

Casebook on Innovative Activities for Achieving Sustainable Development in Asia and the Pacific



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**Casebook on
Innovative Activities for
Achieving Sustainable
Development
in Asia and the Pacific**

Asia-Pacific is at the forefront of global discussions on sustainable development and the melding of environment and economic policies. From access to clean water to biodiversity conservation and sustainable agriculture - community involvement and investment when solving environmental challenges is crucial to managing local resources. In order to move towards and realize sustainable development on a larger scale, proven-successful practices at the grassroots should be contextualized and replicated across Asia-Pacific. As a group of regional experts, the Asia-Pacific Forum for Environment and Development addressed critical issues facing the region and proposed new models for equitable and sustainable development. Two programmes resulted from the forum, the APFED Showcase Programme and the APFED Awards.

With 58 projects in 20 Asia-Pacific countries, the APFED Showcase Programme has engaged with stakeholder organizations, namely civil society organizations, non-governmental organizations, research institutes and government agencies to assist them in piloting creative technologies and practices for poverty alleviation and sustainable development. On the other hand, the APFED Awards recognized innovative actions and promoted information dissemination of good practices. The two initiatives collected lessons and experiences from innovative activities implemented in the region in order to promote sustainable development and share knowledge and wisdom with other stakeholders concerned.

The result of the APFED Showcase Programme and APFED Awards has been a collection of valuable lessons from experimental, community-level sustainable development initiatives. The projects promoted societal transition to sustainable development through capacity building and civil society participation. The Showcase and Award projects enabled local stakeholders to realize their innovations in policy development, technology application, social mobilization and partnership building. Many have succeeded in meeting the environmental challenges and needs of local communities and are fit to act as proven-successful models for equitable sustainable development solutions in the areas of climate change, 3R, biodiversity, water and capacity development.

The casebook shares not only lessons from project innovations and implementation, but successful initial and long-term project results in pilot communities. It identifies an array of crucial project factors, highlighting the importance of focus on and involvement of the community, optimization of local resources, gender and social inclusion, stakeholder mobilization and empowerment, and linkage with macro policy. The Casebook on Innovative Activities for Achieving Sustainable Development in Asia and the Pacific aims to promote tested micro-solutions as scalable initiatives, able to be picked up and replicated as part of the broader strategy for sustainable development in the region.

APFED Showcase Programme Secretariat
United Nations Environment Programme
Regional Office for Asia and the Pacific



Kaveh Zahedi

Regional Director and Representative for Asia and the Pacific,
United Nations Environment Programme

Environmental problems caused by unrestrained growth – from air pollution to destruction of forests and ecosystems - are becoming so severe in the countries of Asia-Pacific that they are undermining development. But many countries and communities in the region have put in place innovative pilot programmes and projects to promote economic development without undermining their natural resources and capital. The Asia-Pacific Forum for Environment and Development (APFED) Showcase Programme has brought together key stakeholders, mobilized expertise and enabled civil society to experiment with innovative actions for sustainable development. These innovative actions cover a diverse range of issues including climate change, biodiversity and ecosystems, waste, water management and stakeholder empowerment. This casebook showcases the best of these innovative actions and draws out empirical lessons and valuable insights gained during the implementation of the projects and beyond. As countries look to finalise and begin implementation of the Sustainable Development Goals – the new global roadmap for development - the casebook brings together examples of successful initiatives that could offer insights for solving ongoing environmental challenges and helping to put Asia-Pacific on a more sustainable path. The casebook and the many extra ordinary APFED initiatives showcased here were made possible thanks to the generous support of the Government of Japan and the Ministry of the Environment. We hope the casebook offers a small glimpse of the possibilities of turning Asia-Pacific’s development pathway towards greater environmental sustainability by investing in its innovative communities and peoples.

A handwritten signature in blue ink, consisting of a stylized 'K' followed by a series of loops and a long horizontal stroke.



Yoriko Kawaguchi

Professor, Meiji Institute for Global Affairs, Meiji University,
Former APFED Chair, Former Minister of Foreign Affairs,
Former Minister of the Environment,
Former Member of the House of Councillors of Japan

The Asia-Pacific Forum for Environment and Development (APFED) brought together experts, institutes and stakeholders to spearhead innovation for sustainable development. I am pleased to learn the continuous progress in materializing peoples' compassion to improve the environment and livelihood. Our knowledge and spirit in pursuit of sustainable development must be amplified and transferred to the younger and future generations for effective actions. I look forward to hearing more success stories in Asia and the Pacific in achieving development.



Emil Salim

Chairman of Advisory Council to the President of the Republic of Indonesia,
Former Minister of the Environment

Asia and the Pacific still need to move forward more proactively and expeditiously toward achieving sustainable development. Each one of us has a role to play in advocating, supporting and participating in actions for achieving sustainable development. The APFED Showcase projects are the concrete evidences that prove the important role played by the stakeholders in pursuing sustainable development. We must further reinforce our efforts to promote policy implementation and field actions for achieving sustainable development.



Cielito F. Habito

Professor of Economics, Ateneo de Manila University,
Philippines Former Secretary of Socioeconomic Planning

Asia and the Pacific, as the most diverse and at the same time the most dynamic region in the world today, needs to pursue a sustainable future through concrete policy measures and activities to conserve and harness the planet as our shared home. The international community is about to invigorate its efforts to achieve Sustainable Development Goals that set specific goals and targets by 2020 and 2030. The prototypes presented in this booklet would be very useful guides for the operational pursuit of those goals, demonstrating how with creativity and innovativeness, people and communities can be led to constructive action toward sustainable development and uplifted lives. I am pleased and honored to have been part of APFED, which encouraged and supported these worthy initiatives, and I thank and congratulate the Government of Japan through the Ministry of the Environment for making all these happen.

A handwritten signature in black ink, appearing to read 'Cielito F. Habito'.



Akio Morishima

President and Director General, Japan Environment Association,
Special Research Advisor, Institute for Global Environmental Strategies (IGES)

It is imperative for us to continue our endeavours for establishing a sustainable society. The Asia-Pacific Forum for Environment and Development was one of the initiatives to mobilize wisdom and catalyse innovative actions for achieving sustainable development. Stakeholders in Asia and the Pacific still require further support to engineer, replicate and upscale good practice and facilitate policy and institutional transformation. I hope that the empirical lessons drawn from the APFED Showcase Programme will inspire stakeholders in the region and instigate our collective endeavours for achieving sustainable development.

A handwritten signature in black ink, appearing to read 'Akio Morishima'.



Parvez Hassan

President, Pakistan Environmental Law Association, former Chair,
World Commission of Environmental Law of the International Union for
Conservation of Nature (IUCN)

Empowering stakeholders and building their partnership are a prerequisite for achieving sustainable development. With the timely and meaningful access to information and participation in decision-making over environmental matters, stakeholders can drive collective actions for achieving sustainable development. Asia and the Pacific must reinforce efforts to refurbish enabling policies and institutions. The evidences of actions undertaken with the support of the APFED Showcase Programme must instigate our quest for sustainable development.



Hironori Hamanaka


























































Chair, Board of Directors,
Institute for Global Environmental Strategies (IGES)

Economic and population growth continue to pose multiple challenges to our aspiration towards achieving sustainable development. We are under increasing pressure to facilitate a transformation that requires ingenuity and breakthrough by making use of innovative approaches and multi-stakeholder partnerships. The APFED Showcase and Award projects demonstrate useful intuition and I hope that many more such endeavours will follow suit and strengthen their alignment on the path to sustainable development.







































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APFED Showcase Programme - Project Profile and Update

























































































































Northeast Asia

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Collection and Treatment Schemes for E-waste	2007	     	30
Enhancing Professional Ability of Volunteer Lawyers for Environmental Protection via Training Programme	2008	     	31
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APFED Award - Project Profile and Update









Northeast Asia

 China						
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 Korea, Rep. of						
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Southeast Asia

 Indonesia						
Public-Private Partnership for Improving Waste Management, Mitigating Climate Change and Promoting Community Development	2008	Silver	      	98		
 Philippines						
Institutionalising Local Mechanisms for Integrated Sustainable Water Management and Water Governance	2006	Incentive	      	99		
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The Working Ducks with Women Power for Agriculture Governance and Rice Sufficiency	2009	Silver	      	101		
 Viet Nam						
Promoting Public Participation in Protection of Vietnam's Wildlife via Education for Nature - Vietnam's Wildlife Crime Hotline	2007	Incentive	      	102		

South Asia

 Bangladesh						
Disappearing Land: Supporting Communities Affected by River Erosion	2007	Gold	      	103		


















Improving Rural Livelihoods: Promoting Sustainable and Safer Vegetable Production	2008	Silver	     	104
India				
Gram Nidhi: Eco Enterprises for Sustainable Livelihoods in Ecologically Semi-Arid Rural Areas	2007	Silver	     	105
Transforming Lives and Landscapes - ITC's Integrated Watershed Development Programme	2007	Incentive	     	106
Building Zero Energy Development Communities to Mainstream Sustainability - T-Zed Homes	2008	Incentive	     	107
Promoting the Ingenious Use of a Plant Invasive, Lantana Camara, to Enhance the Livelihood of the Forest Dwelling Communities	2009	Gold	     	108
Promoting Coconut-Based Agro-Ecosystem and Efficient Product Utilization for Augmenting On-Farm Income, Improving Quality of Environment and Conserving Natural Resources	2009	Incentive	     	109
Nepal				
Mitigation of the Effects of the Carbon Dioxide and other Greenhouse Gases by Controlling Slash and Burn Practices	2008	Gold	     	110
Sri Lanka				
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Special appreciation is expressed to the APFED members who served on the APFED Showcase Panel and Award Selection Committee. The APFED Showcase Panel was chaired by Akio Morishima for 2006-2010, and its members were Myun-Ja Kim, Parvez Hassan, Tongroj Onchan and Vinya S. Ariyaratne (2006-2007), Cielito Habito, Emil Salim, Parvez Hasssan and Reza Maknoon (2008-2009), and Cielito Habito, Emil Salim, Sanit Aksornkoe and Parvez Hassan (2010).

The APFED Award selection Committee was chaired throughout 2006-2009 by Yoriko Kawaguchi and its members were Cielito Habito, Emil Salim, Reza Maknoon and Hans Van Ginkel (2006-2007), and Sanit Aksornkoe, Vinya S, Ariyaratne, Myung-Ja Kim and Yuqing Wang (2008-2009).

Support for Showcase project evaluations and Award project case studies came from a wide range of collaborating partners, particularly the members of the Asia-Pacific Regional Network of Policy Research Institutes for Environmental Management and Sustainable Development (NetRes) mentioned in the subsequent section of the overview.

Gratitude is also extended to all colleagues and various partners who contributed manuscripts to this booklet. Most importantly, we would like to express our deepest respect to all those who have supported the exemplary projects highlighted in this casebook, in both demonstrating and sharing their wisdom and compassion towards sustainable development.

APFED Showcase Programme Secretariat
United Nations Environment Programme
Regional Office for Asia and the Pacific

Acronyms

APFED	Asia-Pacific Forum for Environment and Development
ADB	Asian Development Bank
APP	Asia-Pacific Partnership on Clean Development and Climate
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CISMCS	Committee of International Sound Material-Cycle Society and Environmental Conservation
CITES	Convention on International Trade in Endangered Species of Wild Life Fauna and Flora
CO₂	Carbon Dioxide
COP	Conference of the Parties to the United Nations Framework Convention on Climate Change
CSR	Corporate Social Responsibility
EPR	Extended Producer Responsibility
ESD	Education for Sustainable Development
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
GDP	Gross Domestic Product
GHG	Green House Gases
IEA	International Energy Agency
IGES	Institute for Global Environmental Strategies
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
MEA	Millennium Ecosystem Assessment
NASA	National Aeronautics and Space Administration US
NGO	Non Governmental Organization
OECD	Organization for Economic Co-operation and Development
OPG	Ontario Power Generation Inc.
PA	Protected Areas
PCB	Polychlorinated Biphenyl
PPP	Public-Private Partnerships
PPP	Polluter Pays Principle
RPS	Renewable Portfolio Standard
REDD	Reducing Emissions from Deforestation and Degradation
SCP	Sustainable Consumption and Production
UN/DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNEP/ROAP	United Nations Environmental Programme Regional Office for Asia and the Pacific
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
US-EIA	US Energy Information Administration
3Rs	Reduce, Reuse, Recycle

Overview of the Asia-Pacific Forum for Environment and Development

The Asia-Pacific Forum for Environment and Development (APFED) was launched in 2001 as a forum to address critical issues facing the Asia-Pacific region and to propose a model of equitable and sustainable development for the region. The 26 members nominated by countries in the region and international organizations, participated in the forum at their individual capacity. The APFED Report, formulated through a series of meetings among the members and with stakeholders from 2001 to 2004, consists of an overview of the Asia-Pacific region, APFED's future vision of the Asia-Pacific, APFED recommendations, and the APFED action platform.

The APFED Action Platform intended to implement the APFED recommendations and be the “knowledge management” and “innovation facilitation” center of the region. The Action Platform embodied the second phase of APFED (APFED II, 2005 to 2010) and comprised of three complementary components, namely multi-stakeholder interactive channels – APFED Multi-stakeholders Dialogue; sustainable development knowledge initiative – APFED Database of Good Practices; and innovation showcases for sustainable development – APFED Showcase Programme.

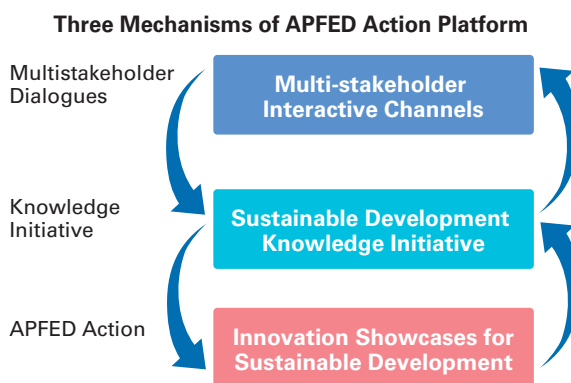


Figure1: APFED Action Platform

The APFED Multi-stakeholders Dialogue was designed to stimulate interactions among concerned stakeholders through multitudes of consultations to catalyse policy discussions with stakeholders and, whenever possible, to forge concrete means to address priority issues in realizing a sustainable future for the region.

The APFED Knowledge Initiative was intended to establish an effective knowledge management through a network of databases that contained extensive examples of good practices for sustainable development in the region. The APFED Award was devised to incentivise civil society groups and other key players to provide information updates on their innovative initiatives through recognition of the best practices.

The APFED Showcase Programme was conceived to put innovative ideas into practice on an experimental basis to verify whether the proposed ideas are congruent with the prevailing political, economic and social and natural conditions and facilitate their widespread application.

The Institute for Global Environmental Strategies (IGES) served as the Secretariat for APFED to oversee the implementation of the Multistakeholders Dialogues and Knowledge Initiative and be the centre of knowledge in promoting sustainable policies and activities in the region. The Regional Office for Asia and the Pacific of the United Nations Environment Programme (UNEP ROAP) supported the Forum as the Secretariat for APFED Showcase Programme to assist partner organizations in implementing

and monitoring the Showcase Programme funded projects, and disseminating information on progress and good practices to pursue sustainable development.

The IGES also acted as the Chair of the Asia-Pacific Regional Network of Policy Research Institutes for Environmental Management and Sustainable Development (NetRes). NetRes is comprised of eight prominent research institutes from the region, providing strategic

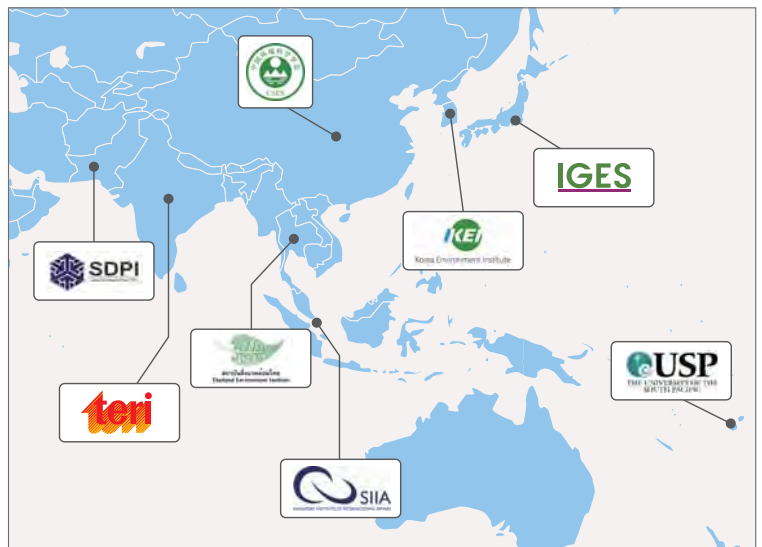


Figure 2: Map of NetRes Members

research to support the Knowledge Initiative and to promote participatory monitoring, technical guidance and evaluation of the Showcase projects, as well as to build capacity for sustainable development actions in the region through the virtual cycle of “doing and learning”.

The APFED is a key example of involving UNEP and a wide range of collaborators in the region to demonstrate directions for achieving the common goal of sustainable development in Asia-Pacific proposing a model for equitable and sustainable development in the region and catalyzing the goals of the post-2015 Sustainable Development Agenda.

Showcase Programme

Following two pilot projects in 2005, APFED Showcase was fully launched the following year, with funding from the Ministry of the Environment, Japan. Since then, the programme has supported many non-governmental organisations, local governments, community-based organisations and worked with prominent research institutes throughout 20 countries in the region.

Through the provision of catalytic funding of up to USD 30,000, APFED Showcase helped to foster 58 pilot projects that sought to realize creative ideas, innovative technologies and alternative practices to solve critical environmental challenges within local communities. By providing grants for these experimental projects, APFED Showcase Programme created enabling conditions at the community level for poverty alleviation and sustainable development. A total of 978 grant applications were received from the region and beyond during 2005 to 2010, and finalists were competitively selected by the APFED Showcase Panel.

Each selected pilot project was also paired with a NetRes member institute based on geographical location and area of expertise. The NetRes members took on the role of mentoring, monitoring

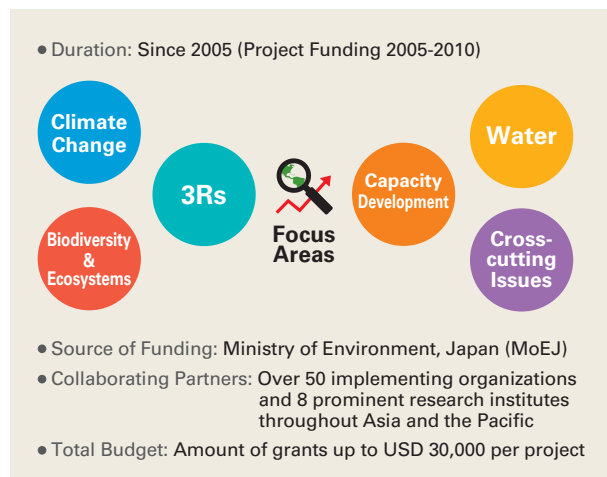


Figure 3: Snapshot of the APFED Showcase Programme

and evaluating each project with which they were paired. NetRes members also helped promote the Showcase model at international fora, engaging in knowledge sharing and incorporating lessons learned into international policy processes. The use of regional NetRes institutes aided in the creation of valuable vertical and horizontal partnerships under the programme. Knowledge sharing occurred vertically from local to regional and global levels and also horizontally, as researchers from different NetRes institutes shared information with one another.

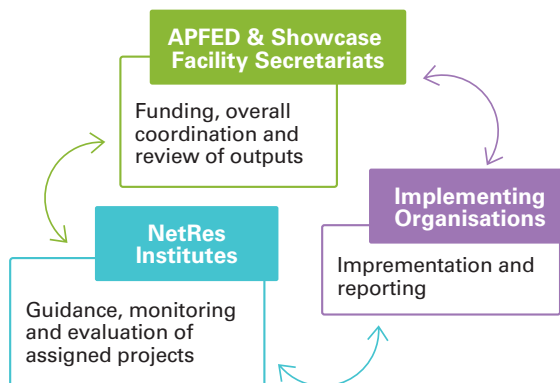


Figure 4: Components of APFED Showcase Programme

The Showcase projects deeply and effectively engaged with NetRes and integrated stakeholders like civil society, government agencies, and academic institutes at regional, national and subnational levels. From climate change, biodiversity conservation, and resource resilience to water security and capacity building, the APFED Showcase Programme promoted societal transition to sustainable development by recognizing the value of, and investing in, local innovations.

The effective partnership formed between the project implementers, NetRes institutes and APFED Showcase Programme Secretariat has helped to generate many success stories in Asia-Pacific, which are highlighted throughout the publication. APFED’s strength lies in harnessing this power of partnerships with multi-stakeholders at various strata of the society, and the Showcase Programme has been continuing to do so by working to inspire further collaborative actions between stakeholders across other regions.

The Programme has also provided opportunities to partners to extensively disseminate the results, good practices and lessons from the projects through national, regional and global platforms like *Green Economy Green Growth Forum, TARAGram Yatra, Sustainable Development Conference, Regional Major Groups and Stakeholders Consultation, Asia Park Congress, Asia-Pacific Adaptation Forum, World Conservation Congress, CBD COP11, and Rio+20 Conference*.

The APFED Award

Under the APFED Knowledge Initiative, the APFED Awards for Good Practices was launched in 2006 as well. The Programme was designed to acknowledge the exemplary practices in promoting sustainable development in Asia and the Pacific and aid the accumulation of information from the region for the Database of Good Practices. Over the 2006–2009 period, 217 projects were submitted for the Award selection process and Award prizes were given to 27 projects in total. IGES spearheaded case studies of the winning projects in collaboration with the NetRes member organisations or local experts with the view to facilitating the dissemination of knowledge and expertise on innovative practices for achieving sustainable development and their potential replication across the region.

Both Showcase and Award projects have evoked high levels of volunteerism within their communities, increasing stewardship of local resources and linking stakeholders to decision-making processes in a number of environmental areas.

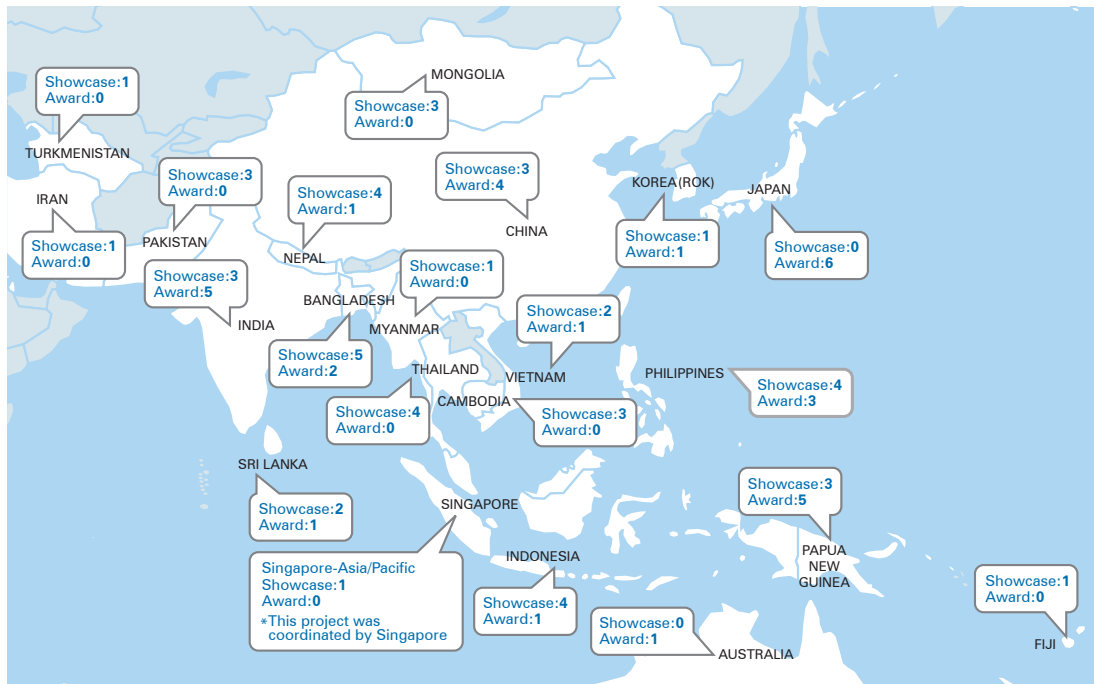


Figure 5: Map of selected APFED Showcase and Award Projects

Climate Change Projects have contributed to:

- The establishment and utilization of a community-managed bio-energy processing centre in Sri Lanka. The biofuel project directly and indirectly contributed towards fulfilling villagers' energy needs while simultaneously having socio-economic impacts on the families involved in the project.
- The creation of a crab co-operative society and mangrove protection society to lead the community in mangrove restoration and crab fattening for improved livelihoods in Bangladesh.
- At least 50 Cambodian farmers adopted the climate change adaptation and mitigation measures as an integrated part of their farming system – resulting in increased productivity and income diversification for beneficiaries.

3R Projects have contributed to:

- Changing community behavior and encouraging the practice of waste composting in Fiji.
- Building an eco-village with composting bins, waste segregation stations in tsunami-affected areas in Sri Lanka.
- Methane removal from solid-waste landfills via a Clean Development Mechanism in Indonesia.

