



SANDEE

South Asian Network for Development and
Environmental Economics



NEWSLETTER

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Dear Friends and Colleagues:

The past six months were marked by many 'firsts' for SANDEE, especially in its research dissemination. The first SANDEE supported book is now published, we organized our first dissemination workshop for policy makers from seven South Asian countries, SANDEE had a panel at an IPPC workshop in Kolkata, and lessons from our research were presented to parliamentarians at a meeting organized by UNDP and the International Parliamentarians Union. Thus, in some ways, SANDEE has arrived at the 'policy scene' in the region.

Our discussions with policy makers lead us to identify the millennium development goals (MDGs) as a theme for this newsletter. At our last policy workshop, there was a huge amount of interest in how to link poverty alleviation with environmental sustainability. Thus, in this issue's 'Focus', colleagues from the UN discuss the overall situation in South Asia. We also have specific commentary on Pakistan, Nepal and Sri Lanka. Read on and let us know what you think.

Rucha, Priya and others from the SANDEE and SHODH.

SANDEE....

The South Asian Network for Development and Environmental Economics is a regional network that seeks to bring together analysts from the different countries of South Asia to address environment-development problems. SANDEE's mission is to strengthen the capacity of individuals and institutions in South Asia to undertake research on the inter-linkages among economic development, poverty, and environmental change and to disseminate practical information that can be applied to development policies.



15th Biannual Research and Training Workshop, AIT CC, Pathumthani, Thailand

RESEARCH NEWS

NEW SANDEE GRANTS

In response to SANDEE's 15th call for pre-proposals, SANDEE received 65 concept notes from around the region. A rigorous review process involving SANDEE's Management and Advisory Committees, and regional and international reviewers was undertaken and the following eight proposals were short listed to receive grants:

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 by examining 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 decisions regarding the benefits of reducing pollution and other environmental health hazards, accident risks and improving work 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 faced by Sri Lankan food processing firms to adopt solid waste management practices. The different types of solid waste controls undertaken by a firm will be juxtaposed 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, Nayantara 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. Nayantara 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, Nayantara will study the economic feasibility of adopting alternatives to fuel wood in curing of tobacco in Karnataka.

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 study will inform policy makers who are currently investing in urban infrastructure about finding effective ways to finance these investments.

Property Rights, Agricultural Productivity and Household Income: Implications for Agricultural Land Market Liberalization in Sri Lanka, Jeevika Weerahera, Sri Lanka

In Sri Lanka private individuals and households were given cultivation rights to a fraction of government lands but under a number of restrictions. Some commentators believe that this poorly designed land tenure system affects growth in farm productivity. Jeevika will examine the relationship between land rights, factor productivity and soil degradation. The study will help policy makers to identify the magnitude of efficiency gains that might arise from restructuring tenure.

Valuation of an Ecosystem and 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, Bangladesh

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 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.



Resource person, 15th Biannual Research and Training Workshop, AIT CC, Pathumthani, Thailand

RESEARCH COMPLETED

This section presents abstracts from the SANDEE's working paper series. Full papers are available online at www.sandeeonline.org

Shifting Cultivation and its Alternatives in Bangladesh: Productivity, Risk and Discount Rate

M. A. Monayem Miah & S. M. Fakhrul Islam
SANDEE Working Paper No. 24-07

This study evaluates the economic feasibility of replacing shifting cultivation (*Jhum*) with settled agriculture and a new soil conservation technology. Shifting cultivation can cause top-soil loss, degradation of soil quality, and decrease in crop yield but significant improvements in yields could also be achieved with increased fallow. On the other hand, the use of soil conservation technology is found to be highly profitable, yet not easily adopted. The study finds that the social discount rate is a crucial factor determining the switch from shifting cultivation to new soil conservation methods. *Jhum* farmers are likely to switch to the new technology in a 3-year rotation scheme only if their rate of discount is below 58%. On the other hand, farmers with a 6-year rotation would switch as long as their discount rate is less 33%. Because they discount the future rather heavily, poor farmers with short fallows would require very high returns to tempt them to adopt a new type of farming. High initial cost of establishment, a long gestation period, and unclear customary rights are additional deterrents to the adoption of soil conservation technology. The study concludes that these problems can be overcome if financial support and technical assistance are made available.

Does Tourism Contribute to Local Livelihoods? A Case Study of Tourism, Poverty and Conservation in the Indian Sundarbans

Indrila Guha and Santadas Ghosh, SANDEE
SANDEE Working Paper No. 26-07

This study examines the contribution of tourism towards improving the livelihoods of local people in a remote island village of the Indian Sundarbans. The Sundarban Tiger Reserve is a major tourist destination and a small number of local people participate in tourism as vendors, boatmen, and guides. No village household subsists entirely on tourism-based income since such jobs are seasonal. A majority of the local service providers operate with very little or no capital investment. Yet households participating in the tourism-related activity are better

off than those who do not. Tourism participants spend 19% more on food and 38% more on non-food items relative to other villagers. Earnings from tourism appear to at least partially finance year-long consumption.

Tourism may also have a conservation effect in that the proportion of directly forest dependent households is significantly lower among tourism dependent households. There is, however, little evidence of any percolation of tourism-related income to non-participating households through intra-village transactions. The study proposes a carefully crafted policy for promoting nature-based tourism with more room for local participation.

