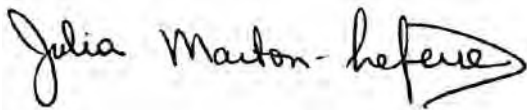


FOREWORD

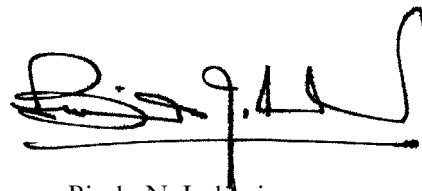
There is growing recognition in the development and conservation communities of the vital relationships between sound management of ecosystems and the determinants of poverty and the effectiveness of poverty reduction efforts. Although the poor are vulnerable to pollution in urban areas, these relationships are closer still in rural settings, where the majority of the poor remain dependent, in some manner, upon the productivity and sustainability of grasslands, forests, lakes, rivers, coasts, seas, and agricultural ecosystems.

Both the Asian Development Bank (ADB) and the International Union for Conservation of Nature (IUCN) are acutely aware of the need to better understand these relationships to achieve their objectives. As a multilateral development finance institution, focused on helping its member countries reduce poverty and improve their living conditions and quality of life, ADB is pleased to support the analysis presented in this publication. IUCN's mission is to influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable, and support for the type of analysis represented by this report is an important part of the mandate it has received from its members.

Recognizing their mutual interests in these areas, ADB and IUCN signed a memorandum of understanding in 2004 to serve as the basis for stronger collaboration between the two organizations. We are pleased to see this publication as tangible evidence of such collaboration, and we hope that its findings will help bring together the development and conservation communities to cooperate more closely in dealing with poverty–environment challenges facing Asia and the Pacific.



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PREFACE

For many of the many millions of rural Asians who still live in poverty, ecosystems and the natural resources associated with them are essential to daily health and well-being. It is also the poor—especially women and children—who have the most at stake when ecosystems degrade. They suffer disproportionately from the health risks caused by inadequate or dirty water and polluted air and bear the burden of collecting the resources used daily, such as water and fuelwood. This special vulnerability extends to risks from natural disasters—they are the most exposed to initial impacts and the least able to rebuild their lives in the aftermath of such events.

Some 640 million Asians live in severe poverty on less than \$1 a day—the majority in South Asia. And over 40% of Asia’s population—or more than 1.5 billion people—still live on less than \$2 a day. There is no question that Asia’s rapid economic growth has helped alleviate poverty in many parts of the region, and this economic expansion is expected to continue. Given population growth, and even under optimistic economic growth rates for the next decade, there will still be between 150 million and 300 million Asians living on \$1 per day by 2015 and a staggering 1.2–1.5 billion people getting by on \$2 a day.

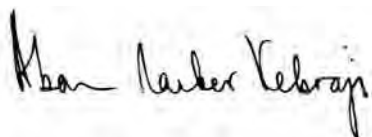
The majority of Asia’s poor live in rural areas where ecosystems such as water bodies, grasslands, soils, and forests are facing strains from the combined impacts of unsustainable exploitation or outright conversion to other uses. Despite the changing lifestyles in Asia’s expanding cities, life in rural Asia remains largely resource dependent. Most households rely on the fruits of their labor in agriculture—both on their own or others’ land—as well as on the collection of products for sale or personal use from natural systems. The poorest agriculturalists often eke out an existence utilizing the most marginal, smallest plots of land with infertile soils and little or no access to irrigation. At various times of the year they—and others—may also depend on products harvested from forests, lakes, rivers, or seas for their livelihoods.

The case studies presented in this publication highlight the challenges faced by these poor and, often, resource-dependent households across Asia. They include analyses of pressures facing agricultural systems in the People’s Republic of China (PRC), India, and Pakistan. They also cover examples of links between freshwater or marine aquatic ecosystems and those in Bangladesh, PRC, India, Lao People’s Democratic Republic, and Sri Lanka, who depend upon them. Grassland ecosystems provide pastures for livestock, and a case from Mongolia examines these relationships, while cases from Nepal and the PRC document how the poor rely on forests for fodder, medicines, fuelwood, and other products. One case study looks at the complex linkages between gender, poverty, and environment, while other cases from the highlands of Viet Nam, tribal groups in Orissa, India, and in Yunnan Province of the PRC illustrate how ethnic minorities are among the most poor and marginalized, but also often the most natural-resource dependent.

