. Both the Beijer Institute of Ecological Economics and its teaching programmes across the world and EEPSEA (Economy and Environment Program for South East Asia) were models that we drew from for inspiration and practical implementation. IUCN hosted SANDEE for over nine years and gave us a home when we were still a concept. Colleagues in the World Bank gave me office space and a huge amount of moral support (and bread and butter), allowing me to work there and simultaneously grow SANDEE. SIDA, IDRC and NORAD, amongst other donors, provided the long-term support required to establish a regional network. How could we have gotten this far without our advisors, some of whom have been with us for 10 years? They are clearly the pillars of our



'Inventive and practical'

The Chairman's view

SANDEE is a genuinely different group in my experience in South Asia. It works on the cutting edge problems of land, air and water and their relation with man. But it is both inventive and practical. Some of the best minds globally give their time and their intellectual strength to youngsters from the region to shape their initial desires and hammer them into solutions. In the process they, and the world, learn. By now we can turn to a policy maker at any level and say we have something to offer. But more basically we are still searching for the Holy Grail: knowledge which enlightens and shows the way in all humility, knowing there is a lot more to achieve.



Yoginder K. Alagh

Chairman, SANDEE

research programme. And then of course there is the staff, some friends who have left SANDEE and those who are with us now, who made it all possible. Finally, SANDEE's users, our clients from across South Asia, represent the demand for SANDEE products. It is surely to their credit that they are willing to live with our style of functioning, which may be somewhat different from what they are used to.

SANDEE has generated significant social and human capital within a small arena in South Asia. So what is next? Should we expand so that this 'arena' becomes larger and we are able to make a bigger dent in the enormous need for capacity building? Should we dig deeper into under-served areas where this need is the greatest, that is, where the educational system and research infrastructure are very weak? Or should we strengthen the hands of existing researchers and help them hone their skills, particularly as policy analysts? Recently, Dale Whittington did a survey (as part of an Evaluation) of SANDEE's researchers on these questions and the answers were evenly divided. The same questions are being posed at the SANDEE@10 conference and we will examine the results. Another question on my mind is whether SANDEE should remain the shell that it is or become a more permanent institution?

SANDEE does what it does well because we are small and can focus on getting the best outcomes in terms of quality. Thus, however much we may change in our next phase, we will not change dramatically and will remain true to our original mission. The focus on quality defines the SANDEE brand and we hope to keep this just so.

Priya Shyamsundar

Programme Director, SANDEE

Beginnings

SANDEE came into existence through the vision and tenacity of a lot of people. Here, some key people tell us how the idea of SANDEE took concrete shape.

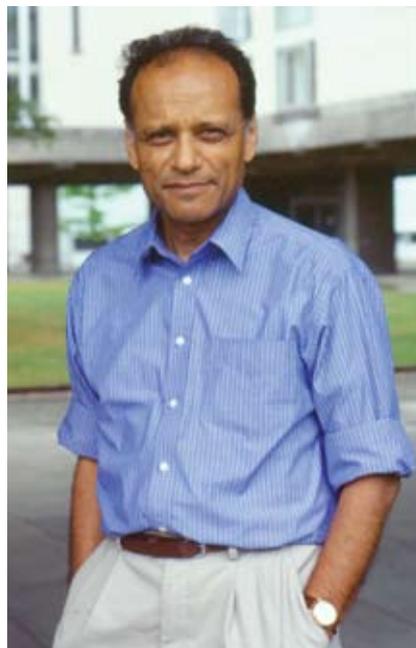
Karl-Göran Mäler, Professor Emeritus, is a former Director of the Beijer International Institute of Ecological Economics. Prof Mäler and Sir Partha were jointly awarded the Volvo Environment Award in 2002 for their outstanding and pioneering contribution to environmental and resource economics.

Sir Partha Dasgupta is Frank Ramsey Professor of Economics at the University of Cambridge, and also a Fellow of St. John's College, Cambridge. He has served as Chairman of the Faculty of Economics and Politics, University of Cambridge. His scholarship expands over several sub-fields in Economics.

Karl-Göran Mäler

“The idea of a regional network on environmental and resource economics is quite old. Sir Partha Dasgupta and I had discussed the need for strengthening the capacity in environmental and resource economics already more than 20 years ago. Eventually through the World Institute of Development Economics Research (WIDER), we organised a teaching workshop, which had students from South Asia, Southeast Asia and from Africa. One evening we discussed with the students the need for a follow up to this workshop – and there was a demand for an association or network for environmental and resource economists in South Asia. Three questions were fundamental, that needed to be answered before we proceeded: How can we fund such a network? How could we deal with the difficulties in having Pakistanis and Indians working together? Who should be the person planning for the activities and who would implement the plans?”

“[We decided to ask Priya Shyamsundar to engage with this, and she agreed.] We decided to have a meeting in Mumbai (the Indira Gandhi Institute of Development Research) discussing these plans. Meanwhile, Sir Partha tried to get promises from friends and former colleagues in the Indian Government to treat Pakistani researchers' applications for visa to India very liberally. Although he got promises, nothing came of it. At the first meeting in Mumbai, we had invited three persons from Pakistan, but only one was allowed to come (because he was employed by IUCN in Pakistan). We (now including Priya) understood the challenges of creating a network for South Asia.”



Sir Partha Dasgupta

“In late 1994, Dan Martin, Director of the MacArthur Foundation, approached me with the suggestion that the Foundation should support my research into Human Well-Being and Destitution. ...I could do with a largish amount of money for continuing the programme Karl and I had started at WIDER. The Beijer programme on Environment and Development was directed at poor countries generally, not specifically tied to South Asia. About then, at a teaching workshop three participants (one each from India, Bangladesh and Pakistan) asked Karl and me to help establish a network among economists in South Asia on environment and development. We [held] a conference in Nepal in 1999, with a potential network in mind. That's how SANDEE was launched. Priya almost immediately set in motion research workshops to augment the teaching workshops and so pave the way for SANDEE grants.

“[SANDEE's] first milestone was the meeting in late 1999 or thereabouts. ...The very idea that we could establish a network of scholars from all five countries in South Asia was itself a milestone. The second milestone was the Research Workshop in 2002 in Dhaka, where Professor Kenneth Arrow participated as a Resource Person. Arrow is unarguably the most original social scientist of the second half of the 20th century, and has been voted by his peers as the greatest economist of the 20th century. The third milestone was when a few SANDEE grantees, Pranab Mukhopadhyay and Rucha Ghatge in particular, activated Priya's suggestion that about 10-12 SANDEE funded research papers could be published as a volume of studies on the Commons in South Asia.”



Timeline

- 1999** SANDEE launched in November in Kathmandu, Nepal, at South Asia's first regional conference on Environment and Development Economics.
- 2000** SANDEE Secretariat created at IUCN-the World Conservation Union, Nepal. First research study approved; first newsletter distributed.
- 2002** Annual course in Environmental and Resource Economics launched.
- 2003** Working Paper series introduced.
- 2003** First Evaluation completed.
- 2004** South Asia-focussed issue in the journal *Environment and Development Economics* coordinated by SANDEE.
- 2006** SANDEEites attend the World Congress of Environmental and Resource Economics.
- 2007** First Policy Workshop on Poverty and the Environment jointly with UNDP and UNEP.
- 2007** Graduate scholarships for researchers from under-served areas initiated.
- 2008** Oxford University Press publishes SANDEE's first book: *Promise, Trust and Evolution: Managing the Commons of South Asia*.
- 2009** *Proceedings of the National Academy of Sciences* (PNAS) publishes SANDEE-supported research on mangroves and the super cyclone.
- 2009** Association with a new host, the International Centre for Integrated Mountain Development (ICIMOD), begins.
- 2010** World Bank's Annual Bank Conference on Development Economics (ABCDE) in Stockholm: Nobel Laureates act as discussants on SANDEE research.
- 2010** Peer-reviewed publications from SANDEE research hit the half-century mark.
- 2010** SANDEE's second book, *Environmental Valuation in South Asia* (Cambridge University Press), completed.
- 2010** SANDEE's second Evaluation completed.