Biodiversity and Ecosystems Projects have contributed to:

- Cambodian rice producers' agreement not to convert valuable forest habitat of the endangered Ibis crane into paddy land – rather, they can label their rice products with an Eco-certificate that increases the value of their rice on the market.
- The rehabilitation of cadmium contaminated paddy land through multi-stakeholder partnership actions in Thailand.
- The development of community-based eco-tourism and pastoral agro-forestry in Mongolia.

Water Projects have contributed to:

- The creation of a multi-stakeholder forum on integrated water management – an instrumental body for promoting stakeholder driven natural resource management in the Philippines.
- The establishment of sustainable tourism criteria and a Sustainable Tourism Certification scheme for all tourism-related businesses in the Philippines.
- Access to safe drinking water in remote areas of Pakistan via the production of Nadi Water Filtration systems alongside community health and hygiene training.

Capacity Development Projects have contributed to:

- The national assessment on public access to environmental information, which led to the development and adoption of the legislation “The Right to Information Act of 2008” in Bangladesh.
- A map inventory on natural resources, biodiversity and poverty was prepared and a livelihood survey was conducted; income generating activities have been promoted to develop skills of squatters and villagers to produce honey, broom, furniture, herbs and medicinal plants, seedlings, cut flowers, and organic fertiliser; a sustainability information centre was created at a local school, in the Philippines.
- Training on elephant deterrent methods was conducted in areas of Cambodia with high levels of human-wildlife conflicts.

Cross-Cutting Projects have contributed to:

- The publishing of a green procurement handbook for public and private organisations in Thailand.
- The construction of a wind-induced aerator system for water purification and remediation of riverbank erosion in canals using bio-remediation techniques in India.
- The development of advanced technologies for identifying and detecting changes in carbon storage at the village level in Viet Nam, which informed new forest protocol, including the accounting and trading of community carbon.

Project Portfolio Areas of Showcase and Award Projects

The Showcase Programme and Awards selected the innovative projects that addressed one or more priority thematic areas of climate change, resource resilience and biodiversity and ecosystem management. The three priority policy areas corresponded to international environmental policy processes, namely the United Nations Framework Convention on Climate Change (UNFCCC), Asia 3R Forum and the Convention on Biological Diversity (CBD). Some Showcase and Award projects focused on areas like water, capacity development and others, where the latter area incorporated projects that addressed cross-cutting or sectorial issues such as environmental infrastructure, environmental finance or social development.

APFED Showcase and Award projects substantively address environmental governance, ecosystem management and climate change. Disasters and conflicts are not explicitly addressed, although some projects possess linkages with disaster prevention, mitigation and conflict resolutions. Geographically, Northeast Asia focuses highly on environmental governance, while ecosystem management is most intensively addressed in Southeast Asia as in climate change in South Asia.

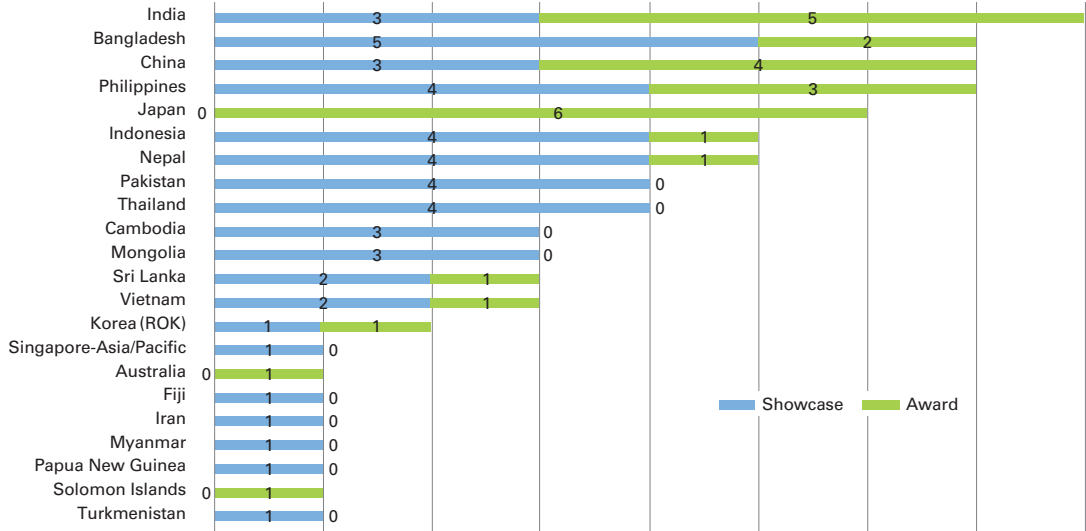


Figure 6: Number of selected APFED Showcase and Award Projects by Country

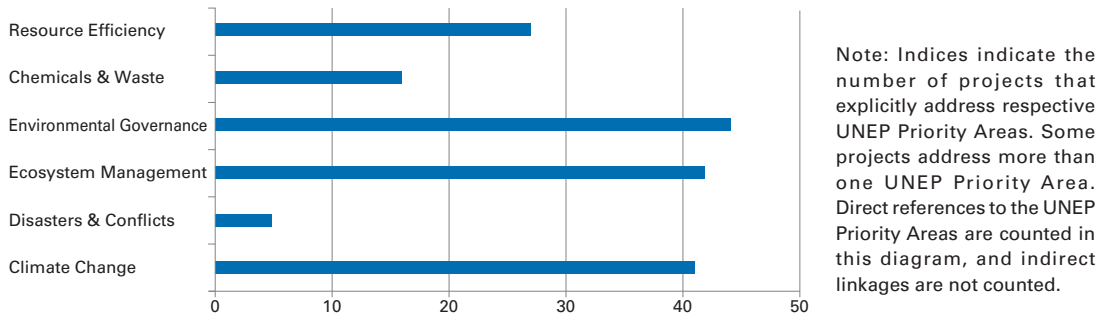


Figure 7: Indices of UNEP Priority Areas addressed by APFED Showcase and APFED Award Projects (n=85)

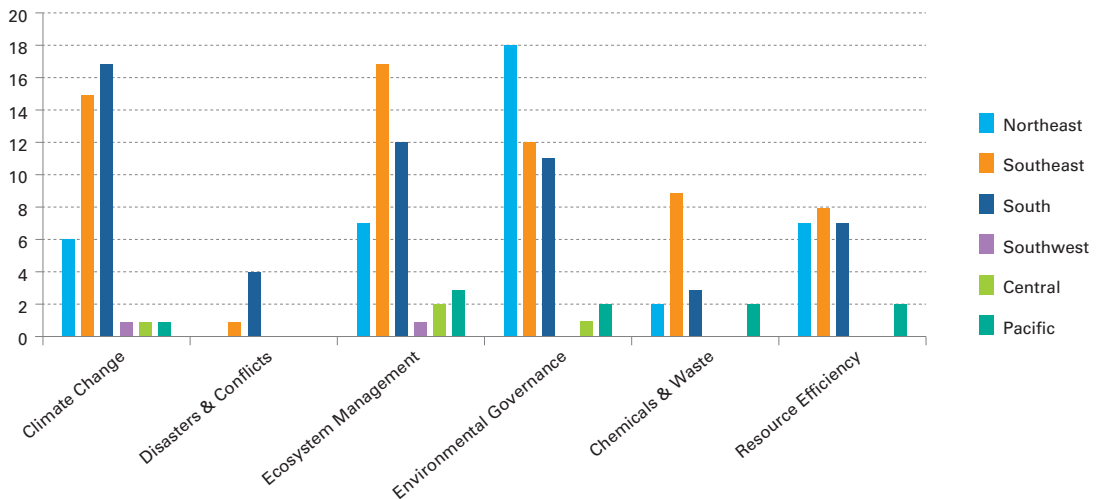


Figure 8: Frequency of UNEP Priority Areas APFED Showcase and APFED Award Projects, by Subregions of Asia-Pacific

Key Accomplishments

Each of the 58 APFED Showcase projects and the 27 APFED Award-winning projects demonstrate innovative, stakeholder-driven activities in pursuit of sustainable development. The Programmes have garnered lessons from project implementation, and of successful results and lasting benefits on the local communities. These successes have led to international awards and recognition of individual pilots and have helped to create a continuing demand for APFED, specifically the APFED Showcase Programme. The following are some of the highlighted achievements and identified factors of success:

- Ona Keto Community Reforestation Project in Papua New Guinea (2007 APFED Showcase Programme) received the **Energy Globe 2010 – National Award**
- Sustainable Development of Settlements in Karakum Desert in Turkmenistan (2007 APFED Showcase Programme) received the **Energy Globe 2010 – National Award**
- Setting up Rice Husk Gasification Model Project in Vietnam (2008 APFED Showcase Programme) received the **Energy Globe 2010 – National Award**
- Appropriate Technology Park for Climate Change Adaptation and Environment-friendly Coping Strategy in Bangladesh (2008 APFED Showcase Programme) received the **Energy Globe 2011 – National Award**
- The Project Manager of the Promotion of Access to Environmental Information in Bangladesh (2006 APFED Showcase Programme) was awarded the **Goldman Environmental Prize 2009** and **Ramon Magsaysay Award 2012**.
- The Project Manager of the Community Conservation of Asian Elephants in Cambodia was awarded the **Goldman Environmental Prize 2010**.

Demonstrating Policy Nexus

At a glance, the goals of economic growth and conservation appear to be at odds. However, as the international community has demonstrated through applying the principles of green economy, these two concepts go hand in hand. Nowhere is this more apparent than at the grassroots level. Poor communities throughout the region disproportionately depend upon the primary products of bio-diverse ecosystems for their subsistence needs, and thus, suffer great economic losses alongside the loss of biodiversity. Over the last decade, poverty reduction and ecosystem conservation efforts have been integrated into sustainable development projects that seek to deliver co-benefits in both areas. Many of the APFED projects successfully demonstrated various combinations of such policy nexus – for example, simultaneously addressing health and sanitation and poverty eradication in Pakistan; enhancing livelihoods through agroforestry in Nepal and introducing alternative livelihoods which protect wildlife in Cambodia. Despite varying cultural landscapes, these projects that successfully demonstrated policy nexus illustrated a number of similarities: Community knowledge and involvement, optimization of local resources and investment in alternative livelihoods and technologies.

Promoting Participation in Policy-making Processes

The participation of civil society is a critical in sustainable development decision-making processes, from local community goals to regional and global agendas. There is a strong international consensus that civil society holds a vital role in shaping the means to solving poverty, climate change and economic challenges. As a group, they help to improve understanding of the value of the natural environment and assist in developing innovative solutions to specific challenges across many levels. Stakeholder dialogues were common features among many of the Showcase and Award projects. These dialogues assisted communities to organize themselves in an effective manner, and build capacity, helping them to understand and protect their rights and interests in natural resource management and environmental conflicts.

Setting New Green Standards for Businesses

Business practices represent a major component in maintaining a healthy environment and economy. APFED projects succeeded in creating meaningful and lasting community-business partnerships, drafting and enacting green procurement guidelines and developing and promoting green products and eco-product purchasing patterns. In Sri Lanka, partnerships between private, public and civil society organizations were founded to improve community livelihoods by facilitating access to energy sources whilst safeguarding natural resources and minimizing dependence on fossil fuels. Through these partnerships, electricity is provided to some 10,000 off-grid households and facilitated the development of new income-generation activities.

Developing Markets for Environmentally-friendly Goods and Services

Much of the rural poor have missed out on the economic growth occurring in Asia-Pacific. Many people still live under the poverty line. The integration of environmentally sound products into the marketplace, through carving out market niches or filling existing gaps, is an excellent tool to achieve multiple benefits to poor communities. Poverty alleviation and biodiversity conservation have been achieved through practices such as eco-labelling and eco-certification and through eco-enterprises to produce goods that don't require resource-intensive production practices. An important element to their success was the underpinning of environmental education and promotion of eco-friendly goods to the general public. Multiple benefits were achieved using eco-certification schemes for selling rice produced without habitat destruction of endangered animals, as well as, promoting energy efficient light bulbs.

Building Capacity and Infrastructure for Sustainable Development

The cornerstone of strong and lasting positive changes to communities is to foster leadership and educate stakeholders to understand the principles of sustainable development and apply them to solving challenges within their communities. This not only helps to ensure that decision-makers are on the right path, but also empowers communities with the knowledge they need to pursue their unique visions for the future. Trainings, workshops and the creation of eco-clubs and public information centres were created at higher-education institutions and colleges to build capacities within civil society to address issues of poverty, environmental degradation, water availability and environmental rights that not only empowered them but also brought along conservation.

Demonstrating Environmentally Sound Technology

Sustainable innovations that utilize local knowledge and expertise have been a key ingredient to APFED projects throughout the programme. One of the areas of innovation that has demonstrated note-worthy positive results is the creation of appropriate sources of energy for rural communities, such as solar power and micro-hydro. These projects enabled community members to pursue alternative forms of livelihood and income-generating activities that were initially unavailable options due to lack of access to electricity. Innovations in eco-technologies also helped to solve other basic, community needs such as wind-induced aerator system for water purification and pest pheromone traps for controlling insect predation on vegetable production.

Mobilising Communities for Collective Action

Local civil society groups can deliver a wide range of development benefits when empowered to manage their ecosystems and natural resources. These benefits extend well beyond poverty reduction and livelihood gains and encompass the social, economic, and environmental dividends that underpin sustainable development. APFED projects have mobilized communities to take steps towards sustainable development. In Myanmar, organic farming was established and continues to be managed by the local community. This project has helped to protect the biodiversity of Inle Lake – a major source of livelihood in the area and a wildlife refuge. Communities have also come together to combat illegal wildlife trade in Viet Nam by establishing a wildlife hotline that can be used to report illegal activities. In Fiji, eco-bags were distributed to the public to promote the use of non-plastic bags and encourage the practice of composting throughout the community with involvement of youth.

Providing Platforms for Regional and Inter-regional Cooperation

The study on green consumerism has proposed mechanisms for Asia and the Pacific to promote eco-products and green consumption; while the “Corporate Sustainable development Responsibility (CSdR) concept was launched for promoting CSdR in Asia and the Pacific. These individual projects created platforms for potential regional and inter-regional cooperation. On the other hand, the Showcase Programme has reached out to link the individual projects to international fora like the Rio+20 Summit and CBD COP11 to provide platform for widespread application of innovations. The demand from across Asia-Pacific and beyond for the concept of domestic water filtration system conceived in Pakistan evinces the potential of a simple innovation for intra and inter regional cooperation. The provision of platforms to the project implementers and NetRes members supports the international community’s call to scale-up and replicate good practices through South-South and Triangular cooperation.

Addressing Gender and Social Inclusion

It is widely recognized that societal roles of men and women hold profound influence over the use and management of natural resources. Policies and programmes across local, national, regional and international levels now address gender as a central factor for sustainable development. A large number of APFED projects not only incorporated specific gender dimensions in their work plans and activities but managed to empower women, youth and indigenous groups at the grassroots. Many did so through the inclusion of women’s groups as key actors in project initiatives. The projects that promoted gender-inclusive activities helped to improve the local economies through women’s participation in income generating activities. Additionally, women’s groups often drove the livelihood initiatives within the APFED projects, taking on other various opportunities for

livelihood improvement, such as participating in capacity-building health and hygiene workshops and leading recycling and environmental education efforts. Gender-inclusive activities proved to be crucial to the success of many of the projects, particularly those with a direct focus on improving livelihood options. For instance, the bio-fencing project in Nepal targeted to reduce human-wildlife conflict in the buffer zones saw the rise of the indigenous women taking active role in farming aromatic plants for oil extracts.

The Showcase and Award projects also addressed social inclusion on a broader scale. Communities are the key to creating and sustaining a positive relationship with the environment and combatting climate change. Recognising and respecting local knowledge of ecosystems and landscapes is also crucial. The projects focused on a wide variety of activities, which acknowledged and built upon local cultures, from empowering indigenous groups in Papua New Guinea to manage land resources to training youth groups in Fiji to lead waste management education initiatives. Notably, many projects focused on community development via social inclusion activities. For example, addressing religious conflict between societal groups to solve environmental problems and improving working conditions for indigenous miners for environmental conservation.

Lessons Learnt

The APFED projects not only demonstrate achievements in the poverty reduction and environmental conservation fronts, but also grant insights into the challenges to sustaining, replicating and scaling-up community-based activities for sustainable development. The following key lessons have been distilled from across the APFED pilot projects.

Create Constructive Partnerships

Partnerships can greatly strengthen the transition to sustainable development. They can help communities overcome major barriers like lack of effective legislative and regulatory framework, institutional capacities, and public and private investments. They are a mechanism by which to improve these weaknesses by increasing awareness of the concept and goals of the sustainable development agenda across all levels of the global society, harnessing support from civil society, governments and the private sector; enhancing capacity-building efforts by utilising the unique strengths of each partner involved and providing access to new knowledge and technologies. In sectors that greatly affect the economies of local communities, partnering to implement innovative activities help reduce some of the initial risks associated with investing in new community practices or industry processes. The partnership mechanism of the Showcase programme helped grantees to accomplish their goals by offering a financial and technical support system.

Vertical partnerships between local level organisations and research institutes and the APFED Showcase Secretariat and horizontal partnerships amongst the research institutes proved an invaluable framework. The presence of well-rounded stakeholder relationships increased knowledge sharing and strengthened the ability of each faction to complete their respective roles within the projects. Community level, tangible evidence of the impact of successful and effective partnerships is witnessed within many of Showcase Projects.

Understand Community Characteristics

In replicating good practices, it is vital to assess community characteristics during the planning process, including cultural impacts, gender and social inclusiveness, available natural resources and socio-economic conditions. Assessment of community reliance on local natural resources and reflection upon local socio-economic conditions greatly enhances the probability of project success. Some of the APFED Showcase projects enacted mid-term activity adjustments in light of previously un-identified community characteristics that created project barriers. Training for conducting participatory community appraisal is also required to help avoid setbacks.

Build Stakeholder Participation and Develop Stakeholder Capacity

Participation of stakeholders in decision-making and project implementation to enhance the community's sense of ownership is essential for success of projects with long-term impacts on sustainable development. Continuous public participation remains crucial for ensuring long-term

and effective implementation and monitoring. Many of the Showcase and Award projects focused on including formerly marginalized groups, such as women or indigenous tribes. Local civil society groups can deliver a wide range of development benefits when empowered to manage their ecosystems and natural resources. These benefits extend well beyond poverty reduction and livelihood gains and encompass the social, economic, and environmental dividends that underpin sustainable development. The post-2015 sustainable development framework has considered local level action and empowerment to take advantage of this transformative potential.

Effectively Inform, Educate, Communicate

Disclosure of and access to information on best practices, environmental risks and solutions is crucial to meeting pilot project objectives. Many of these project actions came in the form of information disclosures such as green product labeling and sustainability certificates - powerful tools for bringing about shifts in behaviour and instilling sustainability policy principles. Such enabling mechanisms help to set a cornerstone, upon which additional mechanisms can be built. Capacity development, outreach and media campaigns are effective tools to garnish community support for project initiatives. General outreach materials such as signs, pamphlets and public service announcements should be produced utilising a variety of media, including face-to-face communication in local languages and visual materials. Upgrading online presence by utilising web-based networks, improving public knowledge centres and strengthening available features of the APFED Good Practices Database has proven highly beneficial to programmatic reach regionally and internationally.

Provide Lasting Co-Incentives

Income generation and economic incentives need to be incorporated as a component of sustainable development initiatives, and these additional benefits must be sustained for long-term project success. APFED Showcase projects that enhanced income, reduced status-quo expenses or resource use or improved corporate benevolence within a community are sustained at a greater rate than those that sought to initiate environmental solutions in the absence of co-benefits to civil society.

Measure Success and Failure Equally

Measuring project impacts across longer periods of time will become increasingly important in order to mobilise public support for initial project activities. The international community is calling for implementers to build upon past successes, utilising enabling mechanisms to improve actions such as technology sharing. Increasingly, it is important to link local activities with the missions and goals of international programmes. Technical skills to bring about effective use of technology-sharing mechanisms needs to improve to ensure effective results assessments, reporting and verifying of project impacts.

Increasingly, there is also a strong emphasis on recognizing the value of drawing lessons from project failures. Many donor organisations are now providing incentives that do not penalize project failures – opening up the door for new pilot projects to test innovative sustainable development solutions. The insights and pitfalls documented within failed projects is equally valuable information that can lead to greater successes and lesser losses in the future.

Assure Consistent Policy Development

Sustainability policies that arise out of pilot projects must be actively maintained and reinforced to achieve a high level of effectiveness. This means that the capacity of public leadership and political will behind it must be strong and have clear vision. Additionally, it is valuable to conduct capacity building exercises that help communities play a role in assuring a consistent sustainability policy trajectory from their political leaders. Training in these areas for both leaders and civil society can also help rectify attempts to derail policies away from the principles of sustainability in the longer run.

Connect Field Action with Macro-policy Transformation

Linking field actions with macro-policy transformations is consistently cited as one of the most difficult achievements in the development sector, and with good reason. For example, the local initiatives in APFED Showcase projects represent a vast array of available development solutions to help address existing and emerging environmental challenges and economic impacts. Yet, these successful initiatives are not strongly linked to national, sub-regional and regional institutional policy mechanisms for sustainable development. However, the gaps to integrating and streamlining the post-2015 Sustainable Development Agenda across all levels are becoming clearer: Low awareness of existing opportunities, inadequate mechanisms for community-level best practices to feed into national and sub-regional institutions via knowledge sharing and technology transfer. In order to improve the odds of linking successful project outcomes and best practices with broader development policies, new and innovative enabling mechanisms for scaling up and replication are still needed.

Link Community Projects to Major International and Regional Sustainable Development Policy Processes

To average citizens in developing countries, global sustainable development policy processes can appear lofty and abstract. As demonstrated by the Showcase projects, citizens in Asia-Pacific are often faced with the daily challenge of meeting basic needs – and are thus, disconnected from international and regional development targets. Sustainable development projects are being carried out throughout the region in isolation. However, local community involvement and investment in broader sustainable development goals and the post-2015 Sustainable Development Agenda is crucial to solving many broader, regional environmental threats. It is essential that national, regional and global sustainable development initiatives include and integrate bottom-up contrivances into the overall architecture of the sustainable development agenda. The development community needs to identify national, regional or global architecture that can better incentivize local solutions, more deeply connect them with the broader post-2015 Sustainable Development Agenda and SDGs and support them to flourish.

APFED Showcase Programme

Project Profile and Update

Year	Number of Projects
2005	2
2006	12
2007	12
2008	13
2009	9
2010	10
Total	58

-  Climate change
-  Disasters and conflicts
-  Ecosystem management
-  Environmental governance
-  Harmful substances
-  Resource efficiency

Collection and Treatment Schemes for E-waste

Project Site Location Suzhou city, Jiangsu Province

Background – Problems Addressed and Policy Responses

China has been experiencing rigorous challenges regarding waste electronics and electric equipment (WEEE) since the drastic increase in e-waste from 2003. The government has focused on e-waste management, and in recent years has approved a series of regulations. However, there are many socio-environmental problems related to e-waste; e.g., in Suzhou, most e-waste is collected by individual merchants.



E-waste recycling

Project Outline – Objectives and Activities

In order to create a systematic e-waste recycling and disposal system at the city level, a series of activities has been conducted, including: establishing e-waste collecting demonstration sites in two communities; carrying out e-waste collection and publicity activities in the demonstration city; carrying out laboratory research and facilitating to set up a used/old computer dismantling and recycling pilot project; and establishing an information system platform in BCRC China to support the e-waste collection system in the demonstration city.

Impacts and Achievements

This project has proposed two schemes; one for collecting e-waste from different organisations in the demonstration city and one on best-available technology on e-waste recycling for developing countries. Informational seminars covering experiences related to the managerial and technological aspects of recycling e-waste have been delivered to other cities at the city level. During the seminars, schemes for e-waste collection and on the best-available technology for e-waste recycling in developing countries were disseminated between the different cities and specialists.

Future Challenges

Pressures resulting from a profit-driven market involving unregulated e-waste recycling was one of the key challenges for effective operation of the e-waste collecting sites, for which two countermeasures were adopted. The lack of related policies and regulations on e-waste collection presents another challenge, one key response to which is to enhance the management of and focus on e-waste collection within local governments so as to promote establishment of the policies.

General Information

Name of Implementing Organization:

Basel Convention Coordinating Center for Asia and the Pacific (BCRC China)

Type of Organization: Other (National organization with regional function)

Contact Information: Jinhui Li, Executive Secretary

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Project Monitoring and Review (NetRes/Collaborators):

Lei WU, Chinese Society for Environmental Sciences (CSES) E-mail: aiawu80@gmail.com

Enhancing Professional Ability of Volunteer Lawyers for Environmental Protection via Training Programme

Project Site Location Beijing

Background – Problems Addressed and Policy Responses

Though China boasts a great number of lawyers, only a small minority deal with environmental cases. To enable deployment of more of such lawyers within society, from 2007 ACEF started environmental volunteer lawyer recruitment and training, gradually forming a body of professional lawyers knowledgeable in environmental protection and law, which facilitated legal practice.