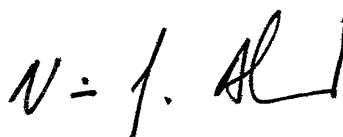
The viability of ecosystems upon which the poor depend can also influence the health of rural populations, and this report offers new insights into the relationships between healthy ecosystems and healthy people. Some of the cases provide positive examples of how traditional cultivars, as well as wild aquatic species, comprise vital protein sources and support the food security of rural communities in South and Southeast Asia. A case study on mining in Mongolia shows how indiscriminate exploitation of nonrenewable resources can damage the health of the poor by polluting water sources and destroying traditional pastures. Another regional case suggests that contacts between humans and animals can lead to the spread of diseases, such as severe acute respiratory syndrome (SARS) and avian flu—threatening the health of the poor and the rich alike. And a case study also is presented that shows how complex human–ecosystem interactions led to the spread of the Nipah virus in Malaysia, which decimated pig production in the country and led to widespread human illnesses and many deaths.

While the cases document the links between poor rural populations and natural systems, they also delve into the social processes that underpin poverty and often perpetuate the unsustainable management of natural systems—by both the poor and the nonpoor, and by both local and external groups. These issues are part of broader governance challenges that are pervasive across rural Asia, tied especially to the inequitable distribution of resource rights and management regimes that often favor vested interests at the expense of the poor. The case studies present a range of efforts to overcome such social and political rigidities, often supported by alliances between civil society and development agencies and resource-based nongovernment organizations that can facilitate wider legal redress. They also show how government agencies can learn to decentralize greater natural resource decision making to poor people and their political representatives as part of poverty reduction and resources management interventions.

This publication is meant to shed further light on these important and varied relationships, and ADB and IUCN are pleased to have commissioned these case studies in an effort to promote debate about and greater understanding of Asian resource management systems and why they matter for poverty reduction. We trust that the documentation and analysis of this Asian experience will lead to improvements in both poverty alleviation efforts and ecosystem conservation.



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ACKNOWLEDGMENTS

This publication is the product of a collaborative effort that began in 2004 when the International Union for Conservation of Nature (IUCN) was planning the Third World Conservation Congress held in November 2004 in Bangkok, Thailand, with the overall theme of *People and Nature*.

A dialogue was initiated at that time about the need to better document the Asian experience on the linkages between poor rural households and natural resource systems upon which the poor often depend for their livelihoods. It was noted that the existing poverty–environment literature was almost devoid of such examples as they relate to influences on human health. This contributed to the choice of “Health, Poverty, and Conservation: Responding to the Challenge of Human Well-Being” as one of the four themes of the World Conservation Forum associated with the Congress.

IUCN and Asian Development Bank (ADB) decided to further explore these relationships. IUCN proposed the concept for this report, and ADB agreed to collaborate and support its preparation and publication as an activity of ADB’s Poverty and Environment Program, financed by ADB and the Governments of Norway and Sweden.

A seminar was organized at the World Conservation Forum to gather together potential case study authors and others interested in the subject to decide on how to proceed with this project. The seminar was organized by Mr. Gonzalo Oviedo, IUCN Senior Advisor for Social Policy; and Mr. Robert Everitt, Environment Specialist in the Environment and Social Safeguard Division (RSES) of ADB. They were assisted by Mr. Paul Steele, now Environment Advisor for UNDP – Asia and Pacific Regional Centre and formerly of the Institute for Policy Studies in Colombo, Sri Lanka, by Dr. Hemantha Mishra of ADB’s NGO Center at the time, and Dr. David McCauley, Senior Environmental Economist in RSES. Many of the case study authors attended the seminar.

Any work of this type is the result of contributions from a wide range of partners and colleagues. From IUCN in Asia, support was provided by Dr. Ranjith Mahindapala, Dr. Lucy Emerton, and Dr. Pisupati Balakrishna. Ms. Aban Kabraji and Dr. Zakir Hussain, Regional Director and Director for Constituency Development of IUCN Asia Regional Office, respectively, and Dr. Bill Jackson, Global Programme Director at IUCN Headquarters, offered continued support and advice.

Dr. Bob Fisher, member of the IUCN Commission on Environmental, Economic, and Social Policy (CEESP) and Senior Researcher at the Australian Mekong Resource Centre of the University of Sydney; Dr. Luca Tacconi, also a member of CEESP and Associate Professor at the Australian National University; and Dr. Charit Tingsabadh, Professor, Chulalongkorn University, Thailand, reviewed and provided valuable comments on the manuscript. Mr. Steve Bass, Senior Fellow, International Institute of Environment and Development, United Kingdom and Dr. Robert Bos of the World Health Organization (WHO) provided valuable ideas during the conceptual phase. Valuable comments also were received at the June 2006 meeting of the Poverty and Environment Partnership in Washington, DC, where a brief presentation was made on the report’s contents and findings.