Nobels serve as discussants of SANDEE research at the annual World Bank Conference on Development Economics in Stockholm, 2010.



Activities and impacts

1. Research grants made: 85

2. Research and Training workshops: 20

3. Publications

- a. Peer-reviewed publications (2000-10): 52
- b. Books: 2
 - i. A.K. Enamul Haque, M.N. Murty and Priya Shyamsundar (Eds.). *Environmental Valuation in South Asia*, Cambridge University Press, forthcoming.
 - ii. Rucha Ghate, Narpal Jodha and Pranab Mukhopadhyay (Eds.). *Promise, Trust and Evolution: Managing the Commons of South Asia*, Oxford University Press, UK, 2008.
- c. Working Papers: 55
- d. Policy Briefs: 50



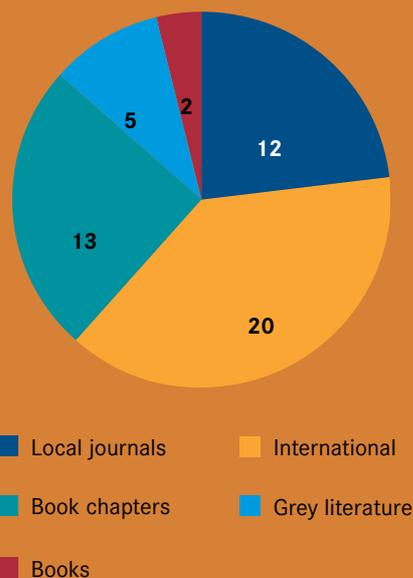
4. Training

- a. Participants at workshops (2002-10): 800
- b. Courses organised (2002-09): 35
 - i. Environmental and Resource Economics: 8
 - ii. Research and Proposal Writing: 8
 - iii. Advanced courses: 12
 - iv. Policy Dissemination: 4
 - v. Basic courses: 3

“...Environmental economics networks have shaped people’s thinking about environmental problems, produced useful insights, and improved environmental policies. Equally important are the indirect effects the networks have had through the people they have supported... talented individuals who have carried environmental economics forward into new areas, expanding its role in education, the media, and academic literature... . By putting high-potential individuals into a supportive environment, the networks have led many researchers into important roles.”

Source: David Glover (2010)

Figure 1. Different sources of peer-reviewed publications from SANDEE research



Supporting the under-served

An important part of SANDEE’s mandate is its support to under-served areas or smaller countries and less advanced areas in the region. Activities in this category have been diverse and include: (a) Scholarships to students, Tribhuvan University, Nepal; (b) Graduate fellowships, Jadavpur University, India; (c) Institutional support in the Maldives; and (d) Courses geared towards under-served areas.

SANDEE Grants: SANDEE’s focus is to strengthen rigorous academic research. It seeks to promote economic analyses of environmental problems, and solicits research proposals two times each year. Grants are generally made to individual researchers. While grants on certain themes have been encouraged at different points in time, researchers can bring any local ideas to SANDEE. SANDEE research tends to have a quantitative bent and research is frequently an empirical examination of an environment-development problem.

Table 1: Training received by SANDEE researchers

| Number of courses | Response (average) |
|--|--------------------|
| Short courses (3 days or less) attended | .92 |
| Longer courses (more than 3 days) attended | 1.49 |
| Total number of courses attended | 2.40 |

Source: Survey of researchers, Whittington, 2010



Research

Closing the knowledge gap

re. search /noun/ studious inquiry or examination; especially : investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws. [from the Merriam-Webster online dictionary]

SANDEE believes in transforming research, that simple gathering of facts, into knowledge mobilisation. Targeting research and investigations at solving existing problems and taking it to large audiences worldwide.

“In the last decade, SANDEE has nurtured high quality research on issues related to development and environment in South Asia. A pool of specialised researchers has been created as a consequence,” emphasises Kanchan Chopra, former Director of the Institute of Economic Growth, India. “SANDEE’s modus operandi ensures that the grantees continuously upgrade their technical skills and knowledge as they complete successive parts of their research projects. The presence of international and regional experts at these workshops and their continuing commitment has contributed in a very large measure to this process. SANDEE is much more than a grant-giving agency and is unique in this respect. It ensures advancement in learning. The learning also takes place in an atmosphere of bonhomie and

SANDEE’s Advisors

Researchers meet twice a year to present their work and discuss research methods with peers and advisors from around the world. SANDEE research would not be possible but for the guidance and mentoring done by a team of experts from around the world who have served for many years as SANDEE’s unofficial ‘faculty’. The advisors help refine research questions, review field questionnaires and data plans, support analyses and help review final manuscripts.

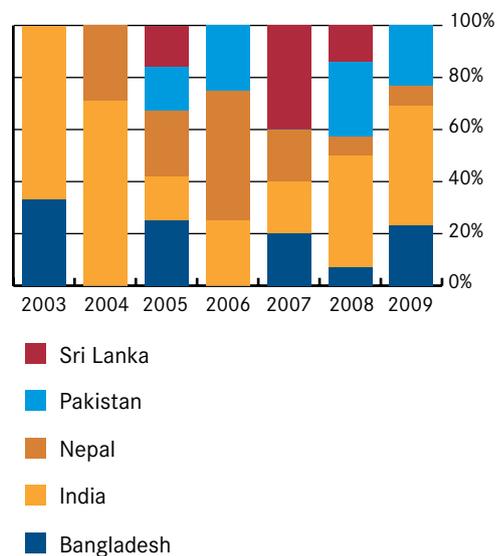


- **Jean-Marie Baland** is a Development Economist at the Department of Economics, University of Namur, Belgium.
- **A.K. Enamul Haque** is Professor of Economics at United International University in Dhaka, Bangladesh.
- **M.N. Murthy** is retired from the Institute of Economic Growth in Delhi and specialises in Public Economics and Environmental and Resource Economics.
- **Subhrendu Pattanayak** is an Associate Professor of Public Policy and Environmental Economics at Duke University, Durham.
- **E. Somanathan** is a Professor at the Indian Statistical Institute in Delhi.
- **Jeffrey Vincent** is the Clarence F. Korstian Professor of Forest Economics and Management at the Nicholas School of the Environment and Earth Sciences at Duke University.
- **Karl-Göran Mäler and Sir Partha Dasgupta** also serve as Advisors.

mutual understanding which is encouraging for all, including the initially not-so-well trained researchers.”

SANDEE’s research grants are at the core of its activities. Support is provided to South Asian researchers working in the field of environmental and natural resource economics through a biannual competitive small grants programme. Thus far, some 85 grants have been made on different themes (see ‘Research Themes’ on page 8). As Figure 2 shows, the grants initially were dominated by Indian researchers but this has slowly changed over the years.

Figure 2: SANDEE grants from 2003 to 2009



Broadening the research focus and creating skills

SANDEE grants are highly competitive and are much sought-after in the research community. Recipients of the grants receive not only the grant funds, but also services at Research and Training workshops, specialised training, access to international conferences and assistance with manuscript publication. Much of this support is aimed at helping researchers hone their skills, make available new tools for analyses and bring a certain sharpness and depth to the research problem being studied.

SANDEE's method of combining monetary and technical support and the particular brand of advising appears to have two main impacts. A recent Evaluation of SANDEE suggests that it broadens the focus of researchers' topics and shifts researchers out of related fields into environmental and resource economics. It also seems to transform the methods that grantees use to conduct their research towards more quantitative methodologies (Whittington 2010).



"I have been a SANDEE Advisor since nearly the inception of the organisation. I keep coming to SANDEE workshops due to the enthusiasm of the SANDEE researchers, and the success of the Secretariat in forging them into a South Asian community of scholars who share my interest in rigorous economics research on important environment and development issues. I derive great personal gratification from the opportunity to advise SANDEE researchers on their projects and to help them advance in their careers. But my motives are far from purely altruistic. I learn a tremendous amount from my interactions with SANDEE researchers, my fellow Advisors, and the Secretariat. I gain new insights into the topics I study, and I learn about issues and source materials that I can use in my teaching. I have never tried to calculate a personal benefit-cost ratio for the time and energy I invest in SANDEE, but I know it is a very large number."