Member of All China Environment Federation

Project Outline – Objectives and Activities

The volunteer lawyer training seminar in this project lasted three days. Guest lecturers came from state legislature, administrative units and leading environmental jurists; at the same time, discussions proceed in connection with many cases accepted by the Center for Environmental Legal Service, integrating theory with practice, which produced a body of lawyers appropriately qualified to deal with environmental law, thereby laying the foundations for improved handling of environmental disputes.

Impacts and Achievements

As the largest environmental NGO within China, ACEF has actively cooperated and assisted the Chinese government in completing tasks on environmental protection, and sets out to safeguard public and social environmental rights and interests. Through centralised and systematic learning, participants have acquired further knowledge of current environmental conditions. The training class offered rich and diversified content, from environmental legal theory to lawsuit case practice, enabling volunteer lawyers from all around the country to be closely involved with the problems and issues surrounding environmental rights protection.

Future Challenges

The biggest challenge is how to recruit more volunteer lawyers into the training programme to deal with environmental issues. A further challenge lies in the need to increase public awareness of the availability of legal recourse in respect of infringements pertaining to environmental rights.

General Information

Name of Implementing Organization: All-China Environment Federation (ACEF)

Type of Organization: NGO/CBO

Contact Information: Xiaoyi Gao, Director, Department of International Cooperation
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Website: <http://www.acef.com.cn/>

Project Monitoring and Review (NetRes/Collaborators):

Lei Wu, Chinese Society for Environmental Sciences (CSES)
E-mail: aiawu80@gmail.com



Public Participation in Environmental Rights Protection

Project Site Location

Ganyugou Village, Tangshan City, Hebei Province

Background – Problems Addressed and Policy Responses

Ganyugou is a small village of 240 inhabitants in 92 households, with 500 mu* of arable land supporting perennial agricultural crops. However, life was decimated upon exposure to flooding of contaminated water and coal dust pollution discharged by the neighbouring Douhe Electric Power Plant. The education and environment protection ministries pledged to investigate and provide assistance. *mu=Chinese acre land measurements



Women of Ganyugou village attending the small symposia held for the publicity of the round-table meeting

Project Outline – Objectives and Activities

The main objective of this project is, via a round-table dialogue*, to solve the long-lasting conflicts between the power plant and the villagers on the issue of environmental pollution. It is designed to help the two sides reach a common understanding through the building of a public alliance on environmental rights protection, and provides training for alliance members in Beijing and Chengdu based on the theme of public participation in environmental protection.

*Round-Table Dialogue on Flooding and Coal dust Pollution Problem of Ganyugou Village - Public Participation

Impacts and Achievements

Douhe Electric Power Plant offers reasonable compensation for the problems it creates, and has pledged to pursue clean production methods via improvements to production facility infrastructure. Successful implementation of the project has provided an innovative dispute-solving mechanism to local government and the rest of China by advocating public participation and communication, and as such has the potential for resolving other environmental pollution-related cases. It is a clear example of improvement in the living environment via an innovative environmental dispute-solving mechanism.

Future Challenges

Since the resolution of the power plant dilemma involved many setbacks along the way, the provision of expert support in the formulation of environmental policies, laws and regulations and gathering of evidence would be highly valued. Further, monitoring via news organisations and the media, as well as environmental supervision and monitoring should also be utilised, as appropriate.

General Information

Name of Implementing Organization:

All-China Environment Federation

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Community-Business Partnership for Conserving Energy and Mitigating Climate Change

Project Site Location

Xiaolan Province, People's Republic of China

Background – Problems Addressed and Policy Responses

The Institute for Sustainable Communities (ISC) and its partner organizations provide training to conserve energy and quantify the saving. “Eco-point” is given by ISC to the households and organizations that submit the record of energy saving. Eco-point is exchanged with the goods and services provided by the business companies and public entities under the community-business partnership.



Public consultation for energy saving

Project Outline – Objectives and Activities

Zhongshan Xiaolan Low-carbon Development and Promotion Center (XLLCDPC) and its partner institutions provide training and establish carbon accounts for participating families and entities. The carbon credits are given to families and entities for the reduction of carbon/greenhouse gases (GHGs) emissions through energy-saving. A project steering team was formed by the representatives from each stakeholder. The team implements and monitors the project.

Impacts and Achievements

The project covered more than 100 households and 10 enterprises that voluntarily participated in the project. The trainings were conducted to promote the better understanding on the mechanisms of energy-saving and carbon credit accounting. A series of awareness raising activities and campaigns were undertaken to promote energy-saving and GHG emission reductions. Prize giving ceremonies were also organized to acknowledge the achievements made by the households and enterprises in making energy-saving and carbon credits, and demonstrating partnership for providing goods and services exchanged with the eco-points allocated based on the carbon credits. The case studies were conducted and their reports were released.

Future Challenges

The momentum needs to be further instigated in order to keep the enterprises involved and enlarge the business sector participation in the carbon credit/eco-point program. XLLCDPC have been striving to convince the business of their corporate social responsibilities for continuing and enlarging their participation in the program. XLLCSPC also interact with the Xiaolan Township Government to support this community-business partnership and program. The households must ensure their energy saving practices consistently.

General Information

Name of Implementing Organization: Institute for Sustainable Communities (ISC) and Xiaolan Low-carbon Development & Promotion Center (XLLCDPC)

Type of Organization: Non-governmental Organizations

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Project Monitoring and Review (NetRes/Collaborators):

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Rehabilitating Desert Zone Ecosystems and Promoting Sustainable Alternative Livelihoods in Gobi Protected Areas, Buffer Zones and Peripheral Communities

Project Site Location South Gobi Province

Background – Problems Addressed and Policy Responses

Climate change poses an increasing threat to Mongolia - its variable climate, rising mean temperatures, declining average precipitation and drought and desertification coupled with over-grazing hamper local livelihoods. It is therefore vital to promote sustainable natural resource management in the Gobi desert area, through agro-pastoralism and managing protected *saxaul* woodland areas.



Youth excavating soil to lay pipes for irrigating farmland

Project Outline – Objectives and Activities

The project is aimed at raising community awareness of sustainable natural resource management - specifically, through (i) optimal use of pasture land, (ii) restoration of degraded pasture land, (iii) small scale farming, (iv) efficient water resource management, (v) protected *saxaul* woodland conservation, and (vi) partnership building. Activities included awareness-raising campaigns, target group discussions, irrigation pipe installation, fencing protected areas, and mobilising watchdog groups.

Impacts and Achievements

Assessments were conducted on natural resource management and its impacts; Workshops were held for local herders, villagers and youth groups to raise awareness of optimal water and pasture use, and for managing fenced windbreak zones; Irrigation systems 750 m in length were restored in the windbreak fenced zones; A 50 x 50 meter square area of *saxaul* forest was fenced off, with a conservation sign board added; Focused group discussions were organised for local communities to play a watchdog role against illegal goyo collection; and alternative livelihood options such as use of solar cookers and hand craft making were introduced.

Future Challenges

Options for promoting optimal pasture and water use to simultaneously increase productivity and income need to be further explored and verified; Alternative livelihood options need to be made available for illegal goyo collectors while also enforcing measures against illegal goyo collection; Agreements need to be forged between communities over water and land use in the process of expanding vegetable farming in the communal areas; and inter-community and multi-stakeholder collaboration have to be further strengthened for promoting collective action.

General Information

Name of Implementing Organization: Institute of Geoecology, Mongolian Academy of Sciences

Type of Organization: Governmental Research Institute

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Multi-stakeholder Partnership Building to Promote Education for Sustainable Development

Project Site Location

Ulaanbaatar, Hustai, and Khelen Bayan

Background – Problems Addressed and Policy Responses

Sustainability, within the context of rapid socio-economic transformation, needs to be further mainstreamed to raise public awareness and prompt behavioural changes. As part of the UN Decade of Education for Sustainable Development of 2005 -2014 initiative, it is intended to strengthen the policy, institutional and programmatic framework in Mongolia in order to promote education in sustainability.



Comic booklet on dryland management

Project Outline – Objectives and Activities

To forge social capacity on ESD*, it was proposed to (i) promote multi-stakeholder policy dialogue on developing social capacity to undertake ESD, (ii) conduct assessment of ESD activities particularly in higher education, (iii) develop a national action plan on ESD, (iv) support ESD curriculum development for higher education, (v) establish a national network of educational institutions for promoting ESD, (vi) promote media campaigns and (vii) undertake pilot activities for ESD activities at the National park and tourist camps.

*ESD: Education for Sustainable Development

Impacts and Achievements

Multi-stakeholder dialogues were convened and a National Action Plan on ESD was developed; Gaps and challenges were clarified through a questionnaire survey; A network of universities and educational institutions was established; The *Handbook for Environmental Auditing* was published and Environmental Management for Enterprises and Business Entities documentation was developed; The Club of Environmental Journalists was established to promote media coverage and awareness-raising; *Reporting the Environment: A Handbook for Journalists* was translated into Mongolian and published; Workshops were held and educational panels were set up in Khustai and Terelj National parks.

Future Challenges

Further efforts are required to transform policy documents and training materials into concrete activities to bring about a sustainability-oriented mindset; Knowledge and experience in sustainability issues needs to be recognized as an asset for those seek employment opportunities; Impacts of ESD on human behaviour and environmental performance need to be discerned via numerical indicators; Pilot waste-water recycling and organic fertilising projects need to be further pursued at the National park and campsites.

General Information

Name of Implementing Organization: ECO Asia (Mongolian Environmental Education and Research Institute)

Type of Organization: NGO/CBO

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Livelihood Improvement of Informal Gold Miners in Zaamar Goldfield

Project Site Location Tov Aimag, Zaamar Soum

Background – Problems Addressed and Policy Responses

Drought, snow storms and pasture degradation have undermined rural herder livelihoods, resulting in artisanal mining. The number of these miners-known locally as *ninja*, a Japanese term referring to medieval warriors - has reached 100,000. They work in harsh conditions with no land entitlement or health insurance, and are regularly exposed to toxic chemicals such as mercury and cyanide.



Artisanal and small scale miners called "Ninja"

Project Outline – Objectives and Activities

The project is intended to improve the safety and livelihoods of artisanal and small-scale miners, including youth, women and children. Activities were undertaken to (i) provide information and training on the risks involved in mining, (ii) train on proper storage and management of toxic chemicals, (iii) inform of alternative livelihood opportunities, (iv) develop a database on wildlife and the environment, and (v) promote policy dialogue towards amendment of the mining law and to legislate rights and obligations of artisanal miners.

Impacts and Achievements

A survey was conducted on the artisanal miner households and the local environment; Training sessions were conducted on artisanal miners regarding the safety measures and proper mining methods to prevent accidents and exposure to toxic chemicals; A mining law amendment recognising the rights and obligations of artisanal miners was drafted and heard at the parliament, then promulgated in July 2010 - artisanal miners and their communities are now organised to promote safe, environmentally-sound and sustainable mining; Training was provided on alternative livelihoods and scholarships for youth, and a database on local wildlife, environment and sustainable mining was developed.

Future Challenges

Compliance monitoring and enforcement measures need to be strengthened on safety measures and management of toxic chemicals; Mechanisms need to be built to reduce detrimental environmental impacts caused by excavated soil; Measures need to be enhanced in the treatment of effluent and wastewater from washing soil; Multi-stakeholder dialogues need to be facilitated on environmental management and mineral resources to ensure long-term equity and sustainability, and benefit-sharing mechanisms need to be pursued among miners and local non-mining communities.

General Information

Name of Implementing Organization: Mongolian Nature and Environment Consortium

Type of Organization: NGO/CBO, Governmental Research Institute

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Climate Friendly and Biodiversity Nurturing Community Based Eco-tourism and Pastoral Agroforestry in Eslen Tasarkhai, Bulgan Province, Mongolia

Project Site Location Mongolia / Bulgan / Rashaant

Background – Problems Addressed and Policy Responses

The project is implemented in Khugnu Tarna National Park in the Orkhon Selenge river basin. Rural people have migrated to this area searching for better livelihoods with agriculture and developed urban infrastructure. The migration has been increasing over the past two decades and has been posing mounting threats to biodiversity and ecosystems due to unregulated grazing, unorganized touristic routes and irrational use of water sources.



On site training on sustainable use of land and natural resources

Project Outline – Objectives and Activities

The objectives aims to develop an alternative livelihood and resource use through developing and applying methodologies for community-based ecosystem valuation, demonstrating ecosystem functions and ecological and cultural values, developing social capacity to retain and expand carbon sinks, promoting income generation for eco-and cultural tourism, and undertaking trainings for local farmers on model farms and vegetable/crop gardening, eco-tourism and other micro-businesses.

Impacts and Achievements

The project achieved its goals to establish a community-based model of sustainable land use, conserve biodiversity, reduce GHG emissions and mitigate land degradation. The foundation of reaching these goals was built by improving scientific understanding, increasing knowledge, sharing experiences, supporting local level policy development and educating youth. These approaches of demonstrating models and building stakeholders' capacity have proved to be effective as the training and capacity building activities have increased local community's awareness and equipped them with the knowledge to plan and formulate action plans to meet their basic needs through sustainable land and natural resource use.

Future Challenges

The proper delivery of scientific information built a foundation to help mitigating the conflicts among stakeholder groups particularly in connection with priority setting, training program development, and the choice of land use. However, stakeholder groups still hold differing perceptions, knowledge and the education level. It remains important to properly understand the interests and characteristics of various stakeholders and identify common grounds to identify, agree upon and implement measures for promoting sustainable land and natural resource use.

General Information

Name of Implementing Organization: Institute of Geo-ecology, Mongolian Academy of Science

Type of Organization: Governmental Organization

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Supporting Green Consumer Initiatives

Project Site Location Korea (ROK)

Background – Problems Addressed and Policy Responses

To establish green consumption initiatives and consumerism mechanism development plans applicable to Asia, case studies that verify factors related to facilitation of green consumption and consumerism need to be conducted, for which it was considered Korea exemplified good potential as a testbed.

Project Outline – Objectives and Activities

Considering the example of Korea, this study analysed Korean consumer recognition and use of eco-products and examined eco-product production and consumption to help address the necessity of universal green purchasing initiatives applicable to the Asian region. In order to investigate product purchasing and use among consumers, this study utilised FGI (Focus Group Interviews), CLT (Central Location Tests), gang surveys, and other analytical methodologies.



The Korean Government E-Procurement System

Impacts and Achievements

This study involved analysis of Korean consumer recognition and use of eco-products and examined their production and consumption in general to help address the necessity of universal green purchasing initiatives applicable to the Asian region. Verification of the primary factors related to green consumption was conducted via a pilot project, which led to development of initiatives, mechanisms and strategies for promotion of green consumption in the various regions of Asia.

Future Challenges

The results of this project need to be diversely exploited to establish a green procurement policy and marketing strategies to publicise eco-friendly products in Korea and other countries in Asia.

General Information

Name of Implementing Organization:

Korea Environmental Industry & Technology Institute (KEITI)

Type of Organization: Other (Semi-Governmental Organisation)

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Study on Linkage of Sustainable Development Between Agricultural Sector and Environment/Human Health

Project Site Location

Kampong Chhnang Province

Background – Problems Addressed and Policy Responses

Solid waste has become an environmental problem in Cambodia, and also caused further problems, including ill health, water contamination and climate change. Although the Government of Cambodia attempted to alleviate the solid waste problem via the issuance of regulations such as the Sub-Decree in Solid Waste Management, no regulations related to the 3Rs or solid waste composting are in place.



Participation of local people

Project Outline – Objectives and Activities

This project aims at alleviating the solid waste problem - as well its concomitants - by demonstrating the usefulness of organic waste composting to local stakeholders, especially farmers. Composting improves solid waste management, reduces open burning and usage of chemical fertilisers and alleviates water contamination. To demonstrate such benefits, a pilot composting scheme involving application of organic compost to pilot vegetable and rice plantation sites was initiated, and training and site visits were arranged for stakeholders.

Impacts and Achievements

The project was a success in terms of demonstrating a win-win approach for managing solid waste; through composting it reduced organic solid waste from households and markets, and the organic compost obtained proved usable as a substitute for chemical fertiliser. Additionally, reductions in solid waste and use of chemical fertiliser offer the potential for alleviating related human health and environmental problems.

Future Challenges

Although the project in Kampong Chhnang province successfully demonstrated the feasibility, as well as benefits of reducing solid waste via composting, broadening the scope of this activity to effect widespread uptake by the local farmers - crucial to solving the organic solid waste problem - remains a challenge.

General Information

Name of Implementing Organization:

The Technical Working Group, Ministry of Environment, Cambodia

Type of Organization: Governmental Organisation

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Wildlife-friendly Products: Linking Community Agricultural Cooperatives to Biodiversity Conservation

Project Site Location

Kulen Promptemp Wildlife Sanctuary and Preah Vihear Protected Forest, Preah Vihear Province

Background – Problems Addressed and Policy Responses

In Cambodia, forests are habitats for large mammals and water birds, but these forests are disappearing due to rapid population growth and associated pressures on land and resources. In the targeted area, agriculture has limited use for livelihood due to the low prices offered by traders. Wildlife and habitat conservation is the key for socio-economic development in such communities.



Ibis rice

Project Outline – Objectives and Activities

This project provides a solution to break the poverty cycle for sustainability through producing ibis rice via establishment of a responsible certification agency that bypasses middlemen, facilitating contracts on price premiums whilst respecting land use and wildlife protection regulations by farmers, investigation of the certification process and links to a “wildlife-friendly” brand, and implementation of training for farmers in order to add value to their products and raise farming incomes.

Impacts and Achievements

Through this project, both environmental conservation and poverty alleviation are achieved. For poverty alleviation, marketing materials were developed and disseminated to other areas. Some villages built proper infrastructures for storing paddy ibis rice, and others target villages are under construction. Also, possible markets for ibis rice have been identified. In terms of wildlife conservation, wildlife numbers are increasing, and climate change mitigation has been achieved. These achievements have led to incentives to protect habitable land, as well as rice premiums of at least 25% to 50% over the 2007/8 baseline for farmers.

Future Challenges

The project led to successful contracts with several restaurants and hotels in Siem Reap for selling ibis rice at premium prices. The next step, expanding the market, is crucial. Application of this pilot project to a wider area and increasing the participating villages needs to be considered. Activities are linked with securing protected area management. In terms of global warming and sustainable forest management, REDD+ could also be introduced.

General Information

Name of Implementing Organization:

Wildlife Conservation Society - Cambodia Program, International NGO

Type of Organization:

NGO/CBO

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Community Conservation of Asian Elephants

Project Site Location

Four villages affected by Human Elephant Conflict (HEC)

Background – Problems Addressed and Policy Responses

Habitat degradation and losses, civil war and illegal poaching have led to a significant reduction of wild Asian elephants in Cambodia. Forest conservation and sustainable resource management are crucial for the protection of elephant habitats. Thus, effective management of land use and improvements in farming practices among the rural and indigenous communities will help stabilise the elephant population.



Recording elephant crop damage

Project Outline – Objectives and Activities

The project will secure, protect and conserve the Asian elephant and its habitat in the Cardamom Mountains of southwest Cambodia through community-based capacity building. The project will assist selected poor rural communities affected by human-elephant conflict to coexist with wild elephants by improving farming practices to increase productivity and income and awareness raising on elephant conservation. The project has four components; 1) Human-elephant conflict reduction, 2) Community-based land use planning, 3) Livelihood improvement, and 4) Primary level education.

Impacts and Achievements

The Cambodian Elephant Conservation Group has been working since 2005 to stabilise the national wild Asian elephant population. In cooperation with Fauna & Flora International, the Ministry of Environment and the Forestry Administration, it has helped 30,000 people in farming communities to coexist with wild elephants by improving their farming practices, by providing elephant deterrent methods and education to raise awareness of elephant conservation.

Future Challenges

Population growth and development is a future challenge that is likely to contribute to increasing use of natural resources. Encroachment into forests will lead to habitat fragmentation and reduce the elephant population. Population increases may also lead to intensive farming. Communities may not follow sustainable methods of resource utilisation and farming practices may require further improvements.

General Information

Name of Implementing Organization:

Fauna and Flora International

Type of Organization:

NGO/CBO

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Integrated Rural Energy Development Platform (IRED Platform) Promoting Fuel Efficient Technologies and Agro-ecological Techniques for Adapted and Affordable Climate Change Resilience and Mitigation

Project Site Location Kampong Chhnang province /
Samaki Meanchey district, Cambodia

Background – Problems Addressed and Policy Responses

About 20,000 families live in the target area. They depend on agriculture including palm sugar and charcoal production that cause forest degradation. Due to the poor soil conditions, agricultural productivity stagnates and climate change risks food security. The Integrated Rural Energy Development Platform (IRED) aims at reducing biomass energy consumption and encouraging the production of fuel wood with food crops.



Energy efficient stoves produced and distributed to the villagers and farmers

Project Outline – Objectives and Activities

The main objective of the project is to improve villagers' adaptive capacity to climate change in areas where fuel wood-dependant activities are predominant. The project aims at reinforcing the communities' capacities in coping with climate change impacts and at the same time in mitigating it through introducing energy efficient technologies and environment friendly practices associated with farm-tree interaction. It is the purpose that behavioral changes towards agro-ecological practices will be facilitated by the IRED platform through the demonstration and promotion of affordable and practical techniques.

Impacts and Achievements

In this project, the resource center was established to undertake trainings and receive visitors. The center is equipped with 2 rainwater catchments, retention ponds, a tree seedling nursery, a home-garden demonstration plot and a room to showcase energy efficient technologies. The center was used by 60 farmers. 50 farmers have adopted the climate change adaptation and mitigation measures as an integrated part of their farming system such as agroforestry. The center possesses the list of farmers who implemented agroforestry models. Farmers have increased farm and fuel wood productivity, diversified income sources and improved energy efficiency through fuel efficient stoves.

Future Challenges

The training center and lodging facilities for farmers need to be upgraded. It is also proposed to organize the training closer to the dwellings of farmers. The limited land space constrains the capacity of the training, lodging facilities and demonstration sites. 2 ponds are still short of water supply to the demonstration site. Soil fertility needs to be improved. It is proposed to construct a charcoal kiln, but the wood sources for charcoal need to be further harnessed.

General Information

Name of Implementing Organization: Group for Environment, Renewable Energy and Solidarity (GERES)

Type of Organization: Non-governmental, Non-profit organization

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Project Monitoring and Review (NetRes/Collaborators): Thailand Environment Institute (TEI)

Community-based Educational and Partnership Action - Carbon Neutral Initiative for Community Empowerment and Climate Change Mitigation

Project Site Location Lombok and Bogor

Background – Problems Addressed and Policy Responses

Indonesia is undergoing a rapid increase in energy demand, projected to grow by 20% from 2010-2015. At the same time, President Yudhoyono has announced intentions to reduce the country's greenhouse gas emissions by 41% with international assistance by 2020, with renewable energy being one of the key policy measures to achieve this target. Indonesia has vast potential for micro-hydro power generation.



Micro-hydro power generation in Bogor

Project Outline – Objectives and Activities

Under this project, it was proposed to (i) review policy measures and projects that address micro-hydro power generation, (ii) assess the potential of micro-hydro power generation in Bogor and Lombok, undertake stakeholder discussions on the pilot project plan of micro-hydro power generation, (iii) create mechanisms for benefit-sharing of micro-hydro power generation, (iv) document achievements and challenges to share information, and (v) promote awareness-raising and education on sustainability and micro-hydro power generation activities for project replication.

Impacts and Achievements

A policy review and case studies on micro-hydro power generation were conducted, and in 2009 a micro-hydro power generation station was set up in Sukaharja village in Bogor, rated at 5,500 W, with power distribution grids installed in 2010; Three beneficiary groups were set up, consisting of 18 households and a set of three public lighting locations; Agreements were made for payment of 35,000 IRP/month by each household, 27% less than the national power utility company, PLN; Public awareness and outreach activities were undertaken to inform the public; A preliminary feasibility study was conducted in Lombok to review local conditions.

Future Challenges

To reduce dependency on fossil fuel, power generation needs to be switched from PLN to micro-hydro in both on- and off-grid communities, but installation costs and subsidies makes it difficult to attract investment, as power prices would need to be raised above those set by PLN. Further, other renewable energy sources need to be utilised to complement micro-hydro, in accordance with precipitation, sunlight and topographical conditions in the various areas. Plans addressing such would also need to integrate income generation.

General Information

Name of Implementing Organization: Center for Economic Research, Indonesian Institute of Science (LIPI)

Type of Organization: Governmental Research Institute

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Improving Agricultural Practices in Peat Soil in West Kalimantan

Project Site Location

District of Kubu Raya, West Kalimantan, Pontianak

Background – Problems Addressed and Policy Responses

Peatland provides benefits to society by controlling floods, hosting a diversity of species and in its potent action as a carbon sink. In West Kalimantan, peatland is rapidly declining due to human activity, including agriculture. The Indonesian government has attempted to promote innovations in the agricultural sector to cope with the several related problems, which include fertilizers and the environment.



Field trip

Project Outline – Objectives and Activities

The aims of this project are to promote the construction of a standardised on-farm irrigation system, reduce zero burning and reduce the use of organic fertilisers and pesticides, thereby reducing the negative impacts of agricultural activities on the peatland, which are over-drainage, peat subsidence, destruction of peatland hydrology and reduced carbon sink potential. Activities in the project include construction of demonstration plots, training, field visits and cross-site visits, and publication of leaflets and posters.