At ADB, overall direction and guidance for the study team were provided by Mr. Nessim Ahmad, Director, RSES. The report would not have been completed without the persistent and able efforts of Ms. Loreta Rufo, RSES, who served as the link between organizations, editors, and authors in guiding the publication from concept to reality. She was also assisted at several key junctures by Ms. Charina Munda and Ms. Carmina Esguerra, also of RSES. At IUCN Headquarters, Ms. Susan Both offered logistical support throughout the process, assisted by Ms. Sandra McKenzie based in Ecosystems and Livelihood Group 2 of IUCN Asia in Colombo. Ms. Deborah Murith, Ms. Cyndi Cracker, and Ms. Tiina Rajamets of IUCN’s Publications Support Unit, Mr. Vicente Angeles and Ms. Priscilla del Rosario of ADB’s Publishing Unit diligently arranged printing and distribution.

Ms. Susan Broomfield did the first editing of the compiled manuscript at IUCN and facilitated liaison with the authors for retrieval of materials. Editing was then completed at ADB by Mr. Marc Crowe, Ms. Agnes Adre, and Ms. Ma. Theresa Castillo. Cover design and layout were prepared by Ms. Regine Abos and Ms. Cecilia Caparas of ADB's Department of External Relations.

The strongest acknowledgments, however, must be accorded to the authors of the case studies and the subjects of their analysis. Biographical sketches for each author are provided at the end of the publication. We were very fortunate to attract such a multifaceted group with valuable experiences to share. We have done our best to pull together the wide-ranging elements of the cases into what we hope is a coherent whole that we believe will add considerably to the growing literature on environmental determinants of poverty and human health and which carry important implications for poverty reduction efforts in Asia and elsewhere in the developing world.

ABBREVIATIONS

ADB	Asian Development Bank
APEC	Asia-Pacific Economic Cooperation
ARDS	acute respiratory distress syndrome
CBHFRM	Community-Based Haor and Floodplain Resource Management
CF	community forestry (Nepal)
CFUG	community forestry user group (Nepal)
cm ³	cubic centimeter
CNY	yuan (PRC)
CPR	common property resource (Nepal)
DFID	Department for International Development (United Kingdom)
DFO	district forest office (Nepal)
DS	Divisional Secretariat (Sri Lanka)
EDCG	Environment Donor Coordination Group (Pakistan)
EIA	environmental impact assessment
ENSO	El Niño Southern Oscillation
EPB	Environmental Protection Bureau (PRC)
FAO	Food and Agriculture Organization of the United Nations
FECOFUN	Federation of Community Forest Users of Nepal
FMD	foot-and-mouth disease
g	gram
GDP	gross domestic product
ha	hectare
HYV	high-yielding variety
IMF	International Monetary Fund
ITKH	indigenous technical knowledge holder
IUCN	International Union for Conservation of Nature
kg	kilogram
km	kilometer
km ²	square kilometer
Lao PDR	Lao People's Democratic Republic
LF	leasehold forestry (Nepal)
LFUG	leasehold forestry user group (Nepal)
LRMP	land resource-mapping project (Nepal)
m	meter
m ²	square meter
MDG	Millennium Development Goal
MSSRF	M.S. Swaminathan Research Foundation (India)
NAC	National Advisory Committee (PRC)
NCS	national conservation strategy
NEMAP	National Environment Management Action Plan (Bangladesh)
NGO	nongovernment organization
NR	Nepalese rupee
NTFP	nontimber forest product

ORM	Onggi River Movement (Mongolia)
PEP	Poverty and Environment Partnership
PGUS	Panchabati Grama Unnayan Samiti (India)
PRA	participatory reflection and action (Pakistan)
PPA	participatory poverty assessment
PPB	participatory plant breeding (India)
PRC	People's Republic of China
PRI	Panchayat Raj Institution (India)
PRSP	poverty reduction strategy paper
R	Indian rupee
RBNP	Royal Bardia National Park (Nepal)
RCNP	Royal Chitwan National Park (Nepal)
RECOFTC	Regional Community Forestry Training Centre for Asia and the Pacific
RNA	Royal Nepal Army
SARS	severe acute respiratory syndrome
SDC	Swiss Agency for Development and Cooperation
SEPA	State Environmental Protection Administration (PRC)
SLR	Sri Lanka rupee
SPA	strictly protected area
UNCED	Rio de Janeiro Conference on Environment and Development
VDC	village development committee (Nepal)
VJFM	village joint forest management
VSB	village seed bank (India)
WHO	World Health Organization
WSSD	United Nations World Summit on Sustainable Development
WWF	World Wide Fund for Nature
YEDP	Yunnan Environment Development Program (PRC)
YPG	Yunnan Provincial Government (PRC)
YSDAP	Yunnan's Sustainable Development Action Plan (PRC)