Jeffrey Vincent, *Duke University, and SANDEE Advisor*

"[I have attended] many regional and training workshops, econometric courses, survey and data collection and proposal writing (workshops through SANDEE). [I have received] funding for my research work, training and guidance, and have attended conferences.

"[My SANDEE experience has been] extraordinary – [I have] gained knowledge about the practical and theoretical fields, and developed confidence [in my] research activities. Superb guidance by the resource person helped develop the research along more scientific and problem-focussed lines. A person who heard the term 'WTP' [that is, willingness to pay] for the first time in his life in a SANDEE gathering, [that person] was able to publish a paper focussed on WTP in an international peer-reviewed journal."

Kishor Atreya, *SANDEE Research Associate*

The paper in question is 'Farmers' willingness to pay for community integrated pest management training in Nepal: Agriculture and human values'.



As one researcher puts it, "SANDEE has widened my understanding of how to address multifarious dimensions in my areas of interest – labour and livelihood issues. I would never have thought of bringing in environmental and health issues to address labour market situations. I had no idea, pre-SANDEE, how one could address the climate change issues and valuation of statistical life."

Research and Training (R&T)

workshops: SANDEE organises two R&T workshops in a year which are focussed on grant-related training. At these meetings, new grant proposals are considered, existing and continuing research grants are reviewed and advanced training programmes are organised. Researchers discuss progress with advisors, the Secretariat and peers in formal and informal settings and receive direct feedback on questionnaires, study design and analyses. SANDEE 'faculty' are critical to the research process.

Santadas Ghosh is a second-round SANDEE Associate. His first research project (along with Indrila Guha, Associate Professor in Economics, Vidyasagar College for Women, Kolkata) examined tourism in the Sundarbans, the largest contiguous mangrove forests in the world. He is now back in the Sundarbans examining the effects of hurricane Aila.



Santadas Ghosh (extreme right) in the field.

He credits his understanding of primary surveys and data analysis to SANDEE's training programmes. "I got the confidence to carry out a large survey-based work (my ongoing project, for example) because I knew I would be guided by accomplished experts in SANDEE R&Ts," he declares. "I know if I am sincere and honest, SANDEE will steer me out of any problem I might face at any stage of the project." He also credits SANDEE R&T discussions with having "trained my eyes to single out a good and doable research issue from the day-to-day happenings around me. These value additions become very apparent to me when I look at the way research projects are being carried out by many of my colleagues at my present university, who are not initiated into such trainings. The textbook rules are known to everybody, but an exposure such as this makes one a good player in his/her field. The SANDEE research process is a single window for clearing most knowledge gaps, and ensures access to the maximum amount of resources for a policy-oriented research project relating to the environment," declares Ghosh.

Advanced Courses and Research and Writing workshops: SANDEE organises multiple courses to meet research demands and fill knowledge gaps. Such courses cover themes such as Advanced Econometrics, CGE Modelling, Household Economics, Survey Design and Climate Change.



"I find the research and training workshop extremely well organised and efficient. The fact that each faculty has a limited number of researchers to supervise with repeated meetings is really a great characteristic of this network, and it works really very well. The atmosphere in the workshops is really great and friendly."

Jean-Marie Baland, *University of Namur, and SANDEE Advisor*

Research and Writing workshops:

These happen at the beginning of a researcher's SANDEE career. They are used to help develop proposals, expose researchers to new ideas in environmental economics and allow them to get some initial feedback on their research ideas before submitting a final research proposal to SANDEE.

"The training method is unique," says Indrila Guha. "It taught me how write proposals and defend them, how to improve data collection, analysis, methodology, how to reduce bias and error in my findings, how to improve report writing, and so on. SANDEE training also taught me to disseminate knowledge and contribute in policy formulations."



Research themes

Ten years of operations have resulted in a useful and diverse portfolio of research studies.

● Poverty and Natural Resources

- Community forestry user groups in Nepal
- Tourism impacts on the poor in the Sundarbans
- Tribal land use in forested areas of South India
- Women's labour and forest use in India

● Agriculture and the Environment

- Pesticide use in Nepal and Kerala, India
- Slash and burn cultivation in the hill tracts of Bangladesh
- Bt cotton in Pakistan

● Pollution Management

- Informal regulations and industrial pollution control in India
- Alternatives to rice-wheat residue burning in India, Bangladesh and Nepal
- Taxing rubber-related pollutants in Sri Lanka

● Health and the Environment

- Arsenic contamination in West Bengal and Bangladesh
- Willingness to pay (WTP) for water purification in Gurgaon
- Health costs of air pollution in Dhaka, Kanpur and Kathmandu

● Valuation of Environmental Resources

- Wetland valuation in Sri Lanka, India and Pakistan
- Estimation of dose-response functions related to pollutants such as pesticides, dirty water and dirty air
- Storm protection services in Orissa

● Common Property Resources

- Land management in historical Goa
- Joint forest management in Maharashtra
- Community forestry and non-timber forest products in Nepal

● Climate Change and Natural Disasters

- Agricultural impacts of climate change in India and Nepal
- Growth implications of climate change in Pakistan
- Welfare effects of Hurricane Aila in India
- Targeting of post-tsunami aid in Sri Lanka

For more details, visit the SANDEE website at www.sandeeonline.org



Training Transforming teaching and research

In the last 10 years, SANDEE has organised 33 workshops and courses for researchers, teachers and practitioners. Over 2002-10, almost 800 participants have benefited from these courses.

Building the skills of teachers has been a particularly important aspect of SANDEE's mission. Environmental Economics is offered as a field of study in several South Asian colleges, but teachers don't necessarily have the tools to teach this subject. Through SANDEE training of faculty, the subject of resource and environmental economics is being introduced or strengthened in colleges and universities. This is an important mechanism for ensuring the sustainability of this field of study in South Asia.

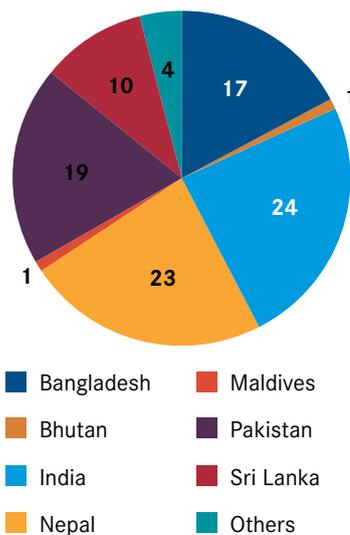
The flagship course offered every summer is the Environmental and Resource

Economics (EE) course. This course provides the equivalent of a semester's training within an intense period of three weeks. It covers natural resource economics, valuation, pollution and externalities

and some diverse topics in poverty and resource management. Teachers take the course material back to often design their own curriculum.

Various short-term, advanced courses are also organised in specific areas of EE to introduce participants to recent advances in the subject. SANDEE has offered 12 advanced courses on CGE Modelling, Advanced Econometrics, Household Modelling, Survey Methods, Climate Change, Climate Science and Policy, Programme Evaluation, Paying for Environmental Services, and Policy Tools for Climate Change.

Figure 3. Distribution of trainees by country
(per cent of total)



SANDEE has world-class training materials and expertise in the field of environmental and resource economics. After 10 years of training hundreds of participants, the SANDEE Secretariat has a wealth of experience teaching both introductory and advanced topics in environmental and resources economics in developing countries, obviously with a focus on South Asia. SANDEE has tested case study materials and assignments on dozens of highly topical issues in environmental and resource economics. It has assembled a network of some of the best instructors in these subjects in the world, and it has detailed empirical evidence as to precisely who are the best instructors to teach specific topics. The set of courses that SANDEE offers in environmental and resource economics is both broader and deeper at the undergraduate and masters levels than probably any single university in the world.