Managing the Arsenic Disaster in Water Supply: Risk Measurement, Costs of Illness and Policy Choices for Bangladesh

M. Zakir Hossain
SANDEE Working Paper No. 27-07

Arsenic poisoning is a major public health concern in Bangladesh. This study uses primary data to examine health impacts and costs associated with arsenic contamination of groundwater. The study estimates that some 7 to 12 million person-days per year are lost as a result of arsenic exposure. In addition, individuals who are sick spend between 207 (US\$ 3.5) million to 369 (US\$ 6.25) million taka (Tk) per year for medical help. The total cost of illness as a result of exposure to arsenic is Tk 557 (US\$ 9) to Tk 994 (US\$ 17) million per annum or on average nearly 0.6 percent of the annual income of affected individuals. If it is possible to provide alternative technologies to reverse the impact of arsenic, the social gains to Bangladesh would be considerable. The study also finds that the threat of *Melanosis*—the black spot disease—and *Keratosis*—roughness in palms and soles—is high when there is cumulative exposure and that this threat is not the same for all wealth classes. Richer households take mitigation measures to reduce the threat on their health. Richer households also seem to be more successful in avoiding the incidence of *conjunctivitis* due to *Arsenicosis*. Women on the other hand are more likely to be affected by inflammation of the respiratory tracts—a sign of long-term exposure without recourse to medical help.

Pesticide Use in Nepal: Understanding Health Costs from Short-term Exposure

Kishor Atreya
SANDEE Working Paper No. 28-07

Occupational health, well researched in developed

countries, remains neglected in developing countries. One issue of particular importance is the use of pesticides on farms, which can have both chronic and acute impacts on human health. This paper focuses on acute health impacts associated with pesticide exposure in rural Nepal. Based on data from 291 households, the study finds that the magnitude of exposure to insecticides and fungicides can significantly influence the occurrence of health symptoms. The predicted probability of falling sick from pesticide related symptoms is 133% higher among individuals who apply pesticides compared to individuals in the same household who are not

directly exposed. Households bear an annual health cost of NPR 287 (\$4) as a result of pesticide exposure. These costs vary with fungicide exposure. A ten percent increase in hours of exposure increases costs by about twenty-four percent. In aggregate, pesticide exposure contributes to a health burden of NPR 1,105,782 (US \$ 15,797) per year in the study area. Although pesticide use in Nepal is low relative to many other countries in the world, this study, which is the first of its kind in Nepal, suggests that farmers and policy makers need to become aware of the health impacts of pesticide use as they continue to promote its use in Nepal.

PUBLICATIONS & PRESENTATIONS

Presentations:

- C. Bogawatte and Herath Bandara presented paper entitled 'Health Impacts of Cement production process in Sri Lanka', in Peradeniya in September 2007 in the First Symposium of Agricultural Economics Association.
- Krishna P. Pant presented paper entitled 'Taxing Fuel wood for Health and Environment Protection in Nepal' at a seminar at Goteborg University in December 2007.
- Lekha Mukhopadhyay, Suranjana Joarder, Anindita Biswas and Bhaswati Dutta presented paper called 'What causes variation in efficiency of labour for collection of common property resources– agro-economic conditions and or conditions of resource base? ' at a National Conference on 'Expanding Freedom: Towards Social and Economic Transformation in a Globalising World', at Institute of Economic Growth, Delhi, India, April, 2007.
- Saudamini Das presented her paper on 'Storm Protection Services of Mangroves and Super Cyclone of Oct 1999' at the 2nd LOICZ (Land Ocean Interaction Zone) Symposium on Social-Ecological System Analysis, a part of the XV International Conference of the Society for Human Ecology (SHE), Oct 2007 at Rio de Janeiro, Brazil.
- diarrhea in Dhaka Slums', *BRAC University Journal*, Vol. IV, No.1, pp. 103-109.
- Das, Saudamini (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.
- Ghate, Rucha, Jodha, Narpat.S., and Mukhopadhyay, Pranab (eds.) (2008) *Promise, Trust and Evolution Managing the Commons of South Asia* Oxford University Press, U.K.
- Ghate, Rucha, and Mehra, Deepshikha (2008) 'Integrating informal with formal forest management institutions for sustainable collective action in India', In Webb, E. and Shivakoti, G. (eds.) *Decentralization, Forests and Rural Communities*, Sage Publications: New Delhi, pp. 93-127.
- Gupta, Usha (2008), 'Valuation of Urban Air Pollution: A Case Study of Kanpur City in India', *Environmental and Resource Economics*, Published Online at: www.springerlink.com/content/3226744v3201kh52/
- Mukhopadhyay, Lekha (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).

Publications:

- Alam, Mohammad Jahangir (2007), 'Water quality tests and behavioral factors of child



FOCUS

Poverty reduction, MDGs and the environment in South Asia: Are we on track?

- Paul Steele (UNDP), Subrato Sinha (UNEP) and Sergio Feld (UNDP)

In this edition, we bring to you a discussion on the millennium development goals from colleagues in the United Nations who are deeply involved with this issue.