Impacts and Achievements

The implementation of the project created a number of successful results, which had positive impacts on the peatland. One example is turning arid land into cultivatable land via construction of an on-farm irrigation system and use of organic fertiliser. The participating farmers demonstrated high motivation for reducing the use of chemical fertilisers and growing new varieties of crops. The project improved dialogue and cooperation between governmental staff and the local farmers, and also led to a policy recommendation for the government of the District of Kubu Raya to create a programme to increase the availability of organic fertilisers.

Future Challenges

This project showed that a combination of training, demonstration sites, and cooperation among different stakeholders shows promise as regards improvement of agricultural activities with minimal impacts on the peatland. The challenge for this project is to disseminate the practices to other farmers utilising peat soil to grow crops on. The provision of education modules to educate farmers on suitable practices and the tropical peatland ecosystem is one means of disseminating information and knowledge from this project.

General Information

Name of Implementing Organization: Yayasan Swadaya Dian Khatulistiwa (YSDK)

Type of Organization: NGO/CBO

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Gianyar Waste Recovery Project

Project Site Location

Town of Temesi, Regency of Gianyar, Province of Bali.

Background – Problems Addressed and Policy Responses

Bali, Indonesia's primary travel destination, faces an escalating waste problem that already affects its tourist sector. In the formerly pristine environment, waste is now burned roadside or disposed indiscriminately in rivers and canals, thus polluting also beaches and coral reefs. The waste problem in Bali, like elsewhere in Indonesia, needs urgent attention.



Compost made from organic waste

Project Outline – Objectives and Activities

The goal of this pioneering waste-recovery project is to contribute to a cleaner environment with a viable model for solid waste management that can be replicated in most of Indonesia's 457 Regencies and smaller cities. By composting organic waste, about 250,000 tons CO₂ equivalent of the greenhouse gas methane will be avoided. An important complementary component of the project is an educational environment theme park - the first of its kind in Indonesia - next to the Waste Recovery Facility.

Impacts and Achievements

The planned and expected outcome is a low-cost and low-tech decentralised model for environmentally friendly solid-waste processing that is sustainable and can be replicated elsewhere. The achievements were: Centralisation of "Waste-to-Energy" facilities as a low-risk waste recovery model; reduction in climate change, waste volume, and emission amount of hazardous substances; recovery of non-renewable resources; awareness-raising of a model large scale waste recovery facility; and establishment of a theme park focused on climate change, solid and liquid waste management, renewable resources, alternative energy and the like.

Future Challenges

The challenges are: dealing with the delay between paying for external CER verification (20,000-40,000 USD) and the payback, which takes 3-5 years; reducing the percentage of garden waste (90%; mainly *Chanan* flower offerings on square palm leaves, which slows down the compost process), and kitchen waste (10%); and tackling the problem of overflow from the facility that needs to be landfilled when the 60 ton capacity of the facility - the largest and first of its kind in Indonesia - is insufficient.

General Information

Name of Implementing Organization:

Yayasan Gelombang Udara Segar (Yayasan GUS or GUS Foundation)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Pursuing a Chemical-free Bamboo Treatment Process via Biomass-fired Kilns to Develop Small and Medium scale Rural Bamboo Industries

Project Site Location Ubud, Bali and East Java

Background – Problems Addressed and Policy Responses

Bamboo, through its benefits to ecosystems and economic value, holds tremendous potential to support sustainable development in Indonesia. However, it remains underutilised in the construction and handicraft industries because of its image as “poor man’s timber” and the need for costly chemical treatments for preservation against pests and fungal rot. Hence, a safe and easy treatment method was called for.

Project Outline – Objectives and Activities

The goal of this APFED-funded project is to develop a cost-effective, environmentally-friendly and replicable method to treat bamboo for use in construction, furniture, and household products. Through collaboration between experts, the Environmental Bamboo Foundation (EBF) aims to design a bamboo treatment kiln that can be disseminated widely in order to enhance rural livelihoods in Indonesia, Asia and beyond. In working toward this goal, EBF and its partners will also develop markets for sustainably cultivated, harvested and preserved bamboo products.

Impacts and Achievements

The major hurdle to industrial takeup of bamboo is the slow and costly preservation process. As a result, bamboo is mostly used in an unpreserved form, leading to inferior quality products. However, the EBF project is now in its final stages in designing a bamboo treatment kiln that uses low-cost, low-tech and low-environmental-impact chemicals to effect preservation. Being closely linked with bamboo manufacturers, the project’s results have been verified in actual bamboo product lines. Furthermore, the Ministry of Forestry in Sulawesi has expressed interest to support the dissemination of this technology if it proves to be successful.

Future Challenges

Although the results obtained on bamboo preservation are promising, the current treatment method developed by EBF still requires faster and less labor-intensive processes, for which ideas will continue to be tested. Furthermore, in order to achieve the ultimate goal of livelihood enhancement among rural populations, EBF will need to make efforts in disseminating the new technology and in providing both financial and technical assistance to bamboo producers across Indonesia and beyond.



The current bamboo treatment system in operation – each bamboo is stacked vertically and filled with a treatment solution while being smoked

General Information

Name of Implementing Organization:

Environmental Bamboo Foundation (Yayasan Bambu Lestari Lingkungan)

Type of Organization: NGO

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Project Monitoring and Review (NetRes/Collaborators):

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Pollution Mitigation in Coastal Communities via the Multi-functional Wetland (Mangrove) Approach with Biodiversity and Sustainable Agri-business Co-benefits

Project Site Location Indonesia, West Papua province, Manokwari (site No.1) and Bintuni (main site No.2) districts

Background – Problems Addressed and Policy Responses

The economic development and agricultural expansion in the area has brought human-induced pollution and destruct the ecological integrity. Mangroves provide strong linkages to human well-being via (1) purification/detoxification of degraded water, (2) regulation of global climate change through carbon sequestration, and (3) physical buffering to climate change impacts. The multi-functions of mangroves are overlooked despite their significance.

Project Outline – Objectives and Activities

The project target is to demonstrate the urban potential of ecological engineering in pilot coastal communities in West Papua. Thisn following activities are undertaken under this project namely (1) To assess community capacity and barriers for achieving multi-functional use of mangroves with co-benefits, (2) To build relevant local capacity and networks and (3) To demonstrate regional potential of the multi-functional use of mangroves.



Work by project-hired labourers in Bintuni Tahiti Park: rearrangement of the former Enhancement area into a new 2nd Treatment zone.

Impacts and Achievements

The Asian Institute of Technology (AIT) and the University of Papua (UNIPA) conducted survey of relevant agencies and stakeholders and reviewed relevant activities. Seminars and training were organized to train stakeholders and decision-makers. Activities have been also carried out to establish a network and communication platform. The communication platform was established involving AIT, UNIPA, Marine and Fisheries Department (MFD, Dinas Perikanan dan Kelautan, Kabupaten Teluk Bintuni), and BAPPEDA (Regional Development Planning Agency of Bintuni Bay Regency, Kabupaten Teluk Bintuni). Innovative ecological engineering measures were carried out to capitalize upon benefits offered by multi-functional mangrove wetlands for an abatement of coastal pollution. Rehabilitation plans were also prepared.

Future Challenges

The project activities were slowed down due to temporal demands for natural mangrove restoration and rehabilitation, the slow pace for local development due to limited capacity in West Papua to manage international projects. Concerns remain regarding natural disasters (e.g., storms), human encroachment and the neglect of conservation actions. The staff changes and mismanagement may disrupt the intervention's implementation beyond the project duration. Consensus building takes longer. The inter-agency agreement must be respected. The communication platform needs to be sustained for consensus building and activity coordination hence the project team pain utmost attention to champion mobilization within relevant local authorities.

General Information

Name of Implementing Organization: Asian Institute of Technology (AIT)

Type of Organization: International Organization

Contact Information: Dr. Oleg V. Shipin, Associate Professor, Asian Institute of Technology (AIT), Environmental Engineering and Management, School of Environment, Resources and Development, Asian Institute of Technology, Km 54 Paholyothin Highway Klong Luang, Pathumthani 12120 Thailand
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Project Monitoring and Review (NetRes/Collaborators): Mr. Santikorn Pakdeesettakul and Prof. Sanit Aksornkoae, Thailand Environment Institute (TEI), E-mail: santikorn@tei.or.th



Integrated Multi-Stakeholder Ecosystem Approach at Inle Lake Based on Zoning Principles and Integration of Ecorestoration and Agrofarming Practices

Project Site Location

Inle Lake in Nyaungshwe Township, Taungyi District, Southern Shan State

Background – Problems Addressed and Policy Responses

Inle Lake has been providing various forms of ecosystem services, based on which the Inthar people have survived for centuries. However, their survival is now under serious threat. The wetland ecosystem and the flora and fauna have suffered continuous damage due to the use of chemical pesticides and fertilizers for floating agriculture and forest clearance on the higher plateau.



Inthar community leader is rowing his boat with regional style

Project Outline – Objectives and Activities

The main objective is to engage the five village tracts comprising 31 villages of the project area in biodiversity conservation, sustainable and effective natural resource use and ecorestoration by developing a zoning plan, experimenting “Village Lake Restoration” and promoting organic farming in floating agriculture.

Impacts and Achievements

In spite of political turmoil, there have been signs of improvement: the environmental condition of the three visited villages is orderly and clean; a number of new toilets have been constructed; organic rice planting has been initiated; a large number of illegal fishing and hunting gear has been confiscated; community development and religious activities have been actively participated.

Future Challenges

Increased use of chemicals and low water quality are real threats, and an overall land-use and strategic conservation plan are urgently needed to save the lake. Wells need digging to reduce use of bottled water. Use of chemical insecticides and fertilizers in farms needs to be reduced, and land-use zoning needs to be implemented. Organic rice and vegetable farming practices require continuous support. Carefully planned ecotourism activities should be promoted in order to preserve the environment and culture.

General Information

Name of Implementing Organization:

Biodiversity And Nature Conservation Association (BANCA)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Reducing Poverty via Promotion of Sustainable Development and Resource via Regional Centre of Expertise on Education for Sustainable Development

Project Site Location

Experimental Forest Station in Camp 7, Minglanilla, Cebu

Background – Problems Addressed and Policy Responses

A forest area in Minglanilla was declared a protected area in 2004 to promote natural resource conservation. However, squatters occupy dwellings in the protected area and entrenched poverty increases the risk of illegal logging and natural resource destruction. Therefore, poverty eradication and creating income generation opportunities are deemed prerequisites to promoting sustainable natural resource management in the area.



Composting for organic fertilizer to generate income

Project Outline – Objectives and Activities

The Regional Centre of Expertise on Education for Sustainable Development established at the University of the Philippines, Visaya College, Cebu (RCE-CEBU) initiated collaboration with stakeholders in (i) assessing local natural resource endowment and poverty, (ii) raising awareness of natural resource conservation and sustainable development, (iii) providing training on income generation through sustainable use of non-timber forest products, (iv) pursuing options for improving the environment and livelihoods, and (v) exploring multi-stakeholder partnerships.

Impacts and Achievements

A map inventory on natural resources, biodiversity and poverty was prepared and a livelihood survey was conducted; Income generating activities have been promoted to develop skills of squatters and villagers to produce honey, broom, furniture, herbs and medicinal plants, seedlings, cut flowers, and organic fertiliser; A sustainability information centre was created at a local school; Stakeholder networks centred around RCE-CEBU were strengthened; Public awareness and collaboration were promoted; Stakeholder consultations were held on options for sustainable livelihoods, such as installation of sewage treatment facilities and water purifiers and promotion of ecotourism.

Future Challenges

Knowledge on sustainability needs to be transformed into concrete action and behavioural changes, such as in the installation of sewage treatment and water purification facilities; Productivity of non-timber forest products needs to be stabilised. Bee swarms need to be restored and conserved; Ecotourism must be promoted in a sustainable manner; Partnership is expected between squatters of Camp 7 and residents in urban areas who depend on water supply and flood control measures in the camp and neighbouring forests.

General Information

Name of Implementing Organization:

Regional Centre of Expertise (RCE) of Cebu at the University of the Philippines Visayas-Cebu College

Type of Organization: Other (collaboration of the Government, organizations including NGO)

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Solid Waste Management as a Social Enterprise: A Community-based 3R Approach

Project Site Location Bago City

Background – Problems Addressed and Policy Responses

Bago was once adjudged as one of the dirtiest cities in the region, with a high incidence of poverty and malnutrition, as well as health problems arising from lack of solid waste management (SWM). This project was initiated in line with the city's community-based SWM programme to address the issues and establish a financially self-sustained community waste-collection and compost system.



A junk dealer loading recyclables collected from households and a landfill site

Project Outline – Objectives and Activities

As the first city to adopt the Takakura composting method in the Philippines, Bago became the focus for demonstration and training of this method. A composting centre within it started producing quality compost using organic waste from vegetable markets, provided to farmers and residents for free. Household-based composting was also practiced in model communities, where compost containers with seed compost were provided for free by the city. The project was assisted by local NGOs, housewife groups, schools and other citizens.

Impacts and Achievements

Key outcomes of the project were a 50% reduction in waste (from 40 to 20 tonnes/day), recognition and endorsement of the method by the National SWM Commission and transfer of the practice to other cities via city-to-city cooperation. Many households have also adopted the method and use kitchen waste compost on their land. Educational workbooks for primary and secondary schools were also made and an educational notebook was distributed to pupils as part of an informational campaign, which they use daily at school.

Future Challenges

One of the remaining challenges is to replicate composting centres throughout the city and expand the household-based composting practices to other communities. Another is in raising incomes from the sale of compost and recyclables to sustain composting centre operations and material recovery facilities (MRF). Maintaining Bago City as the national training centre for the composting method and continuing technology transfer to other key areas, as well as reproduction of workbooks for all schools within the city will remain ongoing challenges.

General Information

Name of Implementing Organization: Bago City Hall

Type of Organization: Governmental Organisation

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Community-based Wind Energy System

Project Site Location

Lamag, Quirino, Ilocos Sur

Background – Problems Addressed and Policy Responses

Selected communities are in remote areas with poor access to education, health care, transport, markets and electricity, low levels of industrialisation, and little investment and support from the local and national government. The communities produce brown sugar and syrup for satisfying household needs, so little cash income is created. However, there is a high potential for wind power generation.



A wind turbine designed and developed by SIBAT

Project Outline – Objectives and Activities

The project aims to demonstrate the suitability of small-scale wind power generators installed in an off-grid village in Northern Luzon, Philippines. This technology is a tool for sustainable development within the framework of SIBAT's community-based renewable energy system (CBRES), and for developing local livelihood opportunities and sustainable social practices.

Impacts and Achievements

Various demands and concerns were discussed by the residents during the consultation and implementation period, which was proceeded smooth execution of the project activities. Technical training on tower construction and turbine assembly was given to the members, and installation of a wind turbine (1 kWh) was completed. Further, solar panels (75 kWhx4), a power house and electric sugarcane press have been installed as of November, 2010.

Future Challenges

Problems such as the lack of pans for cooking sugarcane juice, assigning staff and distribution of profits may arise. There are now two large and one small pan (153 L, 102 L), for making 30 kg and 15 kg of sugar, with another one possibly needed depending on the amount of juice obtained in the future. The community as well as SIBAT need to determine appropriate time schedules for use of the motorized press, penalties, profit distribution, and other factors.

General Information

Name of Implementing Organization:

Sibol ng Agham at Teknolohiya (SIBAT) Inc.

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Innovative Community Development and Good Governance in Integrated Coastal Resource Management

Project Site Location Sultan Naga Demaporo, Lanao del Norte

Background – Problems Addressed and Policy Responses

The project site is valued for its rich marine resources. However, there are enormous environmental and social problems within the coastal communities. Poverty, religious conflicts between Muslims and Christians and lack of community involvement in planning and enforcing coastal resource management laws are causing illegal fishing, overexploitation of mangrove forests, and improper disposal of waste products.



Growing mangroves which are planted by the coastal community

Project Outline – Objectives and Activities

The project seeks to enhance the Marine Protected Area (MPA) through mangrove reforestation projects in collaboration with stakeholders such as government officials, the Department of Agriculture in Sultan Naga Dimaporo, Barangay captains, and coastal communities. The following outcomes are anticipated: 1) a sustainable fish catch as a source of livelihood; 2) reduced competition for marine-based natural resources in the area; and 3) a raise in incomes of those in peoples' organisations and the coastal communities.

Impacts and Achievements

Although the outcomes of this two-year project are still under observation until the end of February 2012, the project seeks to achieve following:

- Establish institutions for resource management of the MPA through involving both Muslims and Christians
- Reforest mangrove areas totalling 10 hectares
- Capacitate 10 peoples' organisations in managing livelihood projects
- Identify and develop socio-economic enterprise projects
- Establish partnerships and coordination with local government units and other institutions in managing the MPA
- Reduce cases of illegal fishing
- Ensure sustainable food sources and additional incomes for the local communities

Future Challenges

The project aims to conserve the environment, enhance livelihoods, build capability and advocate governance. It seeks to strengthen the relationship and lessen the conflicts between Muslim and Christian communities via active participation in managing the MPA and restoring the mangroves. Ethnic and cultural differences may impinge upon project goals but this could be mitigated by increased cross-cultural and cross-gender dialogue, leading to increased mutual understanding and less alienation and misunderstanding.

General Information

Name of Implementing Organization:

Lanao Aquatic and Marine Fisheries Center for Community Development, Incorporated (LAFCCOD, Inc.)

Type of Organization: NGO/CBO

Contact Information: Fermin C. Flores Jr., Executive Director, Purk Durian 2, Villanueva Subdivision maranding, Lala, Lanao del Norte Tel: (063)-388-7055 Fax: (063)-388-7055 E-mail: lafcodincorporated@yahoo.com

Project Monitoring and Review (NetRes/Collaborators):

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The Coron Initiative

Project Site Location Coron, Palawan province, Philippines

Background – Problems Addressed and Policy Responses

Coron is the fastest developing prime tourist destinations in the Philippines. Palawan was proclaimed as a Man and Biosphere Reserve in 1990. Coron was submitted in 2006 for consideration to be designated as a World Heritage Site. Growing national and international tourists and boosting economic activity increase infrastructure projects, inter-island transport, trash dumping, commercial fishing, waste water, and deforestation.



Giving guidance to tourists about sites and local regulations

Project Outline – Objectives and Activities

The Coron Initiative aims to set parameters and safeguards to maintain natural cycles in marine and coastal ecosystems and reduce the effects of global climate change. The project seeks to preserve the Coron and Calamianes Islands as an attractive destination for environmentally responsible tourism. The project intends to create a tool and guidelines on sustainability planning for businesses, agencies, NGOs, LGUs and communities.

Impacts and Achievements

The Coron Initiative has held a number of conferences, forums and workshops to bring together public and private stakeholders from the tourism sector, government, and civil society. They included regulatory agencies, resort-hotels, travel agencies, transport and tour operators, media, real estate developers, non-government organizations, environmental and socio-civic clubs, academe, experts and individuals. A series of meetings enhanced their knowledge and abilities to promote environmental conservation, and sustainable tourism and development, to reaffirm sustainability principles, and to share information on good practices and experiences. The Coron Initiative Sustainable Tourism Charter was adopted as a framework for sustainable tourism.

Future Challenges

Super typhoon Haiyan (locally called Yolanda) devastated Coron in November 2013. The Mayor estimated that the total damage reached PHP 10 billion and 70 - 75 percent of the houses and buildings were damaged with six casualties. There were over 14,000 evacuees in Coron. Sustainability needs to be ensured in promoting the reconstruction. The continuous government support and inter-agency/stakeholder coordination remain to be essential. The Global Sustainable Tourism Criteria must be integrated in monitoring.

General Information

Name of Implementing Organization: Calamines Conservation & Culture Networks, Inc. (CCCN Inc)

Type of Organization: Non-governmental

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Project Monitoring and Review (NetRes/Collaborators): Dr. Qwanruedee Chotichanathawong and Mr. Santikorn Pakdeesettakul, Thailand Environment Institute (TEI), E-mail: santikorn@tei.or.th

Corporate Sustainable development Responsibility [CSdR]

Project Site Location Singapore

Background – Problems Addressed and Policy Responses

Contributions to sustainable development from the corporate sector, as part of CSR activities, is widely considered a viable direction to pursue; however, no standards related thereto exist. As an answer to this, the present project proposes the creation of a holistic set of implementable and objectively assessed standards under an umbrella concept entitled Corporate Sustainable development Responsibility (CSdR).



Davis, Langdon & Seah offices in 2010: still fighting the good fight to reduce paper waste

Project Outline – Objectives and Activities

The project intends to develop a framework of standards that corporate stakeholders can identify with and effectively adopt, enabling them to contribute to the sustainable development of their communities. The project objectives are: 1) Examining the current status of CSR and guidelines (if any); 2) Formulating a list of indicators to measure the state of sustainable development; 3) Encouraging companies based in Singapore to co-refine these indicators with the research team; and 4) Engaging the wider audience of stakeholders through public education.

Impacts and Achievements

A framework comprising six categories: Social Sustainability, Social Environmental Sustainability, Social Economic Sustainability, Company Structure, Profile of CSdR Standards Within Organizations, and Implementation of CSdR was piloted with three companies: Senoko Energy, Davis Langdon & Seah, and SKF Asia-Pacific. The project also led to the Singapore Ministry of Foreign Affairs inviting Dr. Kua to the following conferences held in two developing countries: 1) "Climate Change: Governance, Risk Management and Mitigation" (10-14 August 2009, Hanoi, Vietnam); 2) "Climate Change and Sustainable Development: Challenges, Solutions and Governance" (22-25 September 2009, Yangon, Myanmar), in furtherance of CSdR.

Future Challenges

Although implementation of CSdR in these three companies and in Vietnam and Myanmar was a success, very high time and effort burdens were placed on the parties involved. Provision of core teams of experts within companies to facilitate the adoption of guidelines and oversee verification processes would greatly assist in this process, and to this end a "CSdR Institute" needs to be established to provide training for professionals in the Asia-Pacific region interested in becoming sustainability consultants.

General Information

Name of Implementing Organization: Climate Change Organisation (CCO)

Type of Organization: NGO/CBO

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The Green Purchasing and Green Procurement Initiative

Project Site Location

Bangkok

Background – Problems Addressed and Policy Responses

Green procurement is viewed as an alternative means towards attaining sustainable consumption. As the largest purchaser in the country, the Thai government declared adoption of green procurement by launching a pilot project in the Pollution Control Department (PCD). However, green procurement is not widely adopted yet, especially for small private organisations.

Project Outline – Objectives and Activities

This project aims at strengthening the implementation of green procurement in both public and private sectors by enhancing capacity, indicating key factors for pursuing green procurement, streamlining the green procurement network and knowledge sharing between organisations. Key activities include arranging workshops on green procurement, launching green procurement pilot projects in many organisations, developing and disseminating green procurement handbooks and conducting surveys and interviews on green procurement in public and private organisations.

Impacts and Achievements

The project has resulted in clarification of the factors governing green procurement in Thailand, and the publishing of a green procurement handbook for public and private organisations. Pilot projects in both public and private organisations demonstrated that green procurement can be implemented in small and medium-sized organisations. The activities of this project have also increased cooperation between members of the green procurement network in Thailand.

Future Challenges

Even though this project has succeeded in its objectives in strengthening the implementation of green procurement through activities and pilot projects, green procurement in Thailand still needs further development and dissemination to wider audiences in both public and private sectors. Another key challenge is to stimulate green demand by addressing green consumption at the level of individual citizens, which is needed in order to achieve sustainable consumption throughout Thai society.



The Memorandum of Understanding signing ceremony for “The green purchasing and green procurement initiative” project on 27 February 2008

General Information

Name of Implementing Organization:

Thailand Environment Institute (TEI)

Type of Organization: NGO/CBO

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Enhancing Eco-efficiency and Sustainability in Primary Industry Sector

Project Site Location

Implementation sites are located in 7 provinces.

Background – Problems Addressed and Policy Responses

The majority of factories in Thailand are small and medium enterprises (SMEs), which lack the resources needed to address environmental management and social responsibility. Through linkage to governmental policies intended to empower SMEs, this project intends to reduce energy consumption and cut greenhouse gas emissions from the industrial sector.



Installation the pressure gauge to measure loss at Multi Dry Filter

Project Outline – Objectives and Activities

This project aims at enhancing eco-efficiency and sustainability for small and medium-sized factories in Thailand by introducing cleaner technology (CT) and corporate social responsibility (CSR) concepts. The participating factories received technical assistance and training in order to improve their eco-efficiency and contributions to society. Project activities included factory surveys, CT training, small group activity (SGA) training and CSR training.

Impacts and Achievements

The impacts and achievements of the project can be seen within the factories and society. Reductions in pollution, resource use and energy costs represent key improvements contributing to eco-efficiency in the factories, which has resulted in a reduction in greenhouse gases (GHGs) of approx. 1,985 tons of CO₂ equivalent/year. CSR activities initiated by the SMEs in this project, such as reforestation, check-dam building and CT implementation in schools had positive impacts throughout society at large.

Future Challenges

The main challenge this project faces is in its ability to continue providing assistance and training to SMEs to build knowledge, understanding and capacity on eco-efficiency and social responsibility, as such improvements and activities - especially the implementation of CSR activities - do not generate direct financial gains for the companies. A further challenge is to secure technical and financial assistance from large enterprises to enable the SMEs to achieve eco-efficiency.