Source: Dale Whittington (2010)

SANDEEites all concur that SANDEE had influenced their teaching methodologies. To cite a few:

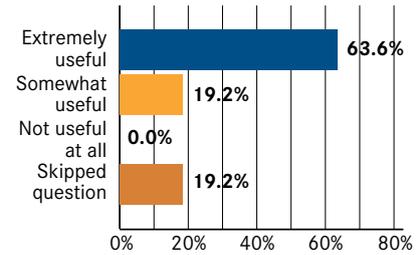
- ...Substantially influenced my teaching. I have been teaching environmental economics to Masters' students for the past six years which would not have been possible without SANDEE. I have used my SANDEE study as a learning resource, specifically the survey data.
- My involvement with SANDEE made me include two important components in my teaching activities relating to resource and environmental economics. They are: application of household models in natural resource economics; and poverty and environment linkages.
- Now, I am teaching the natural resource and environmental economics course for Masters' students. I give the assignments and hands-on exercises to the students from my SANDEE learning materials. My training from SANDEE on

NRE course is very useful for my teaching.

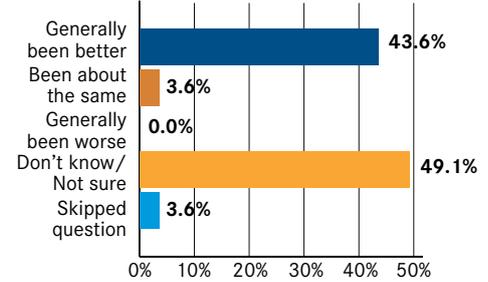
- ...After the training and starting SANDEE's research, I have designed a course for undergraduate economics at BRAC University, Bangladesh, where I was faculty before starting my PhD.
- I have been teaching environmental economics in Kathmandu University since 2003, but I revised the course after participating in the SANDEE training on environmental economics. From the performance of my students in environmental economics, I feel that I am teaching better now than before the SANDEE grants.

Professors mentor their students and encourage them to apply for SANDEE courses. Many times, suggestions such as these open up the possibilities of multi-disciplinary work, international exposure, and the chance to mentor a new generation of researchers.

Figure 4. Usefulness of SANDEE courses



In comparison with others, SANDEE courses have...



Source: Survey of researchers, Whittington (2010)



"The cumulative effects of improved knowledge of SANDEE researchers and their contribution to capacity building in their respective [regions and] countries, in terms of further research and teaching in environmental economics, will soon have marked impacts on the environmental policies in South Asian countries," says M.N. Murty (retd), Professor, Institute of Economic Growth, Delhi, and SANDEE Advisor.

Publications

Getting the word out

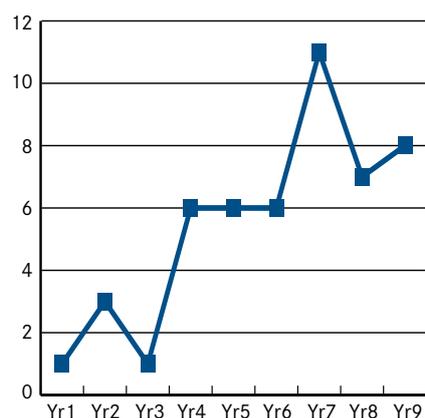


SANDEE research is published in the form of Working Papers and Policy Briefs. The researchers are then able to polish their Working Papers and publish them in books and journals. Figure 5 shows the steady growth of SANDEE publications; during 2004–09, some six to eight peer-reviewed publications emerged annually from SANDEE research.

Table 2 shows that the publications emerging from SANDEE cover both regional and international journals. While there are some 13 book chapters that have resulted from SANDEE research, the majority of papers are being published as journal articles. Table 3 (next page) identifies some of the top journals in which SANDEE research has been published.

Evidence shows that people read this work. A marketing review by Cambridge University Press of the journal *Environment and Development Economics (EDE)* showed that three of the top 10 articles viewed online between May 2005 and May 2006 were the results of SANDEE-supported research. The *EDE* journal is among the most effective means to reach people involved in applying economic approaches to environmental problems in developing countries (Glover 2010).

Figure 5. Peer-reviewed publications resulting from SANDEE research (2001-09)



Understanding the benefits of community-managed forestry

Research by: Bhim Adhikari

SANDEE Fellow Bhim Adhikari won the first SANDEE grant from Nepal. He undertook a meticulous study of community-managed forests and looked at the distribution of benefits to the poor and rich from these forests. This work has resulted in multiple publications, including articles in three peer-reviewed international journals.

“I received a lot of support from SANDEE. Perhaps the most important one is the mentorship of senior researchers under the SANDEE research grant. The intensive supervision provided by the SANDEE resource person was the secret of my success in terms of publications,” he underlines. “No doubt that SANDEE research training and mentorship have been instrumental in my own capacity building. I would not have dreamt of submitting a paper to *Environment and Development Economics (EDE)*, if my paper had not gone through SANDEE’s rigorous peer reviewing procedure.” Adhikari’s paper became the most downloaded paper from *EDE* in 2005. He also obtained two other international publications from this work.

His SANDEE working paper “has been received very positively in Nepal, particularly by the Ministry of Forest and Soil Conservation”. The UK-based Institute of Development Studies has also published a Policy Brief based on Adhikari’s SANDEE research.



Table 2: SANDEE publications (by year and type)

| Year | Books | Book chapters | Grey literature | Local journals | International journals | Total |
|-------|-------|---------------|-----------------|----------------|------------------------|-------|
| 2001 | | | | 1 | | 1 |
| 2002 | | 2 | | | | 2 |
| 2003 | | 1 | | | | 1 |
| 2004 | | | 2 | 2 | 2 | 6 |
| 2005 | | 1 | | 2 | 3 | 6 |
| 2006 | | 1 | | 1 | 3 | 5 |
| 2007 | | 3 | | 2 | 3 | 8 |
| 2008 | 1 | 3* | 1 | 1 | 5 | 11 |
| 2009 | | 2 | 2 | 3 | 3 | 10 |
| 2010 | 1 | | | | 1 | 2 |
| Total | 2 | 13 | 5 | 12 | 20 | 52 |

* This does not include the two books edited by SANDEEites



Milestone publications

SANDEE researchers have edited two books that are important collections of significant studies.

Rucha Ghate, Narpal Jodha and Pranab Mukhopadhyay (Eds.). 2008. *Promise, Trust and Evolution: Managing the Commons of South Asia*. Oxford University Press, UK.

From land management to water rights, this book looks at the current status of Common Property Resources in South Asia. Developed countries have managed to establish well-defined property rights over numerous resources, and in some instances, extended non-exclusionary rights over privately owned resources. In the developing world, however, the share of community property is extensive, either as a response to an expanding market or because the exposure to markets is still in its nascent stage. This, coupled with the demands of globalisation, has led to the co-existence of both community ownership of resources as well as an evolving private property rights market. This tension between public versus private ownership rights is particularly relevant in the developing countries of South Asia, not only because of its shared history but also because its resources frequently cross national boundaries. This book tells the story of the commons in a rapidly changing South Asia.