Mixed progress under climate change threat

South Asia has now passed the half way time point and has less than seven years left to achieve the Millennium Development Goals (MDGs). Is South Asia on track to meet the MDGs by the year 2015 and how important are environmental factors for overall MDG achievement? So far, MDG progress in South Asia is mixed. While the share of South Asia's population living in poverty is decreasing, child malnutrition remains shockingly high. Education enrolment is impressive, but improvements in health indicators continue to be a challenge. In terms of the environment, water access and sanitation have improved significantly, especially in rural areas, but they still remain at low levels. Forest cover is largely stable, but has fallen significantly in Nepal, Sri Lanka and Pakistan. Although, they are still at relatively low level, carbon dioxide emissions per capita are rising steadily. While it is not an MDG target *per se*, many of the countries in the region have faced increased

climatic disasters and these are likely to increase with climate change. If the world does not urgently reduce its greenhouse gas emissions and if South Asia does not take steps to adapt to climate change, the MDG progress to date may be wiped out after 2015.

Poverty, environment and the MDGs

Across South Asia, natural resources such as fisheries, grasslands and forests are vital to the health, livelihoods and security of poor people. Therefore, economic growth, to help reduce poverty in Asia, is linked to natural resources in terms of exports and revenues from agriculture, fisheries, tourism, minerals, and energy. In Bangladesh, fisheries provide over 40% of the dietary protein requirement for the population and account for more than 5% of the national GDP, while in Bhutan hydropower sold to India provides over 60% of government revenue. These linkages between growth, poverty and the environmental issues are thus vital to understand and tackle.

Falling poverty amidst child malnutrition

Extreme poverty in South Asia has fallen from 41% in 1990 to just over 29% by 2004 (the latest year of complete data). So this drop of poverty by almost a third suggests that South Asia may be on target to halve poverty by 2015. But in absolute terms 460 million people were still living on less than a dollar a day in 2004, and this makes 40% of the world's poor. Even more striking is that due to population growth the absolute number of poor is almost the same as it was in 1990. While poverty is falling, child malnutrition remains shockingly high, with 46% of children under 5 years of age being under-weight. This is almost the same as the 53% in 1990. So South Asia is disturbingly off track on this MDG target of halving malnutrition. South Asia has 83 million young children suffering from malnutrition, almost double the corresponding absolute number in sub-Saharan Africa.

Health, environment and malnutrition

There are many explanations for the high malnutrition in South Asia (and elsewhere) and as to why it is persisting despite apparent fall in poverty. Environmental factors, especially lack of access to clean water and sanitation are important causes for malnutrition. In rural areas where most of the poor still live, over two thirds of South Asian households lack access to improved sanitation and 20% lack access to clean water. There are nonetheless improvements over the last 15 years. Indeed, South Asia is more or less on track to halve the proportion

of population without access to safe drinking water and sanitation. But more must be done since it has been estimated that diarrhoea related morbidity could be reduced by 21% by improved sources of drinking water and 36% by improved sanitation (ADB *et al*, 2004). Chemical contaminants in drinking water are also an issue in several countries of the region, such as Bangladesh, where there are problems of arsenic and fluoride contamination.

Climate change, poverty and food security

While it is clear that environmental factors are closely linked to the achievement of the MDGs in South Asia, this is set to increase as climate change takes hold. Much of South Asia experiences monsoon floods, glacial melts from the Himalayas or cyclones near the coasts. Indeed, such annual floods are an integral and often productive part of the fishing and farming livelihoods of poor people in countries such as Bangladesh. Historically in flood prone regions, residents have adapted their houses, livelihoods and social networks to cope with these natural calamities. While the science is complex, it is agreed that climate change will increase these extreme weather events, leading to more lives lost, property destruction and disruption of livelihoods. For example, in 1999, a cyclone hit the coast of Orissa killing an estimated 10,000 people, and affecting the livelihoods of 12.9 million people, destroying 1.6 million houses, nearly 2 million ha of crops and 40,000 livestock (DFID, 2004). In some places, climate change may lead to rainfall becoming more variable leading to an increased frequency and severity of floods. In other places, water scarcity will increase. For example, water is already scarce in Pakistan, but will worsen extensively as 75% of the country's water is from the northern glaciers, which are declining as average global temperatures rise. These climate changes will impact food security. South Asia needs to ensure that climate change does not reverse the gradual progress that the region is making towards achieving the MDGs.

How to improve environmental management to drive MDG achievement?

Despite the daunting challenges, there are many promising political, social and economic processes driving pro-poor environmental outcomes in South Asia. Poor people themselves have organized together to demand better access to natural resources and improved environmental services. Sometimes this has been done in collaboration with government as in Nepal and India. Similarly, in the northern areas of Pakistan, fees to hunt regulated

species now go back to support the resident population. Asia's private sector as the engine of growth can provide innovation and leadership. Already India is at the cutting edge of global renewable technology such as wind power. So some companies have realized the profits of leading the market for new products and services in the switch to a low carbon economy. Asia's vibrant civil society has played a key role in this. For example in Bangladesh and Sri Lanka, environmental journalists and lawyers have used advocacy and public interest litigation to demand that governments improve their environmental record. In India's north-eastern state of Sikkim, the enlightened leadership of the Chief Minister in phasing out fertilizers and chemicals has led to a booming agricultural sector. Local governments have also shown activism. For example, in Bhutan's capital of Thimpu, the city council has appointed 15 environmental inspectors who are authorized to impose spot fines for illegal waste dumping, while in Karachi, one of the most unruly cities in Pakistan, rickshaws have been forced to use silencers to reduce noise pollution. In the Maldives, the move to elect local island chiefs may allow for improved management of fisheries and other natural resources, as chiefs will be judged by their performance. At the national level, Maldives has long stressed the importance of climate change and is now being joined by South Asian governments such as Bangladesh and India which are giving higher priority to the threat of climate change and playing a constructive role in international negotiations.