General Information

Name of Implementing Organization:

Society for the Conservation of National Treasure and Environment (SCONTE)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Demonstrating Ecological Mangrove Restoration at Krabi Estuary RAMSAR Site

Project Site Location

Bang Lang Da village, Tambon Ta Ling Chan, Muang district, Krabi province

Background - Problems Addressed and Policy Responses

Mangroves are disappearing at a fast rate in Thailand due to human activity, including shrimp aquaculture. However, the majority of shrimp aquaculture ponds now lay abandoned due to the poor economics allied with the practise and recurring disease outbreaks, which has led to large areas of unproductive former shrimp aquaculture. The Thai government has responded by instigating a mangrove rehabilitation programme.



Pond land preparation work

Project Outline - Objectives and Activities

The project aims at creating a demonstration site for mangrove rehabilitation by using the Ecological Mangrove Restoration (EMR) approach. To implement EMR, an abandoned shrimp pond is selected to study its ecology and hydrology, assess possible modifications, design a rehabilitation programme, restore the appropriate hydrology, and utilize natural processes for its rehabilitation. A multi-stakeholder approach is adopted for the entire process to ensure implementation sustainability and to empower the local people at the site.

Impacts and Achievements

The project has demonstrated positive results for the regeneration of mangroves at the current site. However, mangrove rehabilitation monitoring has to be continued in order to evaluate the usefulness of EMR in terms of biodiversity, raised level of income of the local people and benefit-sharing in the local community.

Future Challenges

A future challenge for this project is to ensure monitoring of the implementation site continues. Determination of successful implementation hinges on the survival of the mangroves and the livelihood of the local people. Future challenges for implementing EMR in Thailand are to identify ownership of the degraded land, obtain permission to start rehabilitation, and continue the monitoring activity.

General Information

Name of Implementing Organization:

Wetlands International-Thailand Programme

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Preparedness for Climate Change and Increased Water-use Efficiency for Rice Cultivation via SRI [System of Rice Intensification]

Project Site Location Central Thailand, Ratchaburi Province

Background - Problems Addressed and Policy Responses

In Thailand, rice is the most important crop grown (55% of cropped area), consumed (42% of daily calorie intake) and exported (40% of global share in 2008), but is problematic due to emission of large amounts of GHG and methane and the low water-use efficiency. Therefore, improved production systems, such as SRI are needed to combat climate change.



Farmers in Ratchaburi examining the newly harvested crops of System of Rice Intensification (SRI)

Project Outline - Objectives and Activities

The objectives are to strengthen the capacity, at the farmer level, to deal with location-specific heterogeneity and develop area-specific green technologies for rice production systems that focus on sustainable water use to address the challenges of climate change and economic development. Development of innovative location-specific crops and water-management techniques with active involvement of farmers along with experts at selected farming fields, and creation of a knowledge base and awareness for information dissemination are implemented.

Impacts and Achievements

This project can help rice farmers become partners in climate-change mitigation and adaptation – so-called preparing for and coping with strategies—through adapting and adopting improved water-management practices such as intermittent irrigation, a well-known and scientifically-proven technique to reduce CH₄ emission. A proven concept like SRI, on the other hand, would boost water productivity and crop health to prepare farmers for sustainable production with less water and in less favorable climates. The resulting higher yields would be both an incentive and reinforcement for the behavioural changes involved in transforming crop, soil, water and nutrient-management practices.

Future Challenges

Value-added alternative production systems that involve reductions in water, chemicals and other inputs are required to sustain climate-friendly crop-management practices such as SRI. Existing agricultural policies need to be revised in the context of climate change to benefit farmers, consumers and the environment.

General Information

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Rehabilitating Cadmium Contaminated Paddy land to be Integrated into Ecological Production Landscapes through Multi-stakeholder Partnership Actions

Project Site Location

MaeTao Creek area, Mae Sot District, Tak Province

Background – Problems Addressed and Policy Responses

The paddy field in the MaeTao Creek area, Mae Sot District, Tak Province – a northern part of Thailand revealed the substantive level of cadmium concentration through the surveys conducted in the past. It is thus recommended to produce non-edible agricultural produce. It is vital to manage cadmium risks and support local livelihood that depend on rice production.



Soil sampling in MaeTao district

Project Outline – Objectives and Activities

The project aims to develop community based partnership for managing risks of cadmium contamination and sustain agrarian local livelihood that depend on rice production through the meaningful sharing of information on cadmium contamination and its risks. It is also intended to explore options and consider their feasibilities for remediating cadmium contaminated paddy fields and sustaining rice production by minimizing cadmium risks.

Impacts and Achievements

The information was consolidated and shared on the results of the surveys conducted in the past on cadmium contamination and its impacts in MaeTao district. The stakeholders reviewed the status of policy interventions and examined the options and their feasibilities of rehabilitating cadmium contaminated paddy fields. They considered the options including the reversal of top soil, chemical treatment and phyto-remediation as well as the water management to reduce the uptake of cadmium by rice. The farmers and villagers were better informed and forged a basis for community based multi-stakeholder partnership resolve the issues and sustain an agrarian livelihood.

Future Challenges

The legal disputes over the case of cadmium contamination in MaeTao district are still on-going and local villagers and farmers are still waiting for the decisions on the terms for remediating the cadmium contaminated paddy fields. Funds need to be allocated to implement its plan to remediate contaminated paddy fields. The proper risk management and communication need to be effectively carried out to support remediation and rice cultivation.

General Information

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King Mongkut's University of Technology North Bangkok and PCD

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Sustainable Community Forestry and Poverty Reduction - Linking Natural Resource Accounting of Ecosystem Services to Carbon Financial Markets

Project Site Location Luc Ngan District, Bac Giang Province

Background - Problems Addressed and Policy Responses

Climate change and poverty are two of the greatest threats faced by the world today. The only way for farmers in developing countries to increase productivity is to expand the surface area by clearing forests, which releases carbon into the atmosphere. As a means of removing this carbon dioxide from the atmosphere, reforestation activities are conducted in the selected district.



Woman carrying tools at APFED project agro-forestry site

Project Outline - Objectives and Activities

The objectives of this project are; (1) instigation of appropriate land use, (2) linkage to external markets, and (3) creation of conditions for poverty reduction and GHG mitigation. In relation to these, (1) introduction of improved carbon accounting tools used by advanced technologies, (2) introduction of market rules for carbon accounting for delivering benefits to the rural poor, and (3) creation of linkage between farmers and buyers are conducted through capacity development and knowledge transfer.

Impacts and Achievements

Through this project, an overall agro-forestry system and carbon project development were achieved. The knowledge transfer provided biotic carbon as a commodity and climate change mitigation. Advanced technologies for identifying and detecting changes in carbon storage at the village level were developed. A new forestry protocol that includes the accounting and trading of community carbon was developed. In terms of benefit for farmers, market linkage regarding carbon trading was created between farmers and buyers. This project led to poverty alleviation and environmental sustainability.

Future Challenges

Development of the carbon market is crucial for this project, even if done on a voluntary bases, as in this project. Generating the basic data for trees such as the lychee tree would enable estimation of the carbon stock, and creating recognition of this at the local level via project activities is key to smooth project implementation.

General Information

Name of Implementing Organization: Ministry of Agriculture and Rural Development (MARD), Department of Science and Technology and Environment (DOST), Viet nam; with the following partner institutions: Global Observatory for Ecosystem Services (GOES), Department of Forestry, Michigan State University, USA. & Forest Resources and Environment Center (FREC), Forest Inventory and Planning Institute (fipi), Vietnam

Type of Organization: Governmental Organisation

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Setting up a Demonstration of Technical and Financial Model for the Application of Rice Husk Gasification

Project Site Location Sa Dec, DongThap

Background - Problems Addressed and Policy Responses

The Mekong Delta houses about 4,500 rice-husk-fueled traditional kilns producing bricks and ceramics, with each kiln owner employing 10 to 100 workers. Traditional kilns have very low energy efficiency and emit polluting smoke that degrades human health and lessens agricultural productivity. To resolve the air pollution, the Central Government issued Decision 15/2000/QD-BXD in 2000, stipulating closure of all traditional kilns by 2010.



New kiln

Project Outline - Objectives and Activities

A new kiln type was introduced for rice husk gasification; a continuous four-compartment kiln, eliminating air pollution and improving the quality of ceramic products. The project also introduces an energy service business model in order to effect adoption of the new technology. A feasibility study was conducted wherein under the project investment scheme, users arrange financing, including equity and debt, to develop rice husk gasification with the new kiln system. A pilot project was selected for application of this scheme.

Impacts and Achievements

Technical assistance was provided to Mr. Luat, the pilot project owner, in setting up the new rice husk gasification and kiln system, in liaising with government agencies to certify the feasibility of the gasification system and in establishing contacts with a bank to secure funding. The project was selected as National Winner of the ENERGY GLOBE Award 2009 and showcased by Dong Thap officials as a promising solution to transform the local kiln industry.

Future Challenges

While the project follows a model of providing assistance to potential users in terms of technical know-how (designing, technology identification, analysis for decision making) and mobilizing a source of commercial finance, the role of Energy Service Companies (ESCOs) is critical in the replication stage to lessen initial investment burdens on the poorer small and medium-sized kiln owners. Diffusion of the project activities to more kiln owners is needed, together with government assistance to facilitate capacity-training in business management.

General Information

Name of Implementing Organization:

ENERTEAM

Type of Organization:

NGO/CBO

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Facilitating the People's Access to Environmental Information, Decision-Making and Environmental Justice for Promoting Sustainable Development

Project Site Location All over Bangladesh

Background - Problems Addressed and Policy Responses

Effective environmental law enforcement is a prerequisite for protecting the environment in Bangladesh. The Right to Information Act of 2008 was expected to ensure public access to such information, but the administrative processes involved make this very difficult. It is therefore essential to raise public awareness, prompt proactive participation, and train lawyers and environmental leaders.



Syeda Rizwana Hasan, Director of BELA

Project Outline - Objectives and Activities

The project is intended to promote stakeholder dialogues on public access to environmental information, to undertake an assessment of policy and institutional frameworks and to conduct case studies and provide training for environmental lawyers, practitioners and environmental leaders. The Bangladesh Environmental Lawyers Association (BELA) has undertaken activities including 12 studies to cover issues such as mining, waste, aquaculture, and participatory resource management, and to provide the government with recommendations for improving environmental legal systems.

Impacts and Achievements

The assessment delineated gaps and challenges in enabling the public to obtain environmental information, to promote participatory decision-making and to ensure social justice in proceedings; Twelve case studies elucidated the driving forces in environmental damage and depletion of natural resources and provided countermeasures; Societal and community-based network organisations were strengthened; Awareness of decision makers, officials and stakeholders on ways to promote effective environmental law implementation was raised; Platforms to build partnership for undertaking collaborative activities were created; and the 2009 Goldman Environment Award was awarded to the BELA Director.

Future Challenges

The Right to Information Act of 2008 must be operationalised to foster the flow of environmental information to the public; Legislative or administrative measures need to be strengthened to compel agencies and businesses to disclose environmental information; The mechanisms need to be strengthened to eliminate corruption in environmental law administration; Legal provisions on public participation must be further elaborated; Compliance with information-disclosure requirements and development of enforcement procedures need to be monitored.

General Information

Name of Implementing Organization: Bangladesh Environmental Lawyers Association (BELA)

Type of Organization: Other (Coalition of Civil Society Groups)

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Field Testing of Innovative Farming Practices Related to Climate Change in Vulnerable Areas

Project Site Location Bangladesh

Background - Problems Addressed and Policy Responses

In Bangladesh, catastrophic flooding, temperature changes and strong cyclones in early and late summer coupled with tidal surges cause extensive crop damage in the coastal zone. Conversely, after dry winters the country suffers from drought. The project is aimed at identification of innovative practices developed by farmers as coping strategies, as well as demonstration of their scientific credibility.



Farmer Convinced with the Relay Cropping of Potato and Maize

Project Outline - Objectives and Activities

1) Identification of the various innovative practices undertaken in the vulnerable areas and demonstrations and field trials of promising innovative farming practices in different locations. 2) Awareness-raising among the farmers and affected communities of coastal zone, flood and drought prone areas of innovative farming. 3) Generation of food, fodder, fuel and feed for the affected communities in the drought, flood and tidal surge and haor basins. 4) Motivating the affected communities to follow through with the adaptation activities.

Impacts and Achievements

Adoption of the above innovative practices would lead to the following positive impacts: Utilisation of residual moisture and fertiliser, thus reducing requirements in these areas while also combating the drought problem; reduced expenditure for land preparation; saving of 30 crop days; and premium prices for early harvest.

Future Challenges

Due to the challenge of replicating the test modules on a large scale, it is recommended that the project be supported for a further two years.

General Information

Name of Implementing Organization:

Bangladesh Centre for Advanced Studies (BCAS)

Type of Organization:

NGO/CBO

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Appropriate Technology Park for Climate Change Adaptation and Environment-friendly Coping Strategy

Project Site Location

South West (Jessore) and North West (Dinajpur) regions of Bangladesh

Background - Problems Addressed and Policy Responses

Historical data and future projections have indicated a broad range of climate change impacts on the food and energy security of Bangladesh. Being a developing country, its purchasing power and access to various climate friendly technologies are poor, which necessitates penetration of low-cost technologies for the rural poor in Bangladesh.



Biosand filter being constructed

Project Outline - Objectives and Activities

The primary objective of the "Seeing is Believing" project - via establishment of a technology park-is to demonstrate low-cost technologies for coping with changes in climactic and environmental conditions to rural communities, and urge their adoption. The project involves showcasing appropriate technologies, including a bio-sand filter, solar water purifier, solar desaliniser, rainwater harvesting, efficient stove, solar drier, and biogas plant, and providing usage instructions and supply chain information therefor.

Impacts and Achievements

The project has implemented two approaches; a cluster-based Technology Park and diffusion based on a visit system, which have resulted in 256 adoptions of the various technologies within a year – the most popular being biogas slurry and biogas plants, followed by urea super-granules and composting. The project has raised the awareness among various stakeholders of the importance of these low cost technologies, facilitated private sector penetration into rural areas, and helped shape government policies by promoting greater investment in low-cost technology development and diffusion.

Future Challenges

Designing mobile and diffusion-based systems as against fixed technology park need to be considered. The robustness of the low-cost options needs to be improved, with more research and development by government and private agencies, hands-on training for rural artisans, greater incentives by government to promote private sector participation, and instituting a mechanism that continuously identifies local innovations and introduces them into formal research and development schemes.

General Information

Name of Implementing Organization:

ChangeMaker: Society for Social and Economic Development

Type of Organization: NGO/CBO

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Climate Change Adaptation in Sundarbans via Bamboo Cage Crab Fattening and Mangrove Restoration

Project Site Location Shyamnagar Upazilla Satkhira district

Background - Problems Addressed and Policy Responses

The rise in sea level poses many threats to coastal populations; it reduces the stability of ecosystems and jeopardise the livelihoods of those dependant on coastal fisheries. Further, the increasingly frequent natural disasters exacerbate the current situation, causing irreversible losses and damage to marine life and disrupting the process of mangrove restoration.



2 week-old Sundarbans Crabs

Project Outline - Objectives and Activities

This project aims at engaging local people and all stakeholders to collaborate on effective countermeasures to the existing problems, part of which involves bamboo-cage crab-fattening and mangrove restoration. The objectives are: (1) Increasing the number of local communities participating in the project, (2) Reducing the impact of natural disasters through local resources and mangrove restoration, and (3) Setting up cooperation between related organisations and the public.

Impacts and Achievements

The impacts or outcomes are (1) Increased income of beneficiaries through applying appropriate technology for crab fattening, (2) Protecting and reforesting mangrove areas in order to create a more productive marine system, and (3) Creating a buffer zone via mangrove restoration to act as a protective barrier against natural disasters.

Future Challenges

While the project has mainly proceeded according to schedule, potential risks affecting progress include natural disasters and tiger attacks, the latter of which can be solved through provision of security protection. A further challenge for the project is in its replication in other areas, as well as gaining cooperation and commitment from beneficiaries to raise their income and increase their quality of life. Concurrently, local communities need to be urged to take better care of their natural resources.

General Information

Name of Implementing Organization:

Centre for Coastal Environmental Conservation (CCEC)

Type of Organization:

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New Climate Risk Management Project (NCRMP)

Project Site Location Faridpur District

Background – Problems Addressed and Policy Responses

Bangladesh is traversed by several rivers and tributaries, along which large areas of sand deposits, called char lands, form as a result of changing river courses and varying levels of flow and sedimentation. The many people living on these char lands face a number of natural disasters, the causes of which are becoming increasingly complex due to climate change.



Seeds beneficiary taking care of her paddy

Project Outline – Objectives and Activities

The objectives are to reduce the vulnerability of communities living on char lands to various natural disasters resulting from climate variability and change, to enhance the resilience of rural livelihoods, and to enhance the disaster capacity of communities. These objectives are met through the introduction of hydroponics/floating gardens, capacity building, disaster management planning, micro-insurance, soil-less agriculture and awareness-generation activities on related areas. The project involves communities, local governments, NGOs, and insurance agencies.

Impacts and Achievements

The project has trained 705 stakeholders on skills needed in the above, reached 962 direct and indirect beneficiaries through awareness-generation on climate change, disaster risk reduction, climate resilient livelihoods and health and hygiene; provided improved paddy seeds and tree saplings to 600 beneficiaries; and assisted in the preparation of rescue and evacuation plans for floods and cyclones for several villages. As a result, the Climate Change Management Committees, Union and District-level Disaster Management Committees observed improved performance during flooding in 2010 and a number of community members have reported reduced income loss and steadier food availability during stress periods.

Future Challenges

Due to the lack of focus the above problems at the national and local government level, there is a real need for additional human and financial resources to expand these activities. A further challenge to address is the lack of basic information available to communities concerning future climate change, due to the highly generic nature of the problems. There is also a very limited mandate for local governments to initiate specific projects to deal with climate change.

General Information

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Type of Organization: NGO/CBO

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Adaptation to Climate Change through Conservation Agriculture for Improving the Food Security of Vulnerable Poor People in the Flood Prone *Chalan Beel* Area of Bangladesh

Project Site Location Chalan Beel area of Bangladesh

Background – Problems Addressed and Policy Responses

Bangladesh is the most vulnerable country to climate change. Conservation agriculture can increase crop productivity through 1) reduced tillage systems; 2) retention of crop residues; and 3) diversified cropping patterns. Conservation agriculture is a cost effective and environment-friendly technique that can improve soil conditions, biodiversity, and food security for the vulnerable poor farmers in the flood prone Chalan Beel.



Demonstration site of conservation agriculture

Project Outline – Objectives and Activities

The main objectives are 1) To determine suitable adaptation practice and suitable crops, 2) To increase farmers' income, 3) To conserve the biodiversity of plants and fishes, 4) To improve soil conditions. The overall project activities are 1) participatory rapid appraisal (PRA) and focus group discussions (FGD), 2) training of farmers and 3) field demonstrations.

Impacts and Achievements

From 2011-2012, 50 field demonstrations on conservation agriculture were undertaken based on five cropping patterns with the combination of garlic, sesame, flood tolerant rice, maize, red amaranth, wheat, mungbean, mustard and potato. These crop patterns have increased the total yielding. Zero tillage ensured the timely establishment of the crops. The introduction of legume crop (like mungbean) into the cropping systems improved soil fertility. Diversified cropping systems reduced the pest infestation. Rural poor women participated in project works particularly in post-harvest activities of diversified cropping systems.

Future Challenges

Flooding, drought, salinity intrusion, cyclones, storm surges, tornadoes and heat stress may become more frequent and erratic and impose major threats to agriculture and food security in Bangladesh. Arable land becomes less for the rapidly increasing population. The wide-spreading mass cultivation of high yielding variety (HYV) rice further causes soil degradation, depletes biodiversity, increases pest infection, reduces the groundwater level. Mono-cultivation of HYV rice may replace the non-rice crops and indigenous crop varieties. Suitable adaptation strategies need to be adopted more widely in Bangladesh.

General Information

Name of Implementing Organization: Bangladesh Agricultural Research Institute (BARI)

Type of Organization: Governmental Organization

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Water Quality Monitoring and Low Cost Purification Strategies for Inland Waterways of Low-Lying Areas

Project Site Location

Kottayam, Kerala, India

Background - Problems Addressed and Policy Responses

The uncontrolled solid waste dumping has caused bacteriological pollution and aggravated anaerobic conditions in the Meenachil river basin. The pollution reduced the water availability and hampered the local livelihood. The project was aimed at improving the water quality through implementation of low cost purification strategies for the best practices that are to be adopted in the study region.



Water clean up campaign

Project Outline - Objectives and Activities

The project aims to improve water quality through activities that include (1) baseline studies on water quality, (2) selection of low cost water purification materials like coconut shells and herbs, (3) measures to control pollution with the biofertilizers and riparian vegetation for phytoremediation, (4) measures to restrain water logging by de-silting and (5) assessment of fish stock and other freshwater organisms.

Impacts and Achievements

The project activities improved the water quality of the Meenachil river and in the downstream. A wind induced aerator system for water purification was implemented and could be replicated to the areas without the access to the electric grid. The project has proven the effectiveness of the phytoremediation techniques using a Vetiver system to improve the water quality. The river bank erosion were controlled by riparian vegetation and bio-wall construction and reduced the sediment load. Knowledge of local people was raised on how to maintain the environment, promote the sustainable utilization of local resources and improve water quality.

Future Challenges

It is essential that the stakeholders will capitalize upon the knowledge and practices gained through education and capacity building and continue the activities to improve the water quality and promote sustainable development in the areas. It is also vital that the local government will allocate funds to support the activities initiated under this project in order to sustain the activities even after the APFED Showcase funding ceases.

General Information

Name of Implementing Organization:

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Type of Organization: NGO

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Setting up Model “Green Colleges”

Project Site Location Gujarat, Ahmedabad

Background - Problems Addressed and Policy Responses

In DESD*, it is important for youth while studying to obtain experience in sustainable development, to lead sustainable lifestyles and to acquire a sustainable development perspective. Youth participation is essential for initiating action to reduce climate change, and in making colleges green, in areas such as efficient energy and water usage, proper waste management and green management on-campus.

*“DESD”: the UN Decade of Education for Sustainable Development.



Plantation at Government Science College, Valod 1

Project Outline - Objectives and Activities

To establish Green Colleges in urban, rural and tribal areas, via implementation of (1) orienting youth in aspects of climate change through sustainable consumption practices in lifestyle, (2) identifying issues and actions for making Green Colleges, (3) promoting action among youth to combat climate change (e.g., establishing rainwater harvesting structures, efficient energy/waste management systems), and (4) developing documentation on adaptation/replication of the Green Colleges project for the Asia region.

Impacts and Achievements

Through “Eco Clubs” in all three participating colleges in the project, the following are the impacts and achievements at the end of the two-year project: (1) The creation of groups of students and teachers skilled in sustainable lifestyle and consumption practices, (2) Provision of assistance in Initiatives in sustainable campus practices in the three project colleges, (3) Production of documents for replication of projects in developing model green colleges in similar Asian contexts, and (4) Involvement of other global youth-based organisations for initiating action-based sustainable practices promoted via SAYEN newsletters and website.

Future Challenges

(1) Maintaining youth enthusiasm for actively advancing sustainable practices through running Eco Clubs in colleges, (2) Assuring appropriate maintenance of facilities and systems established in college campuses under the project, and (3) To successfully scale-up the project.

General Information

Name of Implementing Organization:

Centre for Environment Education

Type of Organization: NGO/CBO

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Prevention of Global Warming and Climatic Change via Rainwater Harvesting, Afforestation and Bio-mass Growth for Drought-avoidance

Project Site Location West Bengal State- Purulia District- Hura Blocks

Background - Problems Addressed and Policy Responses

The Hura block, within the Purulia district, is a drought-prone area comprising expanses of degraded, unproductive wasteland and a very poor socio-culturally oppressed population. Project activities include use of 50 acres of model multi-cropping plantations for training (compost fertilizer preparation, rainwater harvesting, etc) of the local youth community.



Tribal Families

Project Outline - Objectives and Activities

The objectives of the study are; (1) implementing multi-cropping plantations in degraded wasteland to prevent global warming and climate change, and (2) to raise the rainwater-holding capacity and groundwater level in selected areas. In order to achieve these objectives, various types of training (soil testing, vermin culture, compost fertilizer preparation, nursery raising, soil and moisture conservation, rain water harvesting, groundwater recharging and organic farming) were provided to the youth members of the community.

Impacts and Achievements

As this project is ongoing, the impacts and achievements are still uncertain, but the project is anticipated to create a bio-moss and improve the fertility of the wasteland, reduce the occurrence of droughts, provide drinking water for the local population and generate income through regular sale of medical herbs, vegetables, and fruit, as well as timber. This project is also intended to provide stable employment, various livelihood possibilities and a sustainable environment.

Future Challenges

The main challenge of the project is to sustain key activities related to rainwater harvesting, replenishing the groundwater and to some extent plantation activities in the periods of low rainfall or years of drought.