“The volume offers a wealth of empirical analysis of commons management in South Asia. The conceptual discussion is consistent throughout, and the findings hold important lessons for policy design. The profound contribution of this work lies in the welcome absence of the standard lamentation concerning the ‘commons dilemma’.” (Quote from a review of *Promise, Trust, and Evolution: Managing the Com-*

Table 3. SANDEE publications in top international journals

- Adhikari, B., S di Falco, J.C. Lovett:** Household characteristics and forest dependency: Evidence of common property forest management in Nepal. *Ecological Economics*, 48(2): 245-257
- Adhikari, B.:** Poverty, property rights and collective action: Understanding the distributive aspects of common property resources management. *Environment and Development Economics*, 10(1): 7-31
- Mukhopadhyay, P.:** Now that your land is my land... Does it matter? A case study in Western India. *Environment and Development Economics*, 10(1): 7-87-96
- Ghate, R., H. Nagendra:** Role of monitoring in institutional performance: Forest management in Maharashtra, India. *Conservation & Society*, 2(2): 509-532
- Kathuria, V.:** Informal regulation of pollution in a developing country: Evidence from India. *Ecological Economics*, 63(2-3): 403-17
- Atreya, K.:** Health costs from short-term exposure to pesticides in Nepal. *Social Science & Medicine*, 67: 511-519
- Gupta, U.:** Valuation of urban air pollution: A case study of Kanpur city in India. *Environmental and Resource Economics*, 41(3): 315-326
- Somanathan, E., J. Jalan:** The importance of being informed: Experimental evidence on demand for environmental quality. *Journal of Development Economics*, 87(1): 14-28
- Das, S., J. Vincent:** Mangrove protected villages and reduced death tolls during the Indian super cyclone. *Proceedings of the National Academy of Sciences USA*, 106: 7357-7360
- Ojha, V.P.:** Carbon emissions reduction strategies and poverty alleviation in India. *Environment and Development Economics*, 14: 323-348, 2009
- Shah, A.:** Land degradation and mitigation in a dry land region in India: Extent, nature and determinants. *Environmental and Development Economics*, 15(1): 173-196

Source: Whittington (2010)

One benchmark by which to judge SANDEE grantees' publication success would be the publication success of students in graduate programmes in environmental and resource economics in the United States of America and Europe. Masters-level students in world class universities rarely manage to publish in the journals listed in Table 3. PhD students who have completed their dissertation research in environmental and resource economics would be delighted to publish the findings of their dissertation work in these journals. Many do not manage to achieve this. Some PhD students at the best universities do, in fact, publish multiple papers based on their dissertation research, but the cost of this training is several times greater than the cost per SANDEE grantee. This makes the SANDEE publication story even more impressive because it has been done at such a low cost compared to graduate education in the United States or Europe.

Source: Whittington (2010).



Widespread recognition of the storm protection value of mangroves in India

Research by: Saudamini Das

In October 1999, the state of Orissa in India was battered by a super cyclone that killed almost 10,000 people and caused a massive loss of livestock and property. Controversy ensued over whether the impact of the cyclone had been made worse by years of destruction of mangrove forests in the area. Many argued that a healthy barrier of mangroves might have buffered the effects of the storm and minimised the damages it caused.

Saudamini Das, a researcher from SANDEE, assessed the factors that affected the impact of the storm. She found that mangroves do provide important storm protection to people, livestock, and buildings. Her study also found that, had the mangrove forests been intact, more than 90 per cent of the deaths due to the 1999 cyclone would have been avoided.



It is not surprising that Das's work attracted widespread interest. A workshop convened in Orissa to discuss her research drew 175 officials, parliamentarians, media representatives and NGOs. Her study was distributed by the Food and Agriculture Organization (FAO) at a meeting about Cyclone Nargis, which struck Myanmar in 2008, and has been used in many other deliberations on coastal conservation issues.

In the two years after the study was completed, Das presented her findings at 24 events (16 in India and eight abroad), including workshops organised by the FAO, the International Union for the Conservation of Nature, the Government of India's National Disaster Management Authority, Land-Ocean Interaction in the Coastal Zone, and others. Her work has been published in the most prestigious scientific journals, including *Proceedings of the National Academy of Sciences*, where her findings stirred a lively international debate. Her study was also showcased in a short movie by the American Museum of Natural History. Through her careful work in demonstrating the protective role of mangrove forests, Das has laid the foundation for a promising career.

Source: Glover (2010)

Table 4: The effect of mangroves on mortality during the 1999 cyclone in Kendrapada district

| | |
|--|-----|
| Actual deaths during 1999 super cyclone | 392 |
| Predicted deaths if there were no mangroves | 603 |
| Predicted deaths if current mangroves were at 1950 level | 31 |

Source: Das (2007)

To put an economic value on the protective role that mangroves play, Das looked at the mitigating effects of standing mangroves in the area, at government compensation payments, and at uncompensated losses. Das found the long-term protection value of (a hectare of mangroves to be) about \$8,700. At the time, a hectare of cleared land was fetching \$5,000. Thus, she showed that leaving mangroves as storm buffers generates more value to society than clearing them for development.

mons of South Asia, by Daniel W. Bromley, in *European Review of Agricultural Economics*, 2008, 35(4): 593-595. doi:10.1093/erae/jbn036)

Says Jodha of his experience of the collaboration: "Despite having worked on rural commons during the last 30 years, this was the first occasion to know more about the diversity of the commons in South Asia. Second, having studied commons covering 90 villages in India during the early 1980s, I had the opportunity to revisit some of the benchmark villages during the 1990s. This volume, through my chapter in it, gave me a great opportunity to reflect on the changes. Third, I learnt how to improve product quality, without getting tired. This happens when you have enthusiastic and cooperative colleagues and supporters. I have never had this experience, despite a large number of publications, in the past!"

A.K. Enamul Haque, M.N. Murty and Priya Shyamsundar (Eds.). *Environmental Valuation in South Asia*. (Forthcoming). Cambridge University Press, UK

This book provides an overview of different environmental problems in South Asia and examines how economic valuation techniques can be used to assess these problems. It seeks to offer robust evidence of the costs of a decline in environmental quality as South Asian countries grow rapidly. The book brings together, for the first time, multiple case studies on valuation undertaken by economists and environmental scientists in South Asia. It is designed to serve as a reference for students, teachers, researchers, non-governmental organisations, and practitioners of environmental valuation.





Dissemination

Influencing policy and practice

Environmental policy development is a complex, politically-charged and a slow-moving process. Often, it might take years before research findings are translated into action. However, when they do, the insights provided by environmental economics can inform policy at the local, national and international levels.

SANDEE research studies have begun to enter the policy debate either among researchers or amongst policy makers and practitioners. For example, as early as 2004, E. Somanathan's work on water purification behaviour had been presented to and discussed at the World Bank; and Bhim Adhikari's work was reflected in discussions by government officials on new challenges in community forestry in Nepal. SANDEE researchers often get the word out by organising dissemination workshops and reach out beyond academi-



cians to decision makers and whoever is likely to be affected by the research. Some researchers are able to influence state-level agendas. Amita Shah, for instance, wrote a chapter for the State Development Report of Gujarat, where she incorporated a substantial part of her SANDEE research to examine the links between natural resources, livelihood and migration. Joyashree Roy's work on the costs of arsenic contamination has been appreciated by the West Bengal arsenic task force.

In some cases, research or training has a practical impact. Rucha Ghate's contribution to tribal communities in

Estimating pro-poor tourism potential and conservation in Indian Sundarbans

Research by: Indrila Guha and Santadas Ghosh

The Sundarbans National Park (SNP) in West Bengal protects parts of the largest contiguous areas of mangrove forests in the world and is home to the Royal Bengal Tiger. The government's strategy to involve large Indian business houses to get tourists to the SNP is a positive effort to promote tourism in this biodiversity-rich mangrove area. But, what about the impacts on the vibrant informal economy of the local poor who are the small service providers?

To understand how conservation can be strengthened through development, a SANDEE study examined the conservation challenges facing the Sundarbans. The study was carried out by Indrila Guha from the Vidyasagar College for Women, Kolkata, and Santadas Ghosh from Visva Bharati, Santiniketan. The researchers measured the value of recreational services provided by SNP as well as the role of tourism in reducing local poverty.

Guha and Ghosh's assessment provides important information to help validate the conservation of the Sundarbans. It also highlights how more money could be raised for this work. The study shows that the forest has a significant value in its natural state, and gives a strong reason for continued investment in protection and conservation. It suggests that the government should increase the entry fees to the SNP and use the revenues for conservation activities. To maximise revenue collection, the study recommends that the entry fee of Rs 15 be raised to Rs 154. Many local people (particularly the poor) have lost potential income because they are barred from using the forest in the Sundarban's protected area. The study underlines the importance of helping local people to



A dissemination workshop in 2007 brought together the Chairman of the EPA and managers from the Sundarbans National Park. The then field director of the Sundarbans agreed to use our study as a baseline for future work. The travel cost study also bolstered their plans to increase the entry fee into the Park, as proposed in our Policy Brief. The World Bank has incorporated our recommendations in its study (on Environmental Strategy 2010, Consultations). USAid has also taken note of our study.
Indrila Guha

benefit from tourism, so that they can become partners in the conservation process themselves.