What role for environmental economists in MDG achievement?

Environmental economists can play a key role in promoting pro-poor environmental outcomes in three main areas of analysis and policy recommendations:

- *Economic linkages of natural resources and environmental management to poverty reduction, pro-poor growth and MDG achievement:* This helps political leaders, key line Ministries and the Ministry of Finance to take these issues more seriously.
- *Linkages between economic policies/incentives and the environment:* This helps remove economic policies that can negatively impact on pro-poor environmental outcomes.
- *Investment needs, rates of return, financing options and budgets for pro-poor environmental requirements:* This helps increase expenditure for pro-poor environmental needs.

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DISCUSSION

Pakistan: Millennium Development Goals & Environmental Sustainability

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Introduction

Pakistan is one of 147 countries committed to achieving the MDGs and to using a commonly accepted framework to measure progress. Pakistan's MDG report (2004) recognised the mutually reinforcing role of the eight goals in reducing poverty and enhancing overall anthropogenic well being.

MDGs and Poverty

In Pakistan, although progress in the first MDG is contested, calculations based on national poverty line data suggest that poverty has decreased from 26.1% in 1990-91 to 23.9% in 2004-05 (MDG Report, 2006). Moreover, in order to tackle poverty-environment issues strategically, Pakistan introduced a Poverty Reduction Strategy Paper in 2003. Some of the indicators that this paper specified point to more recent reductions in poverty. For example, the percentage of Pakistan's population with access to piped water increased from 53% in 1990-91 to 66% in 2004-05 and in the same period the percentage of the population with access to sewerage and drainage extended from 30% to 54%. However, the situation

is far from completely positive. For example, the proportion of children under 5 who are underweight increased from 40% in 1990-1991 to 41.5% in 2000-01 while those consuming below 2350 calories/day also increased from 25% in 1990-91 to 30% in 2000-01. While Pakistan's MDG report (2004) suggests that while the country's high economic growth, multiple development interventions and socially sensitive poverty reduction strategy should facilitate a reduction in poverty to 13% by 2015, this may be inhibited by large social inequalities, macroeconomic imbalances, inflation, unquestioned public sector expansion, over-regulation, lack of investment and agricultural stagnation.

MDGs and Environmental Sustainability

Pakistan has identified eight indicators to assess progress under the 7th MDG, which is achieving environmental sustainability. These include the land area percentage protected for wildlife conservation, GDP per unit of energy use (as a proxy for energy efficiency), the number of vehicles using CNG fuel; and the proportion of *Katchi Abadis* (slums) regularized.

To date, Pakistan's progress in environmental sustainability has been mixed. On the negative side, water availability declined from 5,300 cubic meters per capita in 1951 to a borderline 1,200 today, while soil and fishery productivity, and forest and mangrove cover are also quickly reducing. According to Pakistan's MDG report (2004), the negative impacts of such environmental degradation can be categorized into broad domains, including livelihoods,

health and vulnerability, all of which have a direct bearing on poverty. For example, natural resource related manufacturing plays a major role in Pakistan's economy, accounting for 45% of national income, 60% of employment, and 75% of foreign exchange earnings. Thus natural resource decline inevitably affects poverty levels. On a local scale, a clear example of the relationship between environmental degradation and poverty in Pakistan comes from Sindh. There, poor people use different types of trees such as *babul*, *devi* and *neem* for household use as well as an extra source of income during times of crop failure. Thus, as these trees



Relaxing after the days hard work, R & T workshop

become less common, poverty levels in Sindh are likely to increase. In Pakistan's coastal areas, mangrove loss is a key factor in increasing poverty levels with almost 70% of people in some areas of Karachi being highly dependent on fuel wood from mangroves (IUCN/ADB RETA, 2003).

This is not to suggest however that Pakistan's record on environmental sustainability is all negative. For example, Pakistan has made progress in developing policies and programmes aimed at moving towards a state of environmental sustainability. These include the National Conservation Strategy, the Pakistan Environment Protection Act and the National Environment Action Plan. Various related legal and regulatory frameworks have also been introduced. In addition, land designated as protected area rose from 9.1% of Pakistan's total land area in 1990-91 to 11.3% in 2004-05 and in the same time period, the number of petrol and diesel vehicles using CNG fuel in Pakistan increased from 500 to 700,000.