General Information

Name of Implementing Organization: Liberal Association for Movement of People

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Regional Climate Change Issues and Adaptation Measures for Low Lying Regions in the Context of Future Sea Level Rise

Project Site Location Kottayam, Kerala, India

Background – Problems Addressed and Policy Responses

The uncontrolled solid waste dumping has caused bacteriological pollution and aggravated anaerobic conditions in the Meenachil river basin. The pollution reduced the water availability and hampered the local livelihood. The project was aimed at improving the water quality through implementation of low cost purification strategies for the best practices that are to be adopted in the study region.



Ridge that protect paddy field from flooding

Project Outline – Objectives and Activities

The project aims to improve water quality through activities that include (1) baseline studies on water quality, (2) selection of low cost water purification materials like coconut shells and herbs, (3) measures to control pollution with the biofertilizers and riparian vegetation for phytoremediation, (4) measures to restrain water logging by de-silting and (5) assessment of fish stock and other freshwater organisms.

Impacts and Achievements

The project activities improved the water quality of the Meenachil river and in the downstream. A wind induced aerator system for water purification was implemented and could be replicated to the areas without the access to the electric grid. The project has proven the effectiveness of the phytoremediation techniques using a Vetiver system to improve the water quality. The river bank erosion were controlled by riparian vegetation and bio-wall construction and reduced the sediment load. Knowledge of local people was raised on how to maintain the environment, promote the sustainable utilization of local resources and improve water quality.

Future Challenges

It is essential that the stakeholders will capitalize upon the knowledge and practices gained through education and capacity building and continue the activities to improve the water quality and promote sustainable development in the areas. It is also vital that the local government will allocate funds to support the activities initiated under this project in order to sustain the activities even after the APFED Showcase funding ceases.

General Information

Name of Implementing Organization:

Nansen Environmental Research Centre and Centre for Earth Research and Environment Management

Type of Organization:

NGO

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

The Energy and Resources Institute (TERI)
Dr. Nutan Kaushik, The Energy and Resources Institute (TERI), E-mail: kaushikn@teri.res.in

Supporting Farmers via Promotion of Solar-assisted Sericulture

Project Site Location Bandipur, Tanahun

Background - Problems Addressed and Policy Responses

The sericulture promotion initiative was established by the government to generate jobs and reduce poverty. Farmers earn 12,000-16,000 NRS annually. Sericulture is practiced especially in the hilly and mountainous areas of Tanahun district, as they are most suitable for sericulture. To develop the economy, innovative solar-assisted silkworm rearing houses were constructed in the district.



Women engaged in collecting cocoon

Project Outline - Objectives and Activities

Objectives: Technical promotion and adoption of renewable energy based solar-assisted silkworm rearing houses to sericulture farmers; Support of local people for sericulture infrastructure development, building capacity and institutional development; Local employment creation for raising economic status of farmers in remote valleys; Establishment of logistical support to farmers (technical, equipment, medicine, etc.). To achieve this, capacity building, infrastructure development, revolving fund mobilisation and renewable energy applications are implemented.

Impacts and Achievements

Fund mobilisation enabled smooth setup of a framework for sericulture promotion. Sericulture improves employment opportunities in rural areas which help reduce poverty. Improved rearing houses are designed and constructed using local material and labor. The project is implemented in highly remote areas, only accessible by offroad vehicles. Farmers have benefited from improved rearing houses and silkworm rearing. Support from the local silk association greatly assisted in sericulture training and provision of various facilities for silkworm cocoon production for farmers. Silkworm rearing houses, home solar systems and revolving funds are provided by "Energy and Environment, Nepal". Farmers earn about 12,000 to 16,000 NRS annually.

Future Challenges

To enable the programme to be sustainable via wide scale replication, and raise incomes of those in remote villages, as well as the country as a whole, the following are needed; (1) Increases in the number of silkworm rearing houses, mulberry cultivation, and opportunities for local populations, (2) Establishment of a sustainable market for cocoons produced and of new post-cocoon markets such as silk-yarn reeling, weaving, dyeing, and (3) Export of silk products (yarn/fabric).

General Information

Name of Implementing Organization: Energy and Environment, Nepal

Type of Organization: NGO/CBO

Contact Information: Deepak Raj Subedi, Team Leader

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Project Monitoring and Review (NetRes/Collaborators):

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Promoting the 3Rs [Reduce, Reuse, and Recycle] for the Sustainable Solid Waste Management in Gokarneswor Village Development Committee (VDC) of Kathmandu Valley

Project Site Location Bagmati, Kathmandu

Background - Problems Addressed and Policy Responses

Gokarneswor Village is located on the outskirts of Kathmandu city, and the village had no agency for waste management. Some households with agricultural land made compost using traditional methods, and others generally disposed of waste into the Bagmati River. This resulted in interference of the natural river flow and severe environmental and human health problems.



Locals dump solid wastes

Project Outline - Objectives and Activities

To achieve the project objective of achieving effective solid waste management, the following activities were undertaken: Awareness-raising campaign of composting at the household level; Support for income generating activities; Establishment of Waste Management Demonstration Park; Benchmark study of waste disposal in streets and environment; Assistance for Business Incubation of Waste Recycling Enterprises; Schemes for Motivation, Incentives and Rewards; and National Workshop on Waste Management.

Impacts and Achievements

After a series of awareness-raising campaigns and training sessions on solid waste management and compost bin distribution, the following were achieved by the local population: Separation of organic, inorganic and plastic waste, with organic waste made into compost; Use of jute bags instead of plastic bags (poly bags) to reduce plastic waste; and Reuse of mineral water bottles and beverage bottles for storing drinking water. One of the biggest impacts of this project is raised incomes of the local community from mushroom cultivation. Previously, the major source of income was knitting of wool, which was problematic and caused respiratory illnesses.

Future Challenges

Project activities have resulted in positive changes not only in the surroundings but also the mindset of the local residents for adoption of hygienic practices and willingness to recycle solid waste. However, these activities need to be continued on a sustained basis, and once MARDO withdraws from the project site the population will not have sufficient financial resources to enable this. Therefore, a long-term solution for providing support with a focus on livelihood issues is recommended.

General Information

Name of Implementing Organization:

Marsyangdi Rural Development Organization (MARDO)

Type of Organization:

NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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“Change the Bulb” Campaign

Project Site Location Kathmandu

Background - Problems Addressed and Policy Responses

In Nepal, demand for electricity is increasing at a faster rate than supply, resulting in a power deficit. To manage demand in the country, load shedding is carried out. The effect of an energy shortage has impacted on all sectors of society, thus efficient usage assumes paramount importance. One answer is to replace incandescent lamps with compact fluorescent lamps (CFLs).



A compact fluorescent bulb to replace a incandescent bulb

Project Outline - Objectives and Activities

The objective was to advocate, raise awareness and create a favorable environment regarding efficient usage of energy by replacing incandescent bulbs with energy-efficient CFLs. The activities included tagging of model CFL households; selection and training of an “EnviroCorps” to increase awareness across society; establishment of a CFL Revolving Fund for those unable to afford CFLs; organizing a CFL Concert to promote the usage of CFLs and designing awareness-raising materials for distribution during various promotional events.

Impacts and Achievements

Twenty-five hundred CFL Model Houses were tagged, in which 1,500 incandescent bulbs were exchanged for CFLs. A number of other households also replaced incandescent bulbs as a result of a mass awareness campaign and distribution of promotional materials. More than 30 environment volunteers (including 10 from EnviroCorps) were trained for the programme. A revolving fund of 1,500 USD was also created to support those households and institutions unable to purchase CFLs. The ceaseless efforts of the project team and other supporting agents resulted in a reduction of tax on CFLs to 1% in FY-10.

Future Challenges

Project objectives were met in general, though reducing energy consumption at the household level remains a challenge. The high initial cost of CFLs remains a hurdle for households, and limits their widespread uptake. Although budgetary and other resource constraints limited the impact of the project to those in the selected cities, the positive outcome of the project indicates that replication of project activities on a larger scale would be beneficial.

General Information

Name of Implementing Organization:

Youth Engagement in Sustainability (YES), Nepal

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Mentha [*Mentha arvensis*] Cultivation for Livelihood Enhancement and Biodiversity Conservation

Project Site Location

Buffer Zone of Bardia National park, Bardia, Nepal

Background - Problems Addressed and Policy Responses

The population of mammals and birds is expanding in the Bardia National park, which has led to insufficient supply of grass and a severe threat to local agriculture. Breeches into agricultural land leads to destruction of crops and underuse of arable land due to fear of crop damage and livestock degradation, as well as harassment and injuries to local people.



Mentha farming contiguous to park boundary

Project Outline - Objectives and Activities

The aim is to find a solution for the crop destruction as well as improvement in the economic conditions for the indigenous people and establishment of a positive attitude towards the park. There are three objectives; (1) mitigation of the wildlife-human conflict by replacing traditional crops with unpalatable crops and improvement of motivation of wildlife conservation; (2) development of local guardianship for biodiversity conservation through conservation education, and (3) enhancement of the livelihoods of the poor and disadvantaged people.

Impacts and Achievements

To promote unpalatable crops among local communities, eight community-based distillation units were established and seedlings, training and cultivation toolkits were provided to new farmers. In 2010, 535 farmers were involved in commercial cultivation of alternative crops (providing an additional 97,258 USD), and this number rose to 1,092 this season. Further, a conservation education programme was conducted with local school children, youth groups and community members to increase knowledge of wildlife and natural resources. To date, 56 conservation sessions have been held, 10 eco-clubs were supported and 2,414 local communities were made aware of the importance of biodiversity conservation.

Future Challenges

Alternative crops (mentha and chamomile) are grown in the winter/spring season. Crop raiding by rhino, elephants, prey species of tigers and other wildlife, including birds, has been minimised as all the adopted crops, with the exception of paddy, are unpalatable. There is thus an urgent need to replace paddy by alternative crops that can be grown in the rainy season. Further, increases in leopard-tiger related conflicts need to be addressed, due to the high number of livestock casualties.

General Information

Name of Implementing Organization: National Trust for Nature Conservation (NTNC)

Type of Organization: NGO/CBO

Contact Information: Rabin Kadariya, Project In charge

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Project Monitoring and Review (NetRes/Collaborators):

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Protection of Wildlife via Social Mainstreaming, Capacity-building and Cooperation with the Indigenous Hunting Tribal Communities of Tharparkar

Project Site Location Tharparkar District

Background - Problems Addressed and Policy Responses

Tharparkar is a semi-arid area in southeastern Pakistan, on the border with India. Kolhi and Bheel - indigenous non-Muslim socially marginalised communities - were previously engaged in illegal wild animal hunting. With awareness-raising and training on alternative income-generating activities under the project, local communities banned hunting to protect endangered wildlife such as antelope, Siberian cranes and peacocks.



A woman growing vegetables as alternative income sources

Project Outline - Objectives and Activities

The project is aimed at enabling local communities to conserve wildlife via hunting bans and alternative-income creation. The Society for Conservation and Protection of Environment (SCOPE) works with local organisations to promote awareness, set up community-based organisations (CBOs), conduct baseline surveys and training on alternative income-generating jobs such as production of clothes and hand crafts and provide micro-credit.

Impacts and Achievements

i) Creation of 32 CBOs, covering a total population of 15,204. ii) Provision of training sessions in Kolhi and Bheel communities - 4 on management, 14 on carpentry (239 attended), 18 on cap-making (214), 9 on animal vaccination (12), 4 on shawl-making (26) and 6 on carpet weaving (25). iii) Creation of revolving funds and default-free loans provided to 25 persons. iv) Banning of hunting and logging in Dec. 2008 by villages, and instigation of fines of 200,000 PKR for illegal hunting. v) Reduced hunting and logging, and increased wildlife and vegetation cover, and vi) Increased incomes, with women commanding greater respect.

Future Challenges

Greater effort is required to transform mindsets away from hunting and into alternative income-generating activities; The scale of wildlife conservation needs to be expanded and a decision is needed on whether to turn the areas into national parks, which would promote ecotourism as tourist destinations; The APFED Showcase project has evolved into a newly launched project supported by the GEF-UNDP Small Grant Programme to address forest conservation and local community empowerment where ecosystem management and livelihood improvement need to be pursued in greater convergence.

General Information

Name of Implementing Organization: Society for conservation and protection of environment (SCOPE)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Access to Safe Drinking Water via Nadi Water Filter in Remote Rural Areas

Project Site Location Taluka Jati, Thatta District, Sindh

Background - Problems Addressed and Policy Responses

As households in target villages use unfiltered canal water there is a high incidence of water-borne and gastric diseases, compounded by a lack of awareness and means by which to control them. Further, women travel 1-2 km or more to fetch water, but have no awareness of the need to filter it or filtration means.



Nadi filter brings new hope for village communities to have access to clean water

Project Outline - Objectives and Activities

Twenty CBOs from vulnerable villages in the coastal area were organised within a year; Access to safe, clean drinking water for 1,000 families and 12,000 individuals was provided on a sustainable basis via 1,000 Bio-Sand Nadi filter units from September 1, 2007 to August 30, 2008; Twenty capacity-building training workshops on health - and hygiene-awareness were held among 100 women leaders in 20 villages and 4 TOT (Training of trainers) workshops on the Nadi filter were held among the women CBO members.

Impacts and Achievements

Through provision of 1,000 Nadi filter units, sustainable access to safe and clean drinking water for 1,000 families and 12,000 individuals was achieved. Families that previously drunk canal water were trained in use of Nadi filter units at the household level in 22 villages in rural areas. The project was successful as Nadi water filters procured in the village communities suppressed outbreaks of gastritis and diarrhea. Also, the number of hospital visits by infants and children has been lowered. Multi-stakeholder cooperation was the key to success of this project.

Future Challenges

As a result of severe flooding during Aug 2010, the Jati area became submerged, which severely damaged all homes, agriculture, roads and infrastructure. Therefore, support to reinstall Nadi filter units is needed in flood-affected villages to provide drinking water for the afflicted women and children inhabitants.

General Information

Name of Implementing Organization:

Association for Humanitarian Development (AHD)

Type of Organization:

NGO/CBO

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Climate Change Mitigation: Greening Organisations to Reduce Ecological Footprint

Project Site Location Islamabad, Karachi and Lahore

Background - Problems Addressed and Policy Responses

Following the unequivocal evidence of Climate Change (CC) accepted by the Intergovernmental Panel, climate change has become a major global environmental and development concern. But as much as action is required from all quarters to address the issue, multi-stakeholder support is still missing in countries like Pakistan to undertake efforts on resource conservation and climate change mitigation.



Participants of EF Workshop (January 2010)

Project Outline - Objectives and Activities

The objective of the project was to initiate low-carbon, resource-conserving trends among the corporate and private sectors in Pakistan for climate change mitigation and environmental conservation. Envisaged as an innovative resource management project, the initiative mainly involved customisation of an Ecological Footprint (EF) assessment tool for medium to large sized local organisations in Pakistan, to raise awareness of the environmental impact of their office operations and also to help them plan and manage the adoption of sustainable office policies and practices.

Impacts and Achievements

The project introduced EF assessment technology in Pakistan and provided an innovative method for educating target groups on environmental and sustainability issues. LEAD used the assessment tool to measure the EF of its head office in Islamabad, which enabled more efficient and sustainable consumption of resources. The whole exercise was documented as a case-study and showcased at training sessions in Lahore, Karachi and Islamabad where over 50 organisations were sensitised to the concept of EF and green offices. Participating organisations were able to conceptualise simple action plans for reducing the EF of their offices as a result of this training.

Future Challenges

To date, awareness-raising campaigns have been limited to certain groups of stakeholders and individuals; however, it is extremely important to effectively utilise this tool in raising climate change mitigation awareness within society at large, especially among the younger generation. The target groups and sectors - transport, students, government buildings, schools, households, and offices - also need focusing on to spread awareness of EF and to elicit support in making the world livable for future generations.

General Information

Name of Implementing Organization: LEAD Pakistan

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Environmental Improvement and Greenhouse Gas Reductions via Use of Fuel-efficient Technologies and Reduced Woodcutting

Project Site Location Kohistan District, KPK, Pakistan

Background - Problems Addressed and Policy Responses

Ninety percent of the population in Kohistan live in an area that receives 81% of the rainfall and rely on the abundance of natural resources for their existence. In particular, women collect large amounts of fodder for livestock and wood for kitchen fuel. However, the expanding population is depleting the forest areas and being affected by environmental problems.



Tree plantation

Project Outline - Objectives and Activities

This project is intended to improve livelihoods and environmental conditions in the target area via (1) introduction of fuel and energy efficient stove technologies (e.g., smokeless stoves), and (2) awareness-raising through social mobilisation and training (e.g., training of women on household use of stoves and maintenance of fuel-efficient stoves). In total, 300 households within the 11 council union in Kohistan were targeted for this project.

Impacts and Achievements

This project has resulted in several impacts: Forest conservation in Kohistan; Reduction in women's workload in fetching wood and improvement in empowerment of women in forest conservation; General improvement of health for several generations due to improved environmental conditions; Improved household economy; General increase in forest productivity through reduced use of wood and timber for energy and tree plantation; and general improvement in air quality through reduction in CO₂. Further, activities implemented via the project compliment the aims of the National Forest Policy 2002 and National Environment Policy 2005.

Future Challenges

In July 2010, Pakistan received much rain, resulting in heavy flooding throughout the country, including the project areas. The floods caused extensive damage in the project area, cutting off roads and communications for a period of two months. Based on these circumstances, we suspended project activities for three months, and informed Khwaja Mehmood at SDPI of this. These were the key challenges faced by the project during the implementation period.

General Information

Name of Implementing Organization:

National Integrated and Development Association (NIDA-Pakistan)

Type of Organization:

NGO/CBO

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Waste Management and Environmental Education for Damniyamgama Tsunami Resettlement Village

Project Site Location

The APFED project was carried out in Lagoswatta, now renamed as Damniyamgama1, in the Kalutara District in the Western Province of Sri Lanka. The village is approximately 4 km from the coastal town of Kalutara which is the district centre and around 40 km south of Colombo, the commercial capital of the country.



Colour-coded bins for metal/glass/paper/ plastic and polythene

Background - Problems Addressed and Policy Responses

Waste management is a serious environmental concern in Sri Lanka. Solid waste management is a burden to local authorities, and involvement in such at the household and community levels in urban and semi-urban areas is insufficient. The project was an attempt to incorporate a community-based waste management system including recycling, reducing and reusing while enhancing environmental awareness in the village.

Project Outline - Objectives and Activities

The project's objective was to provide a long-term, localised solution to the issue of waste management in housing settlements with minimal burden on the local authority. Through educational seminars and demonstrations, the community was made aware of the importance of waste separation, reuse of organic material as compost, maintaining a clean, and litter-free environment, importance of home gardening with the produced compost and the benefit of segregation and recycling of non-biodegradable waste such as plastic, glass and metal.

Impacts and Achievements

The project's most positive impacts to the site have been the establishment of the collection centre, funding of composting bins for each household, fostering and sustaining a change in mindset and encouragement of organic farming. Damniyamgama has established a very progressive, cooperative, inclusive system that effectively allows residents to dispose of all types of solid waste within their village in a safe, manageable manner which leaves the environment clean and healthy. Therefore, the project has greatly contributed to the aesthetics of the village.

Future Challenges

Continuation of the collection programme depends on the commitment of the volunteers and improvements to sorting practices; therefore, the future challenges are: Continuing awareness programmes to advocate correct sorting methods; Carrying out door-to-door inspections of the composting systems to identify problems; Offering incentives through society to best-kept gardens; Developing a small village market place for organic produce; and Utilising the recycling finances to benefit the majority of the public.

General Information

Name of Implementing Organization: Sarvodaya Shramadana Movement

Type of Organization: NGO/CBO

Contact Information: Vinya S. Ariyaratne

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Project Monitoring and Review (NetRes/Collaborators):

Vinya S. Ariyaratne, General Secretary, Sarvodaya E-mail: vinya@sarvodaya.org

Enhanced Generation and Utilisation of Bio Energy

Project Site Location

Gurugoda, Nikewaratiya, (Situated in the Rasnayakapura Divisional Secretariat Division)

Background - Problems Addressed and Policy Responses

The power generation mix in Sri Lanka is comprised of energy generated from hydro, petroleum and biomass with strong dependence on fossil fuel. However, due to escalating fuel prices, limited and uncertain supply and over 4 million inhabitants still living in off-grid areas, the country requires alternative energy sources such as bio energy to facilitate decentralised generation.



Fresh jatropha produce

Project Outline - Objectives and Activities

Jatropha demonstration plantations were established as live fences with selected communities and about 7,000 plants were planted. Energy plantation was done at the household level and a plot at the University of Ruhuma. Oil extraction, processing and engine testing was completed at the NERD Centre* and University of Peradeniya, with the Castor, Jatropha, Rubber, Domba and Neem seeds. A bio diesel processing machine was installed at Gurugoda LBF centre and used to produce bio diesel.

*The National Engineering Research and Development Centre

Impacts and Achievements

Community-level awareness programmes were conducted around the project site to gain public understanding of the energy plantation work. Oil extraction and processing into biofuel was carried out at the biofuel centre and operation of internal combustion engines was demonstrated.

Future Challenges

The key challenge for the study is to increase the cost-benefit of the biofuel produced to make the price comparable to commercial fossil fuel, as lower biofuel prices would ensure lower power generation costs. Further, decentralised biofuel power generation would ensure power for populations residing in off-grid areas.

General Information

Name of Implementing Organization:

Practical Action South Asia (Intermediate Technology Development Group)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Application of Green Bio Energy City Concept in Trincomalee City Based on the Integrated Solid Waste Management

Project Site Location

Trincomalee city and Galle city, Sri Lanka

Background – Problems Addressed and Policy Responses

The project is to mitigate climate change via reducing the emissions from urban waste dumping in the selected area Trincomalee city in Sri Lanka. The project aims to implement 3R (Reduce, Reuse, and Recycle) strategies for domestic waste management. HELP-O (Human Environmental Links Progressive Organization) has been implementing the project called “Green Bio Energy Model City - Galle, Sri Lanka.”



Biogas application at the household level

Project Outline – Objectives and Activities

The main strategies are to segregate domestic garbage and manage degradable garbage. The activities were undertaken to establish a committee and local organization and conduct an awareness programme, conduct a survey, conduct an exchange programme between Trincomalee and Galle, conduct technical training program, install biogas units in a hotel and five households, and conduct a workshop on climate change and carbon sinks.

Impacts and Achievements

The APFED Showcase supported HELP-O. The project was given the prestigious Earth Care Award 2012 by The Times of India. The award ceremony took place on 14 September 2012 hosted by The Times of India and the Jindal Southwest (JSW) Foundation in association with the Centre for Environment Education. The award recognizes the innovation that was exemplified by the project in pursuing sustainable development. The Earth Care Awards is unique and aimed at highlighting action of direct relevance to the South Asian Association for Regional Cooperation (SAARC) initiative to tackle challenges posed by climate change.

Future Challenges

The stakeholders need to sustain their understanding and actions to segregate domestic wastes. It is important to ensure that funds will continue to flow from the revolving fund with the repayment by the recipients. The revolving fund must be supported by the incomes of biogas and bio fertilizer while defraying maintenance and repairs costs. The project must result in reduce the volume of dumped garbage and methane and CO₂ emissions.

General Information

Name of Implementing Organization: Human Environmental links Progressive Organization (HELP-O)

Type of Organization: Non-governmental

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Project Monitoring and Review (NetRes/Collaborators):

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Rainwater Harvesting for Sustainable Water Resource Development and Climate Change Adaptation

Project Site Location Khorsan province, City of Mashhad

Background - Problems Addressed and Policy Responses

Mashhad city has low rainfall and uses groundwater as the main source of city water, which has been highly contaminated with chemicals released from the traditional sewerage system. As the national countermeasure policy demands that groundwater utilisation be greatly reduced in both urban and agricultural sectors, a new approach to water management is needed.



University students visiting the site

Project Outline - Objectives and Activities

The purpose of the project is to demonstrate and evaluate the potential of rainwater harvesting as a water resource development programme by building, operating and monitoring a well designed rainwater harvesting system in Mashhad city. During and after the project, technical discussions were held to exchange experiences and provide supporting material for the decision makers at the technical and political levels. A permanent exhibition centre was also established for local people and visiting pilgrims, to raise public awareness of the project.

Impacts and Achievements

This project demonstrated that rainwater can be a reliable water resource in the dry area, as the reservoir was almost full at the end of rainy season in 2010, with no leakage, enabling about 60% for use as bathroom washing water. Public awareness of the project was raised through presentation of the monitoring results at an international conference and establishment of an exhibition centre, frequented by many university students and government officers.

Future Challenges

The future uses of harvested rainwater depend on needs and the quantity and quality monitoring data. Further, discussions with relevant stakeholders at the technical and political levels should be implemented in order to achieve sustainable water management by disseminating the rainwater harvesting system throughout the city.

General Information

Name of Implementing Organization:

Khorsan Agri. and Nat. Res. Research Center (KANRRC)

Type of Organization: Governmental Research Institute

Contact Information: J. Tabatabaee Yazdi

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Website: <http://www.kanrrc.ac.ir>

Project Monitoring and Review (NetRes/Collaborators):

Tetsuo Kuyama, Institute for Global Environmental Strategies (IGES)

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Sustainable development of Settlements in Karakum Desert

Project Site Location

Karakum desert, 120km north of Ashgabat, Turkmenistan

Background - Problems Addressed and Policy Responses

Turkmenistan, which joined the UNCCD In 1996, is an agrarian country undergoing desertification and droughts which has resulted in widespread poverty. Therefore, measures are needed to restore and improve the agricultural system based on sustainable use of rangelands and oasis agriculture.