SANDEE supported a workshop organised by Jadavpur University on protected area management, which was based on two related SANDEE research studies. This workshop was very useful in bringing together Sundarbans' park managers and resulted in a dialogue on revenue management.

"I got an opportunity to work in the National Planning Commission as a senior advisor for the preparation of an Interim Plan document during 2007-09. I worked mainly on the natural resource part, especially forest resources. While preparing the document we [were] able to incorporate some issues for better property rights to the forest users group. We also incorporated some issues related to solid waste management.

"I also got an opportunity to work with the Ministry of Finance as a member of the Budget preparation team, during May-July 2009. We were able to incorporate one issue in the Budget – public-private partnership for the management of municipal solid waste in Kathmandu Valley. This is in the process of execution."

Ram Chandra Bhattarai, *Head of the Department of Economics, Tribhuvan University (Nepal), and SANDEE Research Associate*

central India was to keep them fully informed about joint forest management and government rules and regulations. "The livelihood intervention methodology I have developed for ActionAid Sri Lanka was highly influenced by the training I received on the advanced household economics course by SANDEE," says another SANDEE researcher.

In order to make research relevant to policy makers, SANDEE creates Policy Briefs for every completed project, summarising the core policy message in non-technical language. These Briefs are used in policy-oriented interactive training workshops organized with partners such as UNDP and UNEP.



Pesticide use studies influence agricultural extension services in India and Nepal

Research by: Indira Devi, Ratna Kumar Jha, Adhrit Regmi and Kishor Atreya

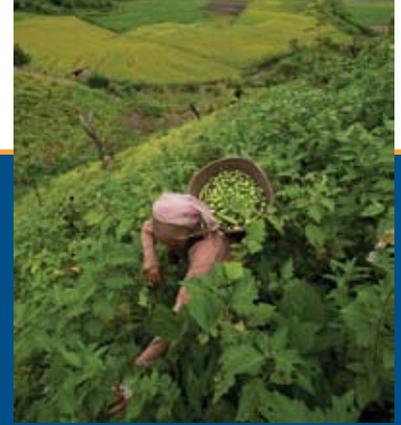
While the impact of the indiscriminate use of pesticides is widely acknowledged, the economic costs of this misuse are less well known. This has held back investment in the necessary health and safety programmes that can safeguard people's well-being.

P. Indira Devi (from the Department of Agricultural Economics in Kerala Agricultural University, India) looked at pesticide use in agriculture as part of her SANDEE research and estimated health costs to pesticide workers in the ecologically-sensitive rice growing area of Kuttanad in Kerala. Her study showed that farm workers (pesticide applicators) were not given any training support, while they were the people who managed the chemical pest control operations in the farm. The trainings were targeted at farmers, who generally prefer to keep away while spray operations are on. Her findings have been used to train extension workers and in preparing an organic farming policy document for Kerala.

Devi brought together a large community of practitioners, policy makers and scientists for a one-day state-level workshop on pesticide application in rice production. The workshop, which included 110 pesticide inspectors, the Director of the Agricultural Department of Kerala and various scientists, received widespread local media coverage and was video-taped for broadcast on national television.

This was a useful venue to discuss not only Devi's study on the costs of illness associated with pesticide applications but also to bring together other experts (doctors, veterinarians and agronomists) so that policy practitioners received a holistic understanding of the impacts of pesticides.

As a result of this study on pesticides and health, the Department of Agriculture in Kerala plans to: (a) build a registry of pesticide applicators and train



them in safe handling of pesticides; (b) provide protective gadgets at subsidised rates, when funds permit; (c) re-focus its training programmes on pesticide workers (applicators) and not just farmers, as has previously been the case; and (d) discuss requirements for introducing health insurance for applicators.

Pesticide use is the focus of two other studies in Nepal. Ratna Kumar Jha (Department of Agriculture, Ministry of Agriculture and Cooperatives, Nepal) and Adhrit Prasad Regmi (Centre for Rural Development and Self-help) looked at the effectiveness of pesticides in reducing crop losses amongst vegetable farmers in Nepal. The authors established that the optimal level of pesticides for Cole crops is 680 grams per hectare. However, on average, farmers use 2,633 grams of pesticides per hectare, or four times more than what is needed. Based on study recommendations, the Agriculture Department has revamped the Farmer Field School curriculum and activities (used to train farmers in integrated pest management) to encourage more efficient and judicious use of pesticides in vegetable farming. The results of this study were complemented by work by Kishor Atreya, who examined health disorders due to pesticide use and exposure in vegetable farming, which is subject to very high doses of pesticides in Nepal.

Pollution from non-point sources such as agriculture is on the rise due to the indiscriminate and unscientific handling practices of chemicals. With attention focussing on solving the problem of food insecurity, this problem may get even worse. Thus, it is critical to value externalities to make socially optimal decisions.

SANDEE's studies form the basis for understanding the current management practices and resultant externalities of pesticide use.

Coral reef protection in the Maldives

Research by: Md. Shumais, Ram Chandra Bhattarai

In 2008, SANDEE provided institutional support to the Environment Research Centre (ERC) to undertake research and training on environmental economics. The Centre was able to match a Maldivian researcher, Md. Shumais, with Ram Chandra Bhattarai, a Professor from the College of Fisheries, Mangalore, and Mahadev Bhatt from Florida International University, to undertake research on coral reefs and coastal valuation. The ERC also

contributed its own resources for this work. The field work was coordinated by the Environment Protection Agency (EPA), Ministry of Environment, Republic of Maldives, Male.

The issue to be researched was the improvident use of the marine environment, which contributed substantially to the Maldives' GDP through tourism, fisheries and related sectors. The study quantified the incremental benefits to recreational users of improving the marine environment, and provides justification for a user-financed conservation programme. The study suggests that increased expenditure taxes on various components of tourism services

could be one of several options for preserving the coral reef environment.

Currently, visitors spend an average of US\$1,666 per person per trip within the country. If the government were to introduce a user fee of US\$35, then based on current visitor numbers the country would generate US\$27.36 million – “more than 85 per cent of current environmental expenditure”.

An interesting policy outcome has emerged from this work in the Maldives. Based on tourist surveys, researchers identified Gan Airport Island as an area with extremely rich coral reefs. A harbour was being proposed for this island, which would have harmed the coral significantly. The researchers working on this project reviewed an environment impact analysis for the harbour and recommended that the plans be rejected. The government accepted the recommendation and a revised plan to build a jetty is being implemented. This Environmental Impact Assessment (EIA) was the only one that led to a proposal rejection out of nearly a 100 EIAs undertaken in 2008–09.



Reducing indoor air pollution in Nepal

Research by: Krishna Prasad Pant and Min Bikram Malla Thakuri

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. SANDEE-supported research on indoor air pollution has resulted in draft national air pollution guidelines in Nepal.

Two SANDEE studies – one by Min Bikram Malla Thakuri and the second by Krishna Prasad Pant – document the bad air quality in rural households in different parts of Nepal and show how small interventions in the kitchen can contribute to improved health outcomes.