Over all, the picture is that the country still has a long way to go before it reaches the targets set as the MDGs. A major challenge that still needs to be overcome in the Pakistan context is lack of monetary investment in the environment. One estimate suggests that Pakistan would need to spend 33 billion rupees to increase its forest cover to 6% by 2015. Ultimately, greater effort and more strategic engagements both in Pakistan's development and its environment sectors is required to achieve the MDGs.

Nepal: Forests for poverty alleviation and environmental sustainability?¹

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Introduction

The environment is one of Nepal's biggest assets as the country is rich in biodiversity. This biodiversity not only supports economic growth, but also the livelihoods of most of the Nepalese population. The development of hydropower, tourism and cottage industries, all of which have strong comparative advantages in the country, cannot be achieved without Nepal's environmental assets and natural resources. However, environmental conservation is a considerable challenge. Forest resources are declining and loss of biodiversity is increasing with adverse impacts on poor and marginalized people.

Forest Areas

Forest cover in Nepal has declined over the past three

decades. The various causes of decline in forest cover include: increasing demand for timber due to an increased rate of urbanization, conversion of forest areas to agricultural land, increasing demand for biodiversity resources, reduced transportation and transaction costs resulting from road development, rising population, high levels of poverty, increasing dependence of the economy on natural resources, increasing occurrence of floods, droughts, landslides and forest fires, inadequate institutional and management system, and weak enforcement of the existing laws. Deforestation has increased landslides and topsoil erosion. It has also caused loss of agricultural land, productivity and biodiversity and an increase in the cost of fuel wood. An estimated annual loss of Rs. 11.55 billion occurs as a result of deforestation. To counter the forces leading to deforestation, area under protection has been increased by nearly three times from 1990 to 2004.

Another measure undertaken by the Government of Nepal in this regard is the gradually handing over of the management of forests back to villagers through Nepal's Community Forestry (CF) Program. Nepal's CF Program has significantly helped in conserving the country's forests, and at the same time linking local people with forests, forest products and other benefits that can be derived from forests. The CF Program began in Nepal in the late 1970s and is designed to protect the country's forests and to help alleviate poverty among forest-dependent communities. There are now more than a million households associated with the CF program. These households compartmentalized into user groups, have been made responsible for managing 22.5% of Nepal's total forestland.

Energy Consumption

Energy consumption in Nepal is still dominated by traditional energy. As a result, the commercial energy use per unit of GDP is also low in the country. The share of traditional energy consumption is about 87% of the total energy consumption. Fuel wood accounts for almost 90% of traditional energy consumption. The proportion of people in Nepal who depend on fuel wood for cooking and heating is about 69%.

Commercial energy use per unit of GDP in Nepal is one of the lowest in developing countries. Nepal's per capita electricity consumption is also one of the lowest

¹ Data is derived from Nepal Millennium Development Goals: Progress Report 2005, Government of Nepal and UNDP, Nepal, Kathmandu 2005; Nepal Biodiversity Strategy, Government of Nepal and UNDP, Nepal, Kathmandu 2002, and Three Year Interim Plan, National Planning Commission, Government of Nepal, 2007.

in the world. The level of petroleum products use, which is growing rapidly, is still very low. As a consequence, per capita carbon emission in the country is negligible.

However, Nepal is rich in renewable energy resources, especially electricity. The country has a hydropower potential of about 83,000 MW, half of which has been considered technically and economically viable. Yet, the actual installed generating capacity is only about 0.67% of feasible generation potential. More than half of the population does not have access to electricity, but all the 75 districts have electricity connection either through the national grid or an isolated grid system. About 5% of all electrified households access electricity from isolated localized grids (microhydro, solar and biogas) supported by agencies outside the national grid. Nepal's progress in alternative energy is quite impressive.

Challenges

Despite the positive emphasis in planning and policies, negative trends continue regarding forest cover, protected area status and biodiversity. The environmental sector is facing bigger challenges than ever before. It is essential that the longer-term ability of natural and environmental resources to reduce poverty and increase growth is properly addressed through proper identification, planning, designing, negotiation and implementation of strategies, policies and investment programs. Decentralization, involvement of local stakeholders, balancing the environment and the socio-economic development, are some of the strategies that could help the ability of Nepal's natural resources to support its people and at the same time facilitate conservation of Nepal's environmental assets.



IPCC dissemination workshop, Kolkatta, October 2007

Introduction

Sri Lanka has already achieved considerable success with respect to a range of development indicators that comprise the Millennium Development Goals (MDGs) and is on track to achieve targets for a majority of goals by 2015¹. The two goals that have shown least success i.e. Goal 1 – Eradicating extreme poverty and hunger – mainly in reducing non-income poverty and Goal 7 – Ensuring Environmental Sustainability, have been prioritized by the government as key areas for development under the 10 year National Development Framework (2006-2016). The government is seeking a new partnership approach to address these issues by working closely with the private sector, the UNDP and other relevant UN agencies.

National Policies and Priorities – Government Commitment to Action

The Government's allocation of SLRs 43 billion, for 119 of the poorest Divisional Secretariat (DS) Divisions², is seen as a major breakthrough towards poverty reduction and rural development³. A key factor determining the outcomes of ambitious policies is effective implementation and monitoring mechanisms that can ensure resources reach the poorest. Complementing this approach is the national "Localising MDGs" program aiming to strengthen devolved administrations capacities to ensure effective delivery and service quality for the implementation and monitoring of pro-poor projects in line with the MDGs.