Solar-Thermo Panel Installation (exterior, shower premise, School Bahardock)

Project Outline - Objectives and Activities

The aim of this project was to enable development of small sustainable settlements in Turkmenistan in the remote Karakum desert, 120km north of Ashgabat. The main activities are drop irrigation for school gardens, space heating of schools via alternative energy, awareness surveys, dune stabilisation, improvement of pasture land, use of solar energy for pumping water and lighting of shepherd cabins, establishment of small gardens for vegetables and medical plants and holding workshops.

Impacts and Achievements

This project represents a prime example of combating desertification in Turkmenistan and the Aral Sea basin. In carrying out this project local authorities soon realised the potential for sustainable development, which involved a new combined-activity approach towards sustainable management of desert-based settlements.

Future Challenges

Future challenges for sustainable development of settlements in the Karakum desert are to create policy and administrative structures for more decentralised decision-making processes, create mechanisms for land-user consultations, expand local-level action and to develop local management plans.

General Information

Name of Implementing Organization:

The National Institute of Deserts, Flora and Fauna of the Ministry of Nature Protection of Turkmenistan

Type of Organization: Governmental Research Institute

Contact Information: Chary Muradov, Head of Department

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Project Monitoring and Review (NetRes/Collaborators):

Jangmin Chu, Korea Environment Institute (KEI)

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Introduction of the Concept of Payments for Ecosystem Services to Uzbekistan

Project Site Location

Ugam-Chatkal National Park, Uzbekistan

Background – Problems Addressed and Policy Responses

The ecosystems and biodiversity of Uzbekistan provide a wide variety of essential services. Yet, present human activities degrade ecosystems causing biodiversity loss, desertification, salinization, land scape destrution, water quality aggravation and water shortages. The payment for ecosystem services (PES) is a market-based tool for effective ecosystems management and would empower local communities.



Field visit to the PES site

Project Outline – Objectives and Activities

The Regional Environmental Centre for Central Asia (CAREC) has started the project to introduce PES by identifying gaps and opportunities, raise awareness and initiate behavioral changes with the support of the APFED Showcase Programme with the co-funding by the Swiss Federal Office of the Environment (FOEN), the Norway Ministry of Foreign Affairs and the US Agency for International Development (USAID).

Impacts and Achievements

The activities were undertaken to (1) coordinate and develop the feasibility analysis reports on legal and institutional aspects, and social and economic frameworks, (2) make available documents on PES in Uzbek language and distributed for local stakeholders, (3) organize a meeting with local authorities and NGOs, (4) organize the coordinating council of the project with the State Committee for Nature Protection of Uzbekistan, develop and sign the Memorandum of cooperation with the local NGO partner – NGO Ecoforum of Uzbekistan, and (5) mobilize experts with the view to facilitating the introduction and implementation of PES.

Future Challenges

It is important to undertake the planned activities including training sessions on PES for government officials. It is also a key to conduct consultations and build agreements among stakeholders on PES including NGOs, community members and experts particularly those involved in Brichmulla village and the Ugam-Chatkal National Park. Ecosystem, biodiversity and socio-economic assessment outcome needs to be taken in to account to facilitate effective implementation of PES.

General Information

Name of Implementing Organization: The Regional Environmental Centre for Central Asia (CAREC)

Type of Organization: a non-partisan, non-advocacy, not-for-profit organization of international character.

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

Taiji Fujisaki, Institute for Global Environmental Strategies (IGES) Email: fujisaki@iges.or.jp

Youth Leaders for Waste-wise Communities

Project Site Location Hapmak and Motusa (in Rotuma)

Background - Problems Addressed and Policy Responses

Although an international port of entry was recently established, enabling better access to Rotuma, the island's remoteness limits its access to many services and no proper waste management system exists. The mainland also provides no assistance for waste management and farmers rely on chemical fertilisers to enhance agricultural production, which impact on the ground water systems and marine environment.



Young people setting up their model organic farm

Project Outline - Objectives and Activities

Effecting waste-wise communities through simple, innovative and sustainable waste management and minimisation practices through youth-based action, this initiative promotes environmental ethics and a sense of shared responsibility for better resource management in the general community. Part of the initiative involves the creation of special waste-management information packs, translated into the local language for use by youth leaders to facilitate learning and mobilize action within the community. The initiative also serves as a model, especially for other remote oceanic islands facing similar challenges.

Impacts and Achievements

Hapmak is now a plastic-free community, an outcome of youth mobilization, and eco-bags are produced and sold by the young community members to support this initiative. Model organic farms are set up at target sites and produce there from supplements family meals, with any surplus produce sold at local markets - a model that could be replicated throughout Rotuma. The youth group involved intends to purchase solar panels for the community, and a portion of sales (from eco-bags and agricultural produce) is set aside for this cause. Further, educational materials have been translated into two local languages.

Future Challenges

Waste management is complex, and shipment and disposal of solid waste such as metals (from machinery, housing, food packages) is costly, presenting a real challenge for the communities within developing small islands such as Rotuma. Establishment of waste-free communities under such circumstances cannot be realised without education in practical, innovative solutions, as well the creation of support structures, enabling an holistic response. Governmental support in establishing national policies to address such issues is one strategy that could assist the islanders.

General Information

Name of Implementing Organization: Live & Learn Environmental Education

Type of Organization: NGO/CBO

Contact Information: Morena Rigamoto, Country Manager

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Project Monitoring and Review (NetRes/Collaborators):

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Ona Keto Community Reforestation Project

Project Site Location

Eastern Highlands Province-Daulo District Community Council Wards 1, 2 and 3

Background - Problems Addressed and Policy Responses

The targeted area consists of two tribes of people, Ona and Keto, both of which grow coffee and practise small-scale subsistence farming for household consumption. However, it is important to take into account the unique land tenure system that allows land ownership only by clans or communities, and not by individuals. The area also faces a heat problem, water shortages and forest and grass fires during dry seasons.



Area for Planting

Project Outline - Objectives and Activities

This project is an initiative of the Ona and Keto communities, and is aimed at combating the spread of grassland via engaging the community in tree planting (reforestation) on their communal land. In the pilot scheme, community members were trained in tree planting, tending and weeding. They then jointly planted tree seedlings on the collectively-owned land, with the ownership thereof conferred upon the landowners.

Impacts and Achievements

Trees were planted on all infertile grassland; Land management via individuals provided land owners with tree management responsibilities; Small income generation activities were established; Awareness-raising was improved.

Future Challenges

One of the challenges will be in maintaining the community's interest in the project over the long term, as the benefits themselves are not realised over the short term. A further challenge will be to ensure that the future harvest of the plantation will be appropriately managed to provide equitable benefit for the members of the community.

General Information

Name of Implementing Organization: Partners With Melanesians Inc.

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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APFED Award

Project Profile and Update

Year	Number of Projects
2006	5
2007	5
2008	6
2009	5
2009 (Japan Ishikawa Award)	6
Total	27

-  Climate change
-  Disasters and conflicts
-  Ecosystem management
-  Environmental governance
-  Harmful substances
-  Resource efficiency

[Award]  Gold  Silver  Bronze  Incentive

Maintaining Environmental Sustainability via Legal Means

Project Site Location Beijing

Background - Problems Addressed and Policy Responses

The Center for Legal Assistance to Pollution Victims (CLAPV) was established in October 1998 by China University of Political Science and Law and registered with the Judicial Ministry of the PRC. They work together with legal experts and scholars to provide free legal advice for pollution victims applying via a hotline, letter or personal visit.



4-Pipes collecting polluted waters

Project Outline - Objectives and Activities

CLAPV aims to safeguard the environmental rights and interests of pollution victims via provision of assistance in court proceedings, which also increases public awareness of environmental and legal rights, thus promoting the enforcement and compliance of Chinese environmental laws. CLAPV's objectives include environmental law enforcement training, raising public awareness and improving environmental legislation and assuring compliance with the Environmental and Natural Resources Law.

Impacts and Achievements

CLAPV offers legal assistance to environmental victims. Through June 2010, CLAPV had assisted in 150 environmental pollution cases, most of which have broadly impacted on society as they closely relate to property, health and even lives of citizens. As a result of CLAPV's activities in securing environmental rights via legal means, the pressure is now on enterprises that have infringed rules or damaged the environment and local governments lax in environmental protection. This raises public awareness of the need to protect their environmental rights. CLAPV is also responsible for enactment and amendment of most of China's environmental laws.

Future Challenges

The challenges are to continue the hotline and ongoing training of legal personnel in environmental practice, as well as creation of consultancies and holding of seminars for NGOs and journalists. Although CLAPV has set up an environmental public interest law firm, which will play an important role in training environmental lawyers, more financial and programme support is needed to attract more full-time layers into litigation and research, as well as to help form an overall environmental legal system.

General Information

Name of Implementing Organization:

Center for Legal Assistance to Pollution Victims (CLAPV), China University of Political Science and Laws

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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The Efficient Lighting Initiative Quality Certification Institute - Promotion of Energy Efficient and Sustainable Lighting

Project Site Location Beijing, China

Background - Problems Addressed and Policy Responses

Improving the efficiency of lighting can be an important means to lower greenhouse gas emissions. The Efficient Lighting Initiative (ELI) was designed as a market transformation programme intended to expand markets for energy efficient lighting, specifically, to increase demand, sales volume, and product availability to induce a downward pressure on prices in the target markets over the long-term.



A testing laboratory based in Beijing

Project Outline - Objectives and Activities

The long-term aim of ELI is to maintain a self-sustaining, non-profit organisation that facilitates the usage of high quality, high efficiency lighting products in developing countries. ELI focuses on the following critical activities: development and revision of product quality specifications; creation of certified products available to the market; awareness-raising of the ELI brand and benefits to market aggregation groups; and support for adoption of individual or groups of ELI specifications by such market aggregators.

Impacts and Achievements

ELI developed a clearly defined strategy to implement energy-efficient lighting technologies and products targeted at developing countries. The ELI Voluntary Technical Specifications are developed in line with international best practices in consultation with key market stakeholders. The ELI quality certification is fully operational with associated technical and application documentation available and appropriate certification procedures in place. ELI has established a dialogue with manufacturers; 20 manufacturers have applied for certification for over 200 models. ELI conducted two Conferences in China and facilitated three stakeholder meetings in its target regions.

Future Challenges

The ELI experience shows that it is indeed possible to transform markets via market-oriented and voluntary labeling schemes. However, market penetration of high efficiency and high quality products could only be increased owing to the presence of regulatory support and endorsements of high efficiency performance specifications at the national level. Therefore, local representation and replication of the ELI approach makes sense and reinforces the perception of value added by voluntary labeling schemes.

General Information

Name of Implementing Organization:

ELI Quality Certification Institute

Type of Organization: Governmental Research Institute

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Project Monitoring and Review (NetRes/Collaborators):

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Capacity Building for Sustainable Construction

Project Site Location

Three northeastern Chinese provinces and the Inner Mongolia Autonomous Region

Background - Problems Addressed and Policy Responses

Every year, over 400,000 people die prematurely in China due to poor air quality. China is now the largest global greenhouse gas emitter, with approximately half of emissions being attributable to the construction and operation of buildings. Sustainable construction in China is therefore a topic of international concern.



Strawbales building

Project Outline - Objectives and Activities

The ultimate goal of the project is to enable the construction of architecturally sound buildings using environmentally-preferable and locally-sourced materials, labour and financing. In this concern, ADRA China has introduced strawbale construction technology.

Impacts and Achievements

Training has been held for 120 building technicians. External to the project's aims and objectives, a number of secondary benefits have also been realised: Rural strawbale homeowners and builders are showing interest in other aspects of sustainable construction, such as passive solar, rainwater capture, efficient lighting and efficient stoves. These same homeowners, builders, straw farmers and government officials are becoming increasingly aware of other sustainability issues such as organic farming practices and resource conservation.

Future Challenges

As brick production will be gradually phased out, loss of employment in this field has been recognised, but not ameliorated at the governmental level. Taking into account the conventional reliance on brick for housing, a large number of workers will lose their livelihoods. Another anticipated concern is that along with the expansion in strawbale house construction, improperly trained builders may become involved in the process. Thorough training and education therefore needs to be provided to all the stakeholders involved.

General Information

Name of Implementing Organization:

Adventist Development and Relief Agency (ADRA) China

Type of Organization:

NGO/CBO

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Puzhehei Watershed Eco-Sanitation Project Phase II

Project Site Location Qiubei County, Wenshan Prefecture, Yunnan Province, China

Background - Problems Addressed and Policy Responses

The Puzhehei Lake is an agglomeration of small lakes providing drinking water to the local population. Monitoring data shows that the water quality of the lake has deteriorated over the past ten years. The adoption of a household-centered approach has improved the water quality by the dissemination of nutrient recycling knowledge and the introduction of feasible and adaptive eco-sanitation technologies.

Project Outline - Objectives and Activities

The overall objective of the project is to alleviate water pollution of the Puzhehei watershed by the diffusion of eco-sanitation practices. The main activities include: establishment of 78 household urine-diverting dry toilets in two villages; establishment of one semi-public dry toilet in a primary school; construction of a pilot biogas generation facility with a fermentation volume of 200m³ for animal waste disposal; and various education and capacity-building activities for local communities and schools.



200m³ integrated biogas plant for animal waste treatment in Badaoshao

Impacts and Achievements

The established dry toilets and animal waste treatment facility are all put to good use. The lifestyle of the villages has been changed, and sanitation habits are gradually forming. Slurry from the biogas system is utilised by farmers as organic fertilizer. An enlarged biogas generation facility is under construction for disposing of more animal waste from surrounding livestock breeding households. Examples of the several additional outcomes are the start of a new course focusing on environmental protection at three primary schools and a junior middle school and the production of a 30-minute video for disseminating the project experiences.

Future Challenges

A large gap exists between the limited impact of this project and the actual needs for further improvement of water quality of the lake. A master plan to tackle the problems of pollution of the entire watershed is needed, which should involve the combined efforts of local governments at different levels in its preparation and implementation, building on and expanding the participatory model and experience achieved through this project.

General Information

Name of Implementing Organization:

Yunnan Environment Development Institute (YEDI)

Type of Organization:

NGO/CBO

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Rehabilitating the Misogi River via Company-NPO Linkage

Project Site Location

Noto Region, Misogi River Basin

Background - Problems Addressed and Policy Responses

The Misogi River, which is located in one of the urban development areas of Nanao City, is polluted, and every summer it has an usual odour. It is very important, therefore, to improve the environmental condition of the river to enable continued urban development of the area.



Cleaning the Misogi River

Project Outline - Objectives and Activities

The purpose of this project is to cleanse the polluted river and to implement urban development through the creation of a water-depuration system and various activities related to urban development.

Impacts and Achievements

Achievements realized through the project are: (1) increased harmony between the people of the city and the river, and (2) the successful cleaning of the river water by local companies.

Future Challenges

The future challenges are: (1) to create an intern programme in Noto by which students can join various companies to resolve several environmental and community-development issues in Noto; (2) to implement social enterprises via exchange students; and (3) fundraising for development and improvement of the community.

General Information

Name of Implementing Organization:

Misogigawa Co. Ltd.

Type of Organization:

Private Company

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Paying Back Mother Earth through Hakui High School's Energy Saving Activities

Project Site Location Ishikawa Prefecture

Background - Problems Addressed and Policy Responses

This project was designed to disseminate environmental conservation activities carried out by schools throughout the locality. Through the dissemination of environmental information, especially the importance of environmental conservation actions carried out by schools, such actions and activities are intended to be expanded upon within the local community by its citizens.



Well-managed: A pond for Killifishes

Project Outline - Objectives and Activities

The purpose of this project was to build an educational 'space' comprising two environment zones - one for biodiversity and one for conservation of energy and natural resources - with the goal of promoting citizen-based action. The activities of this project aim at (1) Reduced use of electricity, water, paper and fuel, (2) Increased recycling and reduced amount of waste, (3) Promotion of Green purchasing, and (4) Awareness-raising about the environment.

Impacts and Achievements

Awareness-raising was achieved gradually, through the following two means: (1) implementation of Environmental Studies at the "Eco Study Zone" for learning about the importance of the natural environment in rural areas - as Hakui is a technical high school, students are given the opportunity to build memorial objects such as biotopes and ornamental bridges as graduation outputs. Such activities can visually impact on, and be passed onto junior students. (2) implementation of case study symposiums for environmental education. Further, an approx. 6.3% reduction in CO₂ emissions and 17.4% reduction in water usage were achieved in FY 2008.

Future Challenges

No major problems were observed in the case of Hakui as most activities are already embedded within the school's daily activities and curriculum. However, for replicating the project in other schools, much consultation between the stakeholders as regards organisational agreement on the integration of eco-activities into school practices would be required. Another challenge lies in connecting like-minded environmentally-conscious teachers, as they are few and far between, and their voices are often not heard.

General Information

Name of Implementing Organization:

Hakui High School

Type of Organization: Other (High School)

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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In 2009, Four Additional Projects were Selected for the Japan-Ishikawa Award

Japan

Award 2009



Bronze-Ishikawa



Local Cooperation Work on Forest Management and Satoyama Conservation Activities

Ishikawa Forest Supporters Club

This club works with volunteers in the Noto, Kanazawa and Kaga areas in activities that include forest conservation, such as clearing away underbrush, cropping and cutting branches, as well as capacity development via education and dissemination.

Japan

Award 2009



Incentive-Ishikawa



Seiko Eco Project – Aiming to be the World’s Top Eco School

Ishikawa Prefecture Daiseiji High School

In 2002 Daiseiji High School initiated the Seiko Eco Project in order to tackle environmental issues as a school and to solve the problem of an unkempt forest due to aging of the forest workforce. One of the projects has targeted a yearly reduction in CO₂ of 5% and another aims to support forest management. As of 2008, the project had reduced the usage of electricity, water and paper, as well as amount of waste by 15%-47%. The volunteers also tidied up a 100 ha forest.

Japan

Award 2009



Incentive-Ishikawa



Countering Global Warming through Financial Business Operations

Noto Kyoei Shinkin Bank

Noto Kyoei Shinkin Bank created a fixed-deposit financial product, the Noto Credit Eco Plan, to contribute to and invest in CO₂ Reduction, CO₂ Sequestering and Forest Conservation. More than 800 families have invested in the product, which is presently valued at around 2 billion JPY. Over 10 million JPY of this was released for utilisation in forest management and awareness raising in the local community. Noto Kyoei Shinkin Bank was officially certified by Ishikawa Prefecture for its activities in absorbing 37.5 tons of CO₂.

Japan

Award 2009



Incentive-Ishikawa



Duck Pond Rice Paddy Club

Kaga-City Rice Paddy Observatory Club

The Duck Pond Rice Paddy Club started its activities in 1996. They educate the local community in the benefits of traditional rice paddy management, pesticide-free farming and organic rice farming for biodiversity and health. This style of farming also involves using the paddies as a winter resting area to increase the populations of duck and wild geese. Contracts with farmers have assisted in sales of “duck rice,” and profits have been utilised to cover the running costs of the club.

Resuscitation of the Geumho River

Project Site Location

Daegu Metropolitan city and Basin of the Geumho River

Background - Problems Addressed and Policy Responses

The Geumho River is a main tributary of the Nakdong River, an important source of water for the people living along the river basin. However, the Geumho became polluted, which triggered conflicts between upper and downstream areas. Considering the importance of water quality protection in the Geumho River, Daegu City established a strategic plan to make improvements.



The Geumho River winds through parts of Daegu

Project Outline - Objectives and Activities

Daegu City set a target of improved water quality of the Geumho River to meet National Environmental Standard Grade III - below BOD 6 mg/l. Restoration of the water environment, home to diverse animals and plants, was another quality improvement objective. The construction of sewage treatment plants was incorporated into the city's long-term development plan, for which a large budget was set aside. Roles have also been assigned for corporations, environmental organizations and citizens as part of the improvement plan.

Impacts and Achievements

Wastewater treatment plants were introduced to the city, which raised the Geumho River water quality. Awareness-raising was provided via NGO environmental education programme financed by Daegu City. Ordinary citizens participated in water quality monitoring and reporting and played an important role in maintaining water quality. The goal of National Environmental Standard Grade III was achieved, with water quality maintained up to 4.0 mg/l on average in 2005 and upstream-downstream conflicts over water pollution have been resolved.

Future Challenges

Restoration of the water environment, including conservation of biodiversity on the riverbanks, although partly addressed within objectives of city plans, needs to be further strengthened. Other cities in Korea may have similar water quality issues, which would require investment in wastewater treatment plants as well as public involvement in education and awareness-raising programmes similar to that undertaken in Daegu City.

General Information

Name of Implementing Organization:

Daegu, Metropolitan City

Type of Organization:

Governmental Organisation

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Public-Private Partnership for Improving Waste Management, Mitigating Climate Change and Promoting Community Development

Project Site Location

Pontianak, Bekasi, Palembang , Makassar

Background - Problems Addressed and Policy Responses

Severe sustainability issues have been generated in Indonesia due to the rising volumes of waste it produces. Further, landfills cause conflicts over land use and scavengers working on them face health risks and remain socially marginalised. Landfills also emit methane gas, which has a very high climate change impact - 25 times the global warming potential (GWP) of CO₂.



Methane transport pipes in Pontianak

Project Outline - Objectives and Activities

Gikoko, a private company, developed a plan with the city authority to remove methane in the cities of Pontianak, Bekasi, Palembang and Makassar and registered the project under the United Nations Framework Convention Climate Change Clean Development Mechanism (UNFCCC CDM). Gikoko agreed to share the proceeds from CDM for community development and upgrading waste-collection systems. In June 2007, the first Pontianak Landfill gas-collection and control system was constructed and an emission-reduction purchase agreement was signed with the World Bank.

Impacts and Achievements

The project was successfully registered under the CDM, and demonstrated a methane-removal rate of 55-60%. Validation of methane gas removal for CER in Palembang, Bekasi and Makassar began in January 2008 with the UNFCCC technical review team of validation officials and CERs were issued thereafter. Several large municipal cities, including Jakarta, have stipulated that the CDM shall be promoted through public-private partnerships, building upon Gikoko's business model. Tripartite dialogues have been promoted among Gikoko, local waste management authorities and scavenger communities for improving waste management and promoting community development.

Future Challenges

While methane incineration systems were installed and partially operated, they are not used to generate energy, electricity for instance, due to the subsidised price and exclusive grid control under the national power company. Despite the promotion of 3R policies, waste volumes continue to increase and waste separation at source is underpromoted. Further, scavengers still operate the landfill sites and no plans have materialised to share revenues with local communities as the Certified Emission Reductions have not been sold.

General Information

Name of Implementing Organization: PT Gikoko Kogyo Indonesia

Type of Organization: Governmental Organization, Private Company

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Project Monitoring and Review (NetRes/Collaborators):

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Institutionalising Local Mechanisms for Integrated Sustainable Water Management and Water Governance

Project Site Location Baguio City

Background - Problems Addressed and Policy Responses

Access to safe drinking water has been increasingly threatened due to growing water demand, over-extraction of groundwater, pollution of water basins and the impact of global warming. The authority over water resource management conventionally rested with various line ministries, and such compartmentalised public administration was a major obstacle to promoting integrated water resource management.



Multi-stakeholder dialogue on water resource management in Baguio

Project Outline - Objectives and Activities

The project aimed at strengthening the water-resource governance mechanisms of Baguio City to enhance the convergence of water-related policies and to promote better policy coordination for improved water resource management at the local level. Under the project, it was intended to reform the vertically compartmentalised water resource management to a horizontally unified mechanism, develop a medium-term water development and investment plan, revise water charges and cost recovery scale and to create multi-stakeholder policy dialogue bodies.

Impacts and Achievements

To address local water management an executive order was adopted to unite the disparate public offices with authorities over water resources in the city's water department, resulting in the creation of the City Water Resources Board (CWRB). A city ordinance was adopted in 2007 that requires the city to issue a permit for well-drillers and water extractors and the city to compel well-drillers and water extractors to submit environmental monitoring reports. Further, a water investment plan was adopted for 2005-2010, valued at 1.3 million USD. Stakeholder dialogues were institutionalised and integrated watershed management and reforestation activities were launched.

Future Challenges

Forests are dwindling and need bolstering to enhance their capacity to store water; Friction between forest conservation issues and the squatters living there needs resolving; A collective consensus on policy options between potable water distributors, well drillers and pipe water suppliers who all have differing interests needs to be reached, in order to conserve water resource use; Sewage treatment fees and collection methods require regular monitoring, and the problem of unlicensed car washers releasing waste water into rivers needs resolving.

General Information

Name of Implementing Organization: ICLEI-Local Governments for Sustainability, Southeast Asia

Type of Organization: NGO/CBO + Governmental Organisation

Contact Information: Victorino Aquitania

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Tel: 63-2-426-0851 Fax: 63-2-426-0851 E-mail: vic.aquitania@iclei.org Website: <http://www.iclei.org/sea>

Project Monitoring and Review (NetRes/Collaborators):

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Ecological Solid Waste Management Programme [ESWM]

Project Site Location

Santo Tomas Municipality, Davao del Norte

Background - Problems Addressed and Policy Responses

The waste generated in Santo Tomas is mainly organic; and in 2003, 368 tons were generated, with 89% from agro-industrial sources followed by recyclable waste from residential sources. The lack of proper collection and disposal facilities has exacerbated the waste problem. Thus, the ESWM programme was established to promote waste reduction, through enhanced public participation.