A number of measures have been

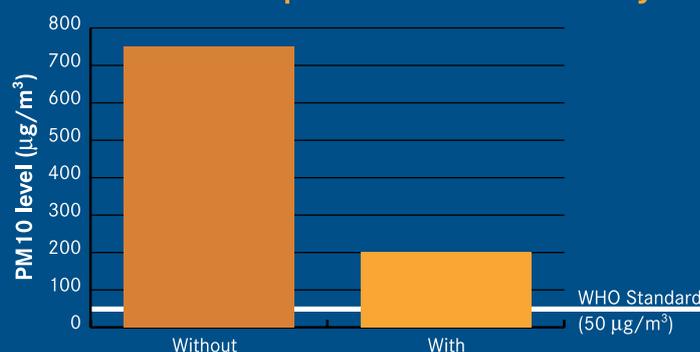
Thakuri's study showed empirical evidence on the costs and benefits of specific indoor air pollution control initiatives in rural Nepal. A positive outcome from this has been that Thakuri's organisation, Practical Action Nepal, signed a Memorandum of Understanding with the Government of Nepal in 2009 and developed draft National Guidelines on Indoor Air Quality.

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.

Pant's study looks at the health impact of indoor air pollution caused by cooking fires. The study finds that, although most poor people accept indoor air pollution as a 'fact of life', it is in fact a very significant health problem, especially for women and children.

The study finds that relatively simple solutions such as improved cooking stoves and the use of clean fuels such as biogas can reduce levels of pollution and improve people's health.

Figure 6: Pollution levels in kitchens in households without and with improved stoves and chimneys



Source: Malla (2009)

Professional development

Building skills and creating networks

SANDEE has provided a mechanism for environmental and resource economists across the South Asian region to meet and collaborate. Fostering intellectual dialogue and exchange across the South Asia region is one of SANDEE's main achievements. Such trans-country collaborative work also opens up many opportunities for career growth.

Accessing funding

Monayem Miah, in Bangladesh, is a SANDEE researcher whose research examined alternatives to slash and burn cultivation in the Chittagong Hill tracks. He worked closely with SANDEE Advisor Enamul Haque on this project and was very successful in getting it published. Since then, Miah has worked with three research projects funded by the Food and Agriculture Organization (FAO) of the United Nations in the last year. From among more than 800 research proposals, FAO Bangladesh selected only 11 propos-



SANDEE Research Associate Monayem Miah from Bangladesh has leveraged his SANDEE work to get multiple research projects.



SANDEE Fellow Joyashree Roy addressing a IPCC and SANDEE sponsored workshop in Kolkata.

als for funding under the Challenge Fund. "It is beyond my expectations to get three projects," Miah says. He attributes his success at least partly to the rigorous training he received through his SANDEE grant.

As a result of his work with SANDEE, Miah has been able to access other additional funding. "I received funding from the International Maize and Wheat Improvement Center to conduct a study. I also received funding from the International Potato Center to conduct a study on food and income security," he says.

SANDEE Fellow Joyashree Roy, a Professor at Jadavpur University, is an early graduate. Her research focussed on arsenic contamination of wells in West Bengal and she did some careful econometric analyses to examine household willingness to pay for clean water. Later on, Roy developed and won a huge project from the Japanese-endowed Sasakawa Young Leaders Fellowship Fund on 'Tradition, social change and sustainable development: A holistic approach' (on behalf of Jadavpur University).

"I think SANDEE exposure helped me when I had to write the proposal on how I would manage the programme: the endowment is for \$1 million and for the lifetime

Sometimes the relatively small projects financed by the networks are springboards to larger ones. SANDEE researchers Joyashree Roy and Indrila Guha received a \$135,000 grant from the South Asia-Pacific Network for Global Change Research for a three-year research project on improved management of coastal systems in South Asia. This work built on Guha's SANDEE research on the Sundarbans wetland in India and Bangladesh.

A consortium headed by Rajendra Pachauri won a £250,000 grant from the UK Natural Environment Research Council to undertake an analysis of the connection between poverty and the environment in India and the Hindu Kush Himalayan region. Eight of the 25 key people in the project are associated with SANDEE.

Source: Glover (2010)

of the university," Roy says. "In planning the programme, I designed it according to the SANDEE structure: proposal writing around a research question, proposal defense in an open forum in front of experts; and follow up as the work progresses with the help of mentors. This was not the norm of PhD programmes at the university at that time but I could introduce good practices learnt in SANDEE into this project." Clearly, SANDEE training within sustainable development paradigms has influenced her greatly.

Career growth

SANDEE research and training helps advance grantees' careers through various ways. SANDEE is a capacity building network – it is not surprising that the human capital that researchers gain allows them to grow professionally. Career development comes in the way of promotions, self confidence in research and teaching, publications, consultancies or invitations to advise governments and new grants and awards.

"I hail from a backward province... and had hardly any education.... very basic, even after doing MPhil and PhD. This was so because of the peculiar circumstances here. SANDEE gave me an environment where I literally learned the basics of environmental economics. Today I have

I have been nominated by the Ministry of Health and Family Welfare, Government of India, as a member of the Working Group on Alternative Crops to Tobacco [this recognition I attribute partially to SANDEE as part of the work related to the Working Group]. Secondly, we have developed contacts with Central Tobacco Research Institute on account of the SANDEE project.

Nayantara Nayak, a researcher at the Centre for Multi-Disciplinary Development Research in Dharwad, Karnataka. Her SANDEE research examines the fuelwood implications of tobacco curing.

reached a point here in Pakistan that whenever a conference is held related to the environment, I am invited to it. I have conducted many studies and I am in the process of helping the people of my area. This has been a great help to all of us," says Md. Rafiq, University of Peshawar, Pakistan. Rafiq's research estimates the statistical value of life.

Participation in international fora

International events are potentially huge knowledge transfer possibilities, offering a valuable opportunity to collaborate and pass on the knowledge and skills of experts in the field to a newer generation of users. SANDEE creates opportunities for researchers to attend global conferences. Participation is facilitated by organising panels and sessions, and by supporting expenses which otherwise would not have been possible in South Asian country bud-

gets. "We keep getting email notifications from the SANDEE Secretariat for calls for papers, where we can submit papers and then get abstracts selected," says a researcher. "SANDEE sends us to different forums where we, the SANDEE associates, get the chance to present our work."

SANDEE sponsored some 13 researchers from South Asia to attend the most recent World Congress for Environment and Resource Economics in Montreal. Similarly, the 2011 International Association for the Study of Common Property conference will have some five SANDEE panels. These international meetings are both immensely educative, build confi-

Above: SANDEE is well represented at global events such as the World Congress for Environment and Resource Economics. Below: SANDEEites at the European Association of Environment and Resource Economics Meetings in Gothenburg, Sweden.

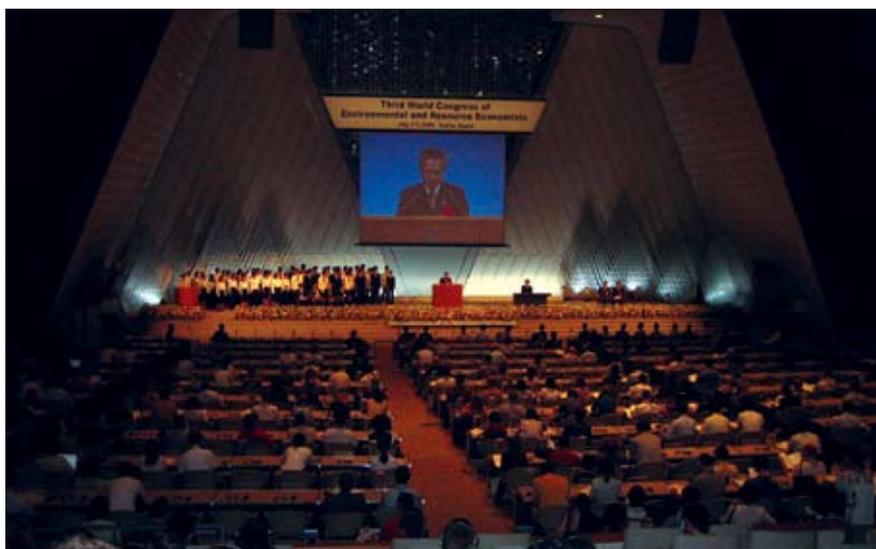
dence when researchers present their work, and also a great way to network.