The second MDG Country Report to be published in May 2008 is will focus on the plantation community, i.e. some of the poorest rural communities living in villages around plantations in the Central Province. This will inevitably contribute towards addressing root causes of poverty and inequality.

Engaging the private sector for development

The National Council for Development (NCED) of the Ministry of Finance and Planning seeks to unify state and private sector stakeholders in the development of economic policies and action plans. 22 cluster committees (including tea, agriculture, exports and rural development) have formed engaging private and public sector expertise with citizen volunteer members who facilitate in the government's policy formulation and execution process. The NCED, the UNDP and the Ceylon Chambers of Commerce (CCC) is now looking at how Corporate Social Responsibility (CSR) initiatives

can contribute towards national poverty reduction and rural development.

Achieving environmental sustainability through partnerships

Below are three key areas prioritized by the government in relation to Goal 7 of the MDGs:

1. Ensuring access to safe drinking water and adequate sanitation facilities: The government has secured SLRs 79, 460 million under the Water and Sanitation Sector Programme. Seven large projects across Sri Lanka, including conflict sensitive regions such as Jaffna and Ampara have been prioritized⁴. Private sector organizations such as Brandix Lanka Ltd. are also seeking to ensure clean drinking water and basic sanitation provision to rural communities.
2. Solid waste management for a cleaner city: Integrated waste management plans, such as to develop feasible treatment and disposal systems and encourage greater private sector participation, are being emphasized in this context. The government is investing SLRs 600 million in 2008 to establish an integrated solid waste management programme “PILISARU” in the Western and North Central Provinces. In addition, the Korea International Cooperation Agency (KOICA) Grant of SLRs 392 million is being used to address haphazard solid waste disposal practices in the Western and Central Provinces. This project focuses on areas not covered by PILISARU⁵.
3. Promoting alternative energy: Particularly given recent increases in petrol prices, the government is now looking to move towards alternative energy, such as solar, dendro-power and particularly from mini hydros⁶. A Sustainable Development Authority, a National Energy Policy and a Rural Energy policy are major recent breakthroughs in this context, but more must be done to reach energy equity in rural communities.

Achieving MDGs 1 and 7 is not only a government priority but is also becoming locally owned, to be achieved through national efforts. Private sector capacities and expertise are crucial sources of success and must be further harnessed to complement the government’s efforts. Transparency and accountability must be improved and clearer monitoring and reporting mechanisms established to ensure success.

¹ Millennium Development Goals Country Report, 2005.
² Ranked by the Department of Census and Statistics in Sri Lanka.
³ Mahinda Chintana 2006-2016 – 10 year National Development Framework, 2006.
⁴ Randora Publication – Sri Lanka
⁵ National Infrastructure Development Programme, 2007.
⁶ Ibid.
⁶ Millennium Development Goals Country Report, 2005



Enjoying the day outing wearing Nepali hats, Econometrix Workshop, Dhulikhel, Nepal

ECO - -News

Bangladesh: Sundari trees threatened in Sundarbans - Impact of tropical Cyclone Sidr

In November 2007 cyclone Sidr reportedly damaged about 25 % of the Sundarbans, a naturally regenerating coastal ‘green-belt’, protecting Bangladesh against cyclones and storm surges coming from Bay of Bengal. The Sidr almost razed to the ground 16% of the mangrove forests, mostly in the eastern Sundarbans. The increased salinity is likely to impact the mangrove eco-system adversely, rendering unfit habitats of the wildlife species, and critically threatening flora and fauna. A Port-Trust study has found that ‘top-dying disease’ attacking Sundari trees will increase with rising salinity. On average 114 trees per ha. of forest are already affected.

Bhutan: Dealing with solid-waste – latest government strategy

The latest strategy of ‘polluters–pay’ has been introduced by Timphu city corporation (TCC) to combat the mounting problem of solid-waste management. This involves a price to those who are not ready to keep the city clean. The problem of handling waste has been growing over the years. Records with the city corporation show that around 60% of the waste is non-organic. Managing solid waste has become difficult for TCC ever since the city’s urban boundaries were extended from 8 to 27 sq. kms in 2002.

India: Carbon Credit deals

India has registered the largest number of clean development mechanisms (CDMs) projects in the

world. The country accounted for 283 CDM projects out of the 1819 registered by the CDM Executive board by the end of 2007. CDM or carbon credits is a mechanism devised under the Kyoto protocol to award encashable points for carbon emission reduction (CERs) to eco-friendly projects on the basis of the carbon emissions they control. The Indian national CDM authority has accorded host-country approval to 753 projects, facilitating investment of more than Rs. 63 billion. These projects are in the areas of energy efficiency, fuel switching, industrial processes, municipal solid waste, and renewable energy and have the potential to generate 421 million CERs by 2012. (For more information visit: <http://www.ieta.org>)

Nepal: Master plan for solid-waste management

There is about 300 tons of garbage that gets generated in the Kathmandu valley. Since garbage disposal is becoming a problem, the Kathmandu Metropolitan City has devised a plan for garbage disposal by dividing the city into ten garbage-working areas. As per the plan each of the working areas will be managed by an NGO working in environment related issues. It would then be the responsibility of the NGO to work with the people of the respective areas to manage the solid-waste effectively. The real question is whether this will work? We will have to wait and see.

Pakistan

Fishermen's protest against National Fisheries policy
Fishermen have rejected the fisheries policy introduced recently by the government, declaring that it would benefit investors and contractors; and not fishermen. The fishing community is faced with many threats to its livelihood affecting three million fishermen living along the country's coastline.

Sri Lanka: Government measures to combat vehicle emissions and non-organic waste

The transport ministry in collaboration with Environment and natural resources ministry has launched a project entitled 'Green vehicle' to save the environment from hazardous vehicle emission. Under the project it will be compulsory to obtain and "emission testing certificate" for approximately two million motor vehicles. Sri Lankan central environmental authority is also planning to introduce Green Levy with an aim of minimizing environmental pollution. This Green Levy is to be imposed on plastic, polythene and other environmentally harmful products as well as high electricity consuming equipments.

FROM the SANDEE BLOG

Priya Shyamsundar
priyas@sandeeonline.org

SANDEE has a blog where various documents and articles are posted. Occasionally we present some of these in our newsletter.

Why is there air pollution? And why can we not fix it? Questions from Kindergartners

I was at my children's school a few weeks ago and a teacher stopped me and asked if I would come to talk to my son's Kindergarten class about Air Pollution. The five and six year old children were studying traffic in Bangkok. They had made a trip on the sky train and they had also taken a field trip to a multi-storey building to see what Bangkok looked like from above. Now, they wanted to learn about air pollution.

The teacher told me that the children believed that traffic caused air pollution, noise pollution and also wastes their time. If they weren't stuck in traffic, they would have more time to play and do interesting things. So, they had begun to develop theories on how to solve the traffic problem. Three interesting ideas they had were: a) Use flying electric cars; b) Let the buses, trucks and cars that cause pollution go underground, so that on the ground level children could have wide roads and sidewalk to walk, ride bicycles and scooters; and c) Use the sky train instead of private cars and taxis.

So, I prepared myself with some pictures of haze and smog and traffic and marched into the class one morning. The children were better prepared. They had each written out a question for me and stood up and asked them. For example, they asked:

- Why is there air pollution?
- Why do cars and trucks cause pollution?
- Why do motorcycles make noise pollution?
- Why can't cars run by electricity?
- Why do cars need fuel?
- Can we put old cars in the sea and make new electric cars. Is that a good idea?
- Why did people make traffic lights?
- Should we make flying cars?
- Why is pollution bad for us?

If you want to figure out how much you know about a subject, I would recommend trying to teach it to Kindergartners. It was a rather humbling experience

to face an audience that seemed to randomly waver between extreme excitement and boredom. But, their curious and agile minds were really thinking about big problems that we try to tackle in SANDEE. They knew what was wrong with the world. More importantly, they were already seeking solutions that would work for them. The last I heard, the class was making a power point presentation, so they could explain the pollution problem to children in another class.....SANDEEites, are any of you interested in participating?

SANDEE ACTIVITIES

Environmental Economics and Policy: Research and Writing Workshop, 6th - 10th Sept. 2007, Dhaka, Bangladesh

SANDEE organized a five day 'Environmental Economics and Policy: Research and Writing Workshop' from Sept 6th – 10th, 2007. The main objective of this workshop was to discuss key policy concerns in environmental economics and to help participants develop their skills in sharpening their research focus and choosing appropriate tools for their work. It provided participants an opportunity to discuss their research and get feedback on how to contextualize it within other ongoing work in South Asia.

Economic Development, Poverty Reduction and Environmental Change - A Workshop for South Asian Policy Makers, 10th -13th Dec. 2007, AIT Centre, Pathumthani, Thailand

SANDEE, UNDP and UNEP jointly organized 'Economic development, Poverty Reduction and Environmental Change: A Workshop for South Asian Policy Makers'. It brought forth to the policy makers the broad linkages between environmental change, poverty, and economic development. Participants were introduced to various tools and techniques that are available for improving growth and reducing the negative impacts on the environment.

SANDEE's 15th Biannual Research and Training Workshop, 8th-11th Jan. 2008, AIT Centre, Pathumthani, Thailand

SANDEE's research associates presented their final and progress reports in this workshop. New researchers presented their research proposals before SANDEE's Management and Advisory Committee.



Saudamini disseminating the results of her SANDEE project in Orissa, November 2007

Climate Science and Policy, 12th -13th Jan. 2008, AIT Centre, Pathumthani, Thailand

SANDEE brought together a group of scientists of the region to highlight the most immediate problems that they would like to be addressed, and to find what are the expected impacts and future projections; how probable are these scenarios, are there country specific/region issues, are there technologies existent that can mitigate the situation. These are some of the questions that experts from the natural and applied science community addressed. At the end of the workshop we were able to come up with a thematic set of researchable topics in economics, based on the scientists' assessment of climate change research in South Asia. Please visit www.sandeeonline.org for details.