Collaborations made possible

SANDEE works in seven countries in South Asia: Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. For the last 10 years, it has provided a platform for dialogue and collaboration between environmental and resource economists from across the South Asia region. To cite Whittington (2010), "Fostering intellectual dialogue and exchange across the South Asia region is one of SANDEE's main achievements."

Researchers are slowly beginning to collaborate outside of SANDEE's influence. Arabinda Mishra (of The Energy and Resources Institute, or TERI), was able to gather a large group of SANDEEites together to win a grant from the Department for International Development (DFID). SANDEE Advisors Enamul Haque from Bangladesh and Rabindranath Bhattacharya from West Bengal have collaborated on joint research, as have Joyashree Roy and Vijay Ojha on research dealing with macro-modelling and CGE studies. Rucha Ghatge, Pranab Mukhopadhyay and Mishra have together worked on land and forest use.

Mukhopadhyay talks about the Karl-Görän Mäler scholarship, also a collaborative project, for studying issues in forestry



SANDEE Research Associate Krishna Pant works on several research issues but his initial work with SANDEE was on indoor air pollution and health. His joint paper with Min Bikram Malla Thakuri and Subhrendu Pattanayak was accepted for the World Bank's Annual Bank Conference on Development Economics (ABCDE) in Stockholm recently. "I got an excellent opportunity to present a joint paper in the ABCDE. I was really fascinated; I could share moments with very senior persons [Nobel Laureates Joe Stiglitz, Erik Maskin and Bob Solow] together on the stage.

Career opportunities

In an independent survey of SANDEE's researchers, participants were asked: "Could you please list any examples of professional relationships with international organisations (for example, consultancies, research collaborations) that you think you probably would not have today if you had not been involved with SANDEE?" Here are some of the responses received.

- Getting consultancy projects – from: (a) IUCN on vehicular pollution in Kathmandu; (b) Kumaon University and JNU on valuing environmental benefits of a lake ecosystem, a study of Nainital; and (c) ANSAB on valuing benefits of Himalayan forests – would not have been possible if I had not been part of a SANDEE project.
- Yes, I have done a consultancy for WWF and I have developed the feasibility of PES like scheme for growing 'Green Cotton' in Sindh region of Pakistan. It was possible because of SANDEE. It sponsored me to do the PES course in Chiang Mai, Thailand.
- As a SANDEE researcher, I have received three awards since I started my SANDEE work: from the Global Development Network (Japanese Award for Outstanding Research on

Development 2005), from Tamil Nadu Agricultural University (Best Researcher Award 2006), and recently from the Australian government (Endeavour Executive Award 2009). I strongly believe that this is mainly as a result of my association with SANDEE. In fact, [due to] my established network through SANDEE, I was able to visit Deakin University, Australia, for four months as an Endeavour Executive Awardee.

- Honestly, my entire research career has been shaped by the one SANDEE grant. I certainly would not have moved out of a 10-year-old permanent government service to an ad hoc research position in a private research institute without the grant. The support from Prof Kadekodi has been a defining influence in my professional life.
- I'm starting work on a groundwater project with a collaborator from the International Water Management Institute (IWMI), with a large grant from 3ie. Some relationships with researchers from IWMI happened because they read our SANDEE work. The interest in water was also sustained because SANDEE provided a great opportunity to do a primary survey and some good research. 3ie also probably thought well of the experience from the SANDEE project.

Source: Whittington (2010)



Field visits and excursions during SANDEE training workshops offer SANDEEites an opportunity to network and learn from each other (Bangkok, 2009).

India makes large investments in community management of watersheds. SANDEE researcher Suresh Kumar works on this theme. For his SANDEE research, he was particularly interested in community participation in watershed management after the State withdraws support. Mr Kumar received three additional research awards since he started his SANDEE grant in this area – from the Global Development Network, from Tamil Nadu Agricultural University and from the Australian government. While these achievements of Mr Kumar are not entirely attributable to SANDEE, the training process at SANDEE has helped.

conservation. His team mates were Ghatge and Ingela Ternstrom. "We spent a month at the Royal Swedish Academy of Sciences; we have a small entry in the *Proceedings of the National Academy of Sciences*. Additional follow-up work will be presented at two forthcoming international conferences – the SANDEE@10 conference in Kathmandu in December 2010, and the Conference of the International Association for the Study of the Commons (IASC) conference in January 2011. None of this would have been possible without the unwavering support of SANDEE."

Going beyond regional networking, SANDEE brings together people even within countries that may not have access to research opportunities (see box above).

Sir Partha Dasgupta emphasises: "SANDEE attracts and encourages applications to its teaching workshops from scholars from out-of-the-way places in South Asia. That has always been a tacit policy. We wanted to break the dominance of the cosmopolitan centres in Delhi, Bengaluru, Dhaka and Karachi. That has meant that the grant proposals received by SANDEE are motivated from the ground, so to speak; they aren't built on current fashions in the United States of America and the Continent. That's why the research SANDEE grantees have been producing is so valuable."

About SANDEE

Board members

With their expertise, experience and knowledge, SANDEE's Board members provide strategic direction to the organisation.

- Yoginder K. Alagh, Chairman, Institute for Rural Management, Anand, and Chancellor, Nagaland University, India.
- William Chameides, Dean, Nicholas School of the Environment, Duke University, USA.
- David Glover, Programme Leader for Environmental Economics, International Development Research Centre (IDRC), Canada.
- Herath Gunatilake, Principal Energy Economist, Asian Development Bank, the Philippines.
- Madhu Khanna, Professor, University of Illinois, Urbana-Champaign, USA.
- AnnaMaria Oltorp, Head, Asia Region, SIDA, Sweden.
- Andreas Schild, Director General, ICIMOD, Nepal.
- Eli K. Sletten, Senior Advisor, NORAD, Norway.
- Priya Shyamsundar, Programme Director, SANDEE.



The SANDEE Secretariat is small and headed by Priya Shyamsundar, who came to SANDEE with experience from Duke University, the MacArthur Foundation, the World Bank and the Institute of Social Studies Trust, India. The Secretariat also includes **Anuradha Kafle**, who has worked as research and information officer at SANDEE since October 2002. She is SANDEE's 'Gal Friday' and her biology background keeps her interested in environmental issues. **Mani Nepal** is an environmental and development economist. Before joining SANDEE, he worked as a Visiting Assistant Professor at the University of New Mexico during 2007-08. **Pranab Mukhopadhyay** has had many roles in SANDEE – first grantee and then SANDEE's Environmental Economist. Mukhopadhyay has moved back to his teaching job at Goa University, but he continues to provide support. **Krishna Shrestha** is Administrative Associate, since November 2008. She manages SANDEE's research activities, supporting SANDEE's growth as an organisation. Her job was previously held for a long time by SANDEEite **Kavita Shrestha** who has relocated to Ghana. The other person instrumental to SANDEE's early years is **Manik Duggar**, who was SANDEE's

Programme Manager until 2005. SANDEE's current team also includes the indispensable accountant **Malvika Joshi**, who took over from **Sunita Khanel**.

SANDEE is hosted by **ICIMOD** in Nepal. Until 2009, it was hosted by IUCN-the World Conservation Union, Nepal.

Who has been funding SANDEE?

SANDEE has had several donors over the years. They include:

- The Norwegian Agency for Development Cooperation, NORAD, Norway
- The Swedish International Development and Cooperation Agency, SIDA, Sweden
- The World Bank, Washington DC, USA
- The John D. and Catherine T. MacArthur Foundation, USA
- The International Development Research Centre (IDRC), Canada
- The Ford Foundation, India
- The Department for International Development (DFID), UK
- Institutional members

References

1. Glover, David. 2010. Valuing the environment: Economics for a sustainable future. IDRC.
2. SANDEE website. <http://sandeeonline.org/>
3. Vaidyanathan, A., and Stein Hansen: Evaluation Report (1999-2003). SANDEE document.
4. Whittington, Dale. 2010. Evaluation of the activities of the South Asian Network for Development and Environmental Economics (2003-2010). SANDEE document.
5. Other SANDEE documents.