Fundamentals in Basic Econometrics Theory and Applications in Environmental Economics, Nepal, 18th Feb.– 7th March 2008, Dhulikhel, Kathmandu, Nepal

SANDEE in association with the Economist Group (TEG) organized a three-week course on 'Fundamentals in Basic Econometrics: Theory and Applications in Environmental Economics'. This course covered topics in basic econometrics for new comers to practical econometrics. Topics included two variable and multiple regression analysis, its extensions, dummy dependent variables and simultaneous equation models. Theoretical lectures were combined with practical sessions using econometrics software and environmental economics data sets. This program was especially designed for candidates from underserved areas in South Asia viz. Nepal, Bhutan, Maldives, Sri Lanka, and North India.

PARTICIPANTS EXPRESS

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Maldivian policy makers during the workshop for South Asian Policy Makers, AIT CC, Pathumthani, Thailand

A Workshop for South Asian Policy Makers in Bangkok was organized with the idea that policy makers would benefit from an improved understanding of conceptual as well as practical linkages between poverty and environment. The participants comprised of senior and middle level policy makers from seven countries of South Asia - India, Pakistan, Bangladesh, Sri Lanka, Bhutan, Nepal and Maldives. The diversity of participants and the opportunity to visit a new land made for an excellent learning experience.

The workshop began with interesting and detailed analysis of the conceptual issues associated with

environmental economics, followed by important sessions on MDGs and climate change that stimulated great discussions. Highlight of day two was the 'public good decision making' game played in Dr. Kavikumar's session. Dr. Priya Shyamsundar (SANDEE) spoke to us about the linkages between poverty and the environment using various case studies. This session was a particularly interactive one, which was followed by presentation of a range of fascinating SANDEE case studies relating to community forestry. The participants made thematic group presentations, which were a great success. Another highlight was a resource-orientated game organized by Dr. Ghate, which was enthusiastically received by all participants.

On the final day, Dr. Steele spoke about environmental fiscal policy, again an excellent presentation, followed by a talk on arsenic and water supply in Bangladesh by Prof. Enamel Haque. The workshop was a stimulating one in which discussion on economic development, environmental change and a range of other subjects continued even during the breaks and in the evenings. By the end of the workshop we felt united towards a common cause, despite being from different countries and disciplines. It was also a great opportunity for networking. Most importantly the issue of 'climate change' came upfront and the fact that it should become a major consideration for all future socio-economic policy making.

I would like to thank SANDEE for organizing the workshop and I sincerely hope that we can all meet again in the future!

ANNOUNCEMENTS

Research guidelines for winter 2008 Research Competition are on the SANDEE website. The deadline for submission of pre-proposals is 30th April 2008. Visit www.sandeeonline.org for further details.

Project proposals are now being accepted under the World Forest Institute Fellowship Program, For more information visit <http://wfi.worldforestry.org> or contact Angie DiSalvo adisalvo@worldforestry.org.

SANDEE is offering two fellowships at Jadhavpur University, Department of Economics at the M.A. and M.Phil. level for candidates from under-served areas in South Asia (Bhutan, Maldives, Nepal, Sri Lanka) who want to pursue research in environmental and natural resource economics. For more information contact: application.sandee@gmail.com the deadline for submission of application is April, 2008.



MEMBERSHIP FORM

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Cheque no..... Amount (in US\$).....
Drawn on (Name of Bank).....
Membership Fee for the Year.....

Notes: This form is for institutional members only. The institutional membership fee is US\$50 per year for South Asian institutions and US\$250 per year for non-South Asian institutions.

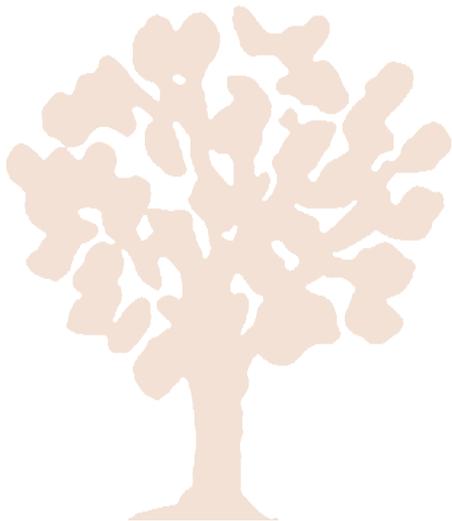
Information about SANDÉE and our activities are available online at www.sandeeonline.org. Our mailing address is IUCN Nepal, PO Box 8975 EPC-1056 Kathmandu, Nepal. Telephone: 977-1-552 8761; Fax 977-1-553 6786. If you have any questions about our program, please write to Anuradha Kafle at anuradhak@sandeeonline.org





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Information about SANDEE and our activities can be obtained online at www.sandeeonline.org



S Fundamentals in Basic Econometrics
Theory and Applications in
Environmental Economics,
Kathmandu, Nepal
18th February – 7th March 2008

T
N An introductory training course
in Environmental and Natural
Resource Economics for
Economists, AIT Center,
Bangkok, Thailand
5th – 23rd May, 2008

E
V SANDEE's 15th Biannual
Research and Training
Workshop, AIT Center,
Bangkok, Thailand
8th -11th Jan. 2008

E Program Evaluation Workshop,
AIT Center, Bangkok,
Thailand
4th July 2008