The itinerant buyers of recyclable wastes, such as plastics and bottles around the municipality

Project Outline - Objectives and Activities

A ten-year plan composed of education, engineering, enforcement and entrepreneurship was established as a guiding framework. The education component promotes information and education to introduce the programme to the public; the enforcement component lays out the regulations on non-segregated waste disposal; and the third component, engineering, supports infrastructure and technical requirements such as collection, transportation and disposal. Entrepreneurship supports various income-generation projects from waste management, such as composting and recycling.

Impacts and Achievements

After four years of implementation, waste generation has decreased to 75% of the original 368 tons. This reduction is attributed to the treatment of agro-industrial waste through composting as well as waste segregation and recycling at the household level. Improved recycling facilities have also led to a 45% waste diversion rate and have generated income from the sale of compost products and construction materials made from waste. The success of the ESWM programme has earned Santo Tomas recognition as a model SWM implementer. As such, it has attracted neighboring communities, municipalities, cities and organizations to adopt the same SWM strategies.

Future Challenges

Although the municipal government has been successful in adopting practical strategies to address the increasing amounts of waste generated and gained popular public support in its waste endeavours, the sustainability of the programme remains a challenge. Institutionalisation of the ESWM programme and its activities is needed in order to sustain the achievements.

General Information

Name of Implementing Organization:

Municipality of Santo Tomas

Type of Organization: Governmental Organisation

Contact Information: Mayor Maximo Estela

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Project Monitoring and Review (NetRes/Collaborators):

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The Working Ducks with Women Power for Agriculture Governance and Rice Sufficiency

Project Site Location Mindanao Island

Background - Problems Addressed and Policy Responses

High chemical inputs to the rice farming industry are causing health problems and a debt cycle among farmers in the Philippines. The Integrated Rice-Duck Farming system (IRDF), on the contrary, minimises chemical inputs while maximizing the ecological features of rice paddies. Facilitated by PARFUND, an agrarian reform NGO, IRDF is particularly promoted and valued by the women leaders.



Ducklings eating pests and weeds after rice transplanting

Project Outline - Objectives and Activities

PARFUND facilitates the efficacy and practical implementation activities of the IRDF system. The main activities of PARFUND are:

- Support of the IRDF system throughout the entire Philippines
- Dissemination and upgrading of analysis and other related information
- Provision of training for the farmers, technicians, and other workers of partner agencies
- Conducting and facilitating monitoring and research
- Constructing a holistic IRDF network both nationally and internationally
- Promotion of market mechanism of IRDF industries

Impacts and Achievements

- Raised food security via sustainable farming and yield improvements
- Increased savings as a result of less agrochemical inputs
- Alternative income generation from duck eggs and meat
- Reduced labor for rice farming
- Improved food varieties and nutrition

Future Challenges

PARFUND acknowledges that there are a hundred approaches to a hundred regions, meaning that the IRDF project needs to respect each region's characteristics and select outstanding champions (or leaders) in each region in order to effectively enhance the project. Currently, IRDF implemented by PARFUND is estimated to cover 1,000 hectares around the Mindanao region and their target is to expand IRDF areas to 5,000 hectares by 2015.

General Information

Name of Implementing Organization:

PARFUND (Philippines Agrarian Reform Foundation for National Development, Inc.)

Type of Organization:

NGO/CBO

Contact Information:

Apollo PACAMALAN
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Tel: 632-433-6999 Fax: 632-920-5168 E-mail: parfund@yahoo.com
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Project Monitoring and Review (NetRes/Collaborators):

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Promoting Public Participation in Protection of Vietnam's Wildlife via Education for Nature - Vietnam's Wildlife Crime Hotline

Project Site Location Vietnam

Background - Problems Addressed and Policy Responses

The illegal trade in wildlife in Vietnam is an emerging issue due to growing demand for wildlife products, such as traditional medicines and food soaked in alcohol and pets, itself caused by a trend in society's association of wildlife products as status symbols.

Project Outline - Objectives and Activities

The Wildlife Crime Hotline enables the public to be actively engaged in the protection of wildlife and is used to report on suspected crimes involving wildlife via a free hotline. Those reporting are kept up-to-date with cases. Education for Nature-Vietnam (ENV) has made efforts in educating the public on wildlife protection, and in establishing the Wildlife Protection Volunteer Network and Mobile Wildlife Crimes Unit for investigating wildlife crimes.



Public bus advertisement depicting wildlife crime

Impacts and Achievements

The number of wildlife crimes has decreased since 2005. The number of reports received by the Hotline rose by 42% in its second year, and from 2005 to 2006, 383 crimes had been logged, 314 of which were resolved. Punishments start with a warning issued by ENV staff or the authorities, then, for example, confiscation of animals and loss of the business license. The impacts can be measured by the number of successful cases and use of the Hotline. Public awareness campaigns and university events have attracted youth, some of whom are involved in the Wildlife Protection Volunteer Network.

Future Challenges

Challenges are; 1) creation of a guideline that can effectively implement the law and elucidate the interpretation of the articles of the Biodiversity Law; 2) government involvement through law enforcement that includes the confiscation of wildlife from illegal owners and the prosecution of owners involved in the wildlife black market; and 3) capacity development of volunteers and inspectors for identifying legal and illegal species and for conveying the potential criminal implications to the related parties.

General Information

Name of Implementing Organization: Education for Nature-Vietnam (ENV)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Disappearing Land: Supporting Communities Affected by River Erosion

Project Site Location

Gaibandha District

Background - Problems Addressed and Policy Responses

A large part of Bangladesh is covered by a network of rivers and tributaries whose courses change due to geo-hydrological factors. Since most of the land is either densely inhabited or put to other economic use, river course variation has historically led to severe socio-economic impacts on the communities living adjacent to these rivers.



Floating vegetable gardens attended by growers during peak floods

Project Outline - Objectives and Activities

1) To provide basic services, through cluster village development and multi-purpose refugee shelters, to the poorer citizens living on riverbanks and vulnerable to natural disasters. 2) To provide alternative livelihood options to persons displaced or at risk of being displaced by riverbank erosion. 3) To improve the social, civil, and political rights of disadvantaged citizens affected by riverbank erosion.

Impacts and Achievements

Four hundred and sixty sandbar farmers have produced 2,244 tons of pumpkins with 359 USD per capita net income in 180 days with secured food supply and income during the lean period; 116 floating vegetable producers have earned 2,137 USD; 2,950 homestead vegetable producer groups have produced 495.6 tons of green vegetables, fetching an income of 48,796 USD; 379 floating fish cage operators have produced 9.4 tons of fish, with an income of 9,825 USD in six months; and a total of 18 community-based fishery groups have earned an income of 14,637 USD.

Future Challenges

Characterising and understanding the causal factors of river erosion and introducing mitigation options; recognition of displaced communities by local governments for providing the state benefits; identification and construction of resettlement areas, enhanced support for capacity-building for resilient livelihood-generating activities; greater access to natural resources, including the sand dunes, for displaced populations; promoting private sector involvement and greater coordination among NGOs and local governments for sustainability of initiatives.

General Information

Name of Implementing Organization:

Practical Action Bangladesh

Type of Organization: NGO/CBO

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Improving Rural Livelihoods: Promoting Sustainable and Safer Vegetable Production

Project Site Location Bangladesh and India

Background - Problems Addressed and Policy Responses

Eggplant is an important vegetable in South Asia. In its cultivation, pesticides are increasingly used due to increased damage by arthropod pests such as the eggplant fruit and shoot borer (EFSB). However, many of the pesticides are classified by WHO as extremely hazardous and banned or severely restricted due to their accumulative negative impacts on human health and ecosystems.



Pheromone trap used as integrated pest management

Project Outline - Objectives and Activities

Under the project for promoting integrated pest management (IPM) in Bangladesh, the Bangladesh Agricultural Research Institute (BARI) has undertaken measures to eliminate the use of pesticides and to promote alternative pest control methods, such as insect pheromone traps. The measures included prompt cutting and removal of pest-damaged shoots, development of EFSB-resistant eggplant cultivars, biological control with locally-available natural enemies, and sex pheromone traps using female pest pheromones to attract male pests and kill them in water-filled containers.

Impacts and Achievements

Demonstrations and training were conducted on IPM technology for rural farmers and the EFSB IPM technology was adopted by 9,984 eggplant growers in Bangladesh and India over the past six years. This reduced pesticide use by up to 75%, the cost of production by 30% and eggplant infection by up to 40%, and increased the net income of the IPM adopters by 60%. A documentary film was produced in English and then dubbed into Bengali, Gujarati, Hindi, Khasi and Oriya and telecast multiple times, and three multi-lingual follow-up brochures were produced. Reduced health hazards and resource degradation were also observed.

Future Challenges

It is important to increase the number of IPM-practicing farmers by demonstrating the multiple merits of reduced infection rates, reduced health and ecosystem hazards and increased profits. It is also vital to inform consumers of the production process of eggplant, particularly pesticide use and IPM implementation, and develop markets and partnerships for promoting IPM-cultivated eggplant. Further, law enforcement and compliance need to be strengthened on pesticides, taking into account the Rotterdam Convention on Persistent Organic Pollutants.

General Information

Name of Implementing Organization:

AVRDC - The World Vegetable Center

Type of Organization: NGO/CBO, Governmental Research Institute

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Gram Nidhi: Eco Enterprises for Sustainable Livelihoods in Ecologically Semi-Arid Rural Areas

Project Site Location Gujarat State

Background - Problems Addressed and Policy Responses

Despite extensive efforts by the Indian government and concerned agencies to reduce poverty, particularly in rural areas, over 220 million people in rural India were still under the poverty line in 2004-2005. The recent economic growth has not provided much benefit to such areas, thus practical measures are required to assist in rural development.



Women entrepreneur produce organic goods

Project Outline - Objectives and Activities

This project aims to establish eco-enterprises for supporting rural development. The target villages depend highly on the natural resources from their neighboring Hingolghadh sanctuary, an area that traditionally cultivated water-intensive crops and cotton, but is now subject to severe environmental degradation. The key objectives are to establish eco-enterprises, including production of organic products, through the village-level institution Paryavaran Vikas Mandlas (PVM), and to enhance the capacity of target villagers for effective management of natural resources.

Impacts and Achievements

At the target villages, PVM are now producing valuable organic goods such as butter oil, cactus fruit juice and traditional medicine plants for the market. The introduction of animal husbandry through provision of training to the villages has increased milk production, allowing surpluses to be sold. Money obtained from this and the sale of organic products can be put towards child education or saved for future emergencies.

Another major impact of this project is in its challenge to establish female role stereotypes in India's highly male-dominated society.

Future Challenges

The existence of a funding organization and the Centre for Environment Education (CEE) played pivotal roles in this project; without their intervention, particularly at the start of the project, it would have been very difficult to gain the villagers' recognition as to why they should participate in the project. Therefore, it is important to assess what motivations lie behind village institutions and communities.

General Information

Name of Implementing Organization:

Centre for Environment Education

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

Kyoko Matsumoto, Institute for Global Environmental Strategies (IGES)

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Transforming Lives and Landscapes - ITC's Integrated Watershed Development Programme

Project Site Location

Rajasthan, Maharashtra, Madhya Pradesh, Bihar, Andhra Pradesh, Kamataka, Tami Nadu

Background - Problems Addressed and Policy Responses

The project sites, Madhya Pradesh and Rajasthan States are located in the west of India, a semi-arid climate zone with average yearly precipitation of 1,043 mm. Despite the prevailing water stress and drought in the region, the primary industry is agriculture. However, yields are unstable, which destabilises the livelihoods of farmers.



The satisfied villagers who are participated in the project

Project Outline - Objectives and Activities

The objective of this watershed management programme is to improve the availability of water for agriculture, develop livelihoods and raise environmental sustainability. Under the water and soil conservation programme, check dams and irrigation tanks have been installed in close collaboration with the community. An animal husbandry programme provides low-fee-based door-to-door services for artificial insemination and livestock management training.

Impacts and Achievements

Three major positive impacts on the local community have been observed: increased income level; empowerment of the villagers; and improvement of the environment through groundwater replenishment via the installed rainwater harvesting structures and the adoption of sustainable agricultural practices. Although the actual income figure is unknown, there is an overall perception of raised standard of living. Variation in the types of agriculture practised as led to reduced vulnerability to natural disasters. Further, increased empowerment of the villagers through working on the project has raised their self-confidence and willingness to assist in other voluntary efforts.

Future Challenges

Future challenges for this project are in sustaining the institutional mechanism at the village level for governance and decision-making, livelihood enhancement, encouraging voluntary action, and maintenance and operation of rainwater harvesting infrastructures. Further, interaction between the governmental programme and NGO activities needs to be enhanced.

General Information

Name of Implementing Organization:

ITC Ltd.

Type of Organization:

Private Company

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Building Zero Energy Development Communities to Mainstream Sustainability - T-Zed Homes

Project Site Location

White field, Bangalore, Karnataka

Background - Problems Addressed and Policy Responses

As Bangalore city grew it engulfed the surrounding villages, which has placed pressure on basic facilities such as sewage and water supply. Overtaking of the villages also led to loss of natural drainage channels and sources of water provided by a wide network of lakes, which are now either repositories for sewage or development sites for real estate projects.

Project Outline - Objectives and Activities

The purpose of BCIL is essentially to mainstream sustainability, which means utilising so-called 'alternate' technologies and establishing them as cutting-edge systems needed in the marketplace. BCIL's work on energy and water led it towards implementing projects like T-Zed. In order to reduce CO₂ emissions, activities such as setting targets for optimal social and environmental standards and sourcing alternative "eco-friendly" modes of energy use were implemented.



T-Zed apartment blocks showing projecting and receding massing creating shading for the lower floors

Impacts and Achievements

Green homes are available at almost the same initial cost as conventional buildings and, due to changing attitudes toward the environment, buying into such houses has led to a redefinition of where consumers now place value in life. Also, pilot communities have awakened members to the new sensitivities of rational views of water and energy without having to compromise on comfort and convenience. Furthermore, 20,000 tonnes of CO₂ capital savings (approx. \$240,000), and 1,500 tonnes of CO₂ operational savings (approx. \$180,000 for annual) were achieved.

Future Challenges

Although the concept of T-Zed can be applied to any income group, the civil construction cost is not affordable. T-Zed assumes that if the state government can provide the land by purchasing it at a subsidy from municipalities, such houses should be affordable, and provide the same, or comparable level of service, quality, comfort and functions for those in the lower, and low-middle income groups.

General Information

Name of Implementing Organization:

BCIL (Biodiversity Conservation India Limited)

Type of Organization:

Private Company

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Promoting the Ingenious Use of a Plant Invasive, *Lantana Camara*, to Enhance the Livelihood of the Forest Dwelling Communities

Project Site Location

Malai Mahadeshwara Hills (MM Hills), Karnataka State

Background - Problems Addressed and Policy Responses

Extensive felling of native forest vegetation in the MM Hills, especially bamboo, led to rapid spread of *Lantana camara* (Lantana), one of the world's most invasive weeds, over nearly 80% of the forest land. The livelihood of the local tribal community, the Soligas, was affected from 1996 when the district forest officials imposed a ban on bamboo felling.



Varnishing faniture made of *Lantana camera*, invasive weed

Project Outline - Objectives and Activities

Specific objectives were to 1) train tribal artisans in the use of Lantana as a substitute for bamboo in fabricating furniture, 2) design appropriate Lantana products for rural and urban clients, 3) develop rural and urban market strategies and linkages for Lantana products, 4) evaluate the diffusion of Lantana technology among the tribal communities and its impact on their livelihoods. The main activities involved: identification of beneficiaries, awareness creation, exposure trips, training programmes, product design inputs and marketing.

Impacts and Achievements

The programme has significantly impacted, socially and economically, those families who have made Lantana furniture making their main source of livelihood. Based on interviews with male and female artisans, there appears to be a high level of satisfaction linked with the income obtained from Lantana furniture making. Environmentally, the project has created an alternative to livelihoods based on firewood chopping. However, interviews conducted with the forest officials suggest that the Lantana used by the artisans is usually collected from the shady slopes, whereas the major Lantana invasion is in the open areas.

Future Challenges

Interviews with the participants revealed that there is a certain amount of resistance to the new type of work from the older generation. Another challenge is the high trainee dropout rate of this project, the primary cause of which is competition from quarry work. There is also a time lag of about 45 days from the start of training to actual sale of products, which is financially challenging for those whose livelihood is usually based on a daily wage.

General Information

Name of Implementing Organization:

Ashoka Trust for Research in Ecology and the Environment (ATREE)

Type of Organization: Academic/Research Institute

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Project Monitoring and Review (NetRes/Collaborators):

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Remarks: Shashi Kad E-mail: shashi.kad@gmail.com



Promoting Coconut-Based Agro-Ecosystem and Efficient Product Utilization for Augmenting On-Farm Income, Improving Quality of Environment and Conserving Natural Resources

Project Site Location Alappuzha District, Kerala

Background - Problems Addressed and Policy Responses

Kerala is a coastal state in southern India where land holders plant coconut as a monocrop. Coir spinning is an alternative coconut-based income for 60% of residents in the project area, around 80% of whom are below the poverty line (<1.5 USD/day). The women engaged in coir processing are exposed to laborious and hazardous working conditions without commensurate income.



Integrated farming (multicrops)

Project Outline - Objectives and Activities

The project seeks to 1) Increase carbon sink in the community, 2) Strengthen ecology-based farming, 3) Ensure continuous availability of biomass for energy sources, 4) Augment income and employment at the farm-household and community levels through efficient utilization of locally available materials, 5) Improve the working conditions of the women in the coir spinning sector, and 6) Improve the capacity of local residents in income generation and environmental conservation.

Impacts and Achievements

This project has enhanced sustainable development in terms of improving rural livelihoods, poverty alleviation, resource efficiency, and environmental rehabilitation, with the following results: 1) Improved agro-biodiversity in 15,000 farm-households (345 hectares), 2) Improved on-farm biodiversity via integrated farming, which generates income and employment, 3) Provision of full time employment for 116 women and part-time employment for 58 men at the Vayalar Fibre Mills, 4) Provision of regular full time employment through improved spinning wheels for around 740 women and part-time employment for around 370 men, 5) Approx. 2,260 men and 1,475 women have benefited from capacity-building programmes.

Future Challenges

The project has made some changes, but lacks in maintaining data, records and scientific impact analysis. Benchmark data needs to be correlated with clear-cut improvements and development, to assess the total socio-economic transformation and impact on ecosystems. Data monitoring needs to be incorporated as a built-in mechanism. Seed money and microfinance may be essential to enhance replication on a larger scale. Market assistance is also required to enhance trainees engaged in income-generation activities.

General Information

Name of Implementing Organization: Peekay Tree Crops Development Foundation

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

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Mitigation of the Effects of the Carbon Dioxide and other Greenhouse Gases by Controlling Slash and Burn Practices

Project Site Location Manahari, Handikhola, Kankada and Raksirang VDCs, Makawanpur District

Background - Problems Addressed and Policy Responses

Shifting cultivation in increasingly shorter cycles on the steep slopes of the project areas is associated with deforestation, loss of biodiversity, threat of forest fires, emissions of greenhouse gases, and serious soil erosion, leading to a significant decline in land productivity. In addition, local indigenous minority communities lack know-how and make little use of agricultural inputs.

Project Outline - Objectives and Activities

The specific objectives were: 1) development of appropriate land use practices for sustainable production as an alternative to shifting cultivation; 2) introduction of several incentive schemes to motivate the farmers to adopt energy-saving technologies; 3) development of community-based organisations to implement activities; 4) development of skilled human resources. Main activities were: a) institutional development; b) introduction of agroforestry in slash and burn areas; c) promotion of energy-efficient technologies; d) livelihood promotion; e) capacity development.



The successfully introduced agroforestry, banana planting

Impacts and Achievements

The project successfully introduced agroforestry, mainly based on banana planting (also pineapple, cinnamon, broom grass, etc.), while integrating horticulture development, livestock farming and vermicomposting. The most important achievement of the agroforestry component was to improve the livelihoods of local farmers by offering a number of income opportunities. In total, 1,089 households participated in agroforestry over 438 hectares of land during the project period. Most households also benefited from at least one energy-saving technology. Informal and formal local community organisations created by the project have taken the initiative in continuation of project activities.

Future Challenges

The challenges are to continue the hotline and ongoing training of legal personnel in environmental practice, as well as creation of consultancies and holding of seminars for NGOs and journalists. Although CLAPV has set up an environmental public interest law firm, which will play an important role in training environmental lawyers, more financial and programme support is needed to attract more full-time layers into litigation and research, as well as to help form an overall environmental legal system.

General Information

Name of Implementing Organization:

Manahari Development Institute (MDI-Nepal)

Type of Organization:

NGO/CBO

Contact Information:

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Project Monitoring and Review (NetRes/Collaborators):

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Establishing Private, Public and Civil Society Partnerships for Ensuring Long-term Sustainability of Off-grid Community-based Renewable Energy Power Projects

Project Site Location

Sabaragamuwa, Southern, Uva and Central Provinces, in the off-grid areas in the up country

Background - Problems Addressed and Policy Responses

Sri Lanka is a country with rich biodiversity but also many poor off-grid communities suffering from lack of access to educational and professional opportunities. The Energy Forum and the Federation of Electricity Consumer Societies (FECS) took on the challenge of improving community livelihoods by facilitating access to energy sources, whilst safeguarding natural resources and minimising dependence on fossil fuels.



One light bulb can light the living room for a cozy evening

Project Outline - Objectives and Activities

The Energy Forum and FECS (awarded by APFED in 2009) have facilitated access by off-grid communities to environmentally-sustainable energy, such as micro-hydro and biogas. They have provided technical assistance for the construction of such facilities and fund provision via national financing mechanisms. Furthermore, the FECS has contributed to protecting local interests by voicing members' interests at the national level. It has also contributed to capacity-building and skill-sharing among off-grid energy consumer societies in Sri Lanka.

Impacts and Achievements

FECS, acting as an umbrella organisation, has over 200 member societies, with 300 micro-hydro schemes providing electricity to some 10,000 off-grid households, and has conducted capacity-building workshops on leadership and operation of power plants and trained 578 village leaders attached to 321 societies. Access to electricity has allowed many income-generating activities such as tailor shops, hair salons and grinding mills. In particular, children benefit greatly from electrification, as they can study more effectively. Today, the Energy Forum acts as an off-grid sector representative at the Board of the Sri Lanka Sustainable Energy Authority which was established in 2007.

Future Challenges

There are areas of Sri Lanka where the potential for micro-hydro power is unexploited. It is anticipated that use of sustainable energy will be key to the resettlement process under way since the end of the civil war. The development of dendro-power and biogas power will also create opportunities for off-grid dry zone communities to access modern technology. These practices need to be replicated in other developing countries and emerging economies as an alternative development model to counter climate change.

General Information

Name of Implementing Organization:

The Energy Forum (Guarantee) Ltd (EF), The Federation of Electricity Consumer Societies (FECS)

Type of Organization: NGO/CBO

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Project Monitoring and Review (NetRes/Collaborators):

Sana Okayasu, Kitakyushu Urban Centre, IGES E-mail: okayasu@iges.or.jp

Rehabilitating a Rural Economy with Virgin Coconut Oil Production

Project Site Location Malaita, San Cristabel and Santa Isabel

Background - Problems Addressed and Policy Responses

Many tropical coastal communities face the threat of rising sea levels, along with social issues. One, Solomon Islands, has experienced much social unrest. In an attempt to improve the socio-economic conditions of the population, a local church-linked company joined hands with an Australian technology company in a joint venture utilizing its Direct Micro Expelling (DME) virgin coconut oil (VCO) technology to form KPSI.



Coconut shells used for making by-products

Project Outline - Objectives and Activities

KPSI has improved the livelihoods of the rural population by more effectively utilising their coconut resources through the production of export-quality VCO, which can also be used as local transport fuel in farms. KPSI integrates marginalised rural populations into the formal economy by providing a full administrative framework for the DME system, finding committed families in rural areas, providing a credit mechanism, training staff and farmers, supervising construction and organising oil collection, quality control and export within full Organic Certification protocols.

Impacts and Achievements

The project has enabled farming communities to produce pure VCO, providing rural populations with a meaningful job, regular income and enhanced QOL*. Fourteen DME units have been installed in three island provinces and the HQ, warehousing and bulk storage has been set up in Honiara. Organic Certification was issued to 255 growers covering 2,622.75 Ha. over 86,000 litres of VCO have been produced since June 2004 (as of 2006) based on an averaged 10-unit output, with 80% being exported, for an income of over 164,000 AUD. Multiplier effects include the emergence of rural markets in the project areas.

* QOL: quality of life

Future Challenges

Some of the challenges are scaling up and replication of the project in other small island nations, while also maintaining demand for Virgin Coconut Oil. Despite the clear benefits, it requires strong-minded entrepreneurs to set up production centres and run them for a community, which has proved too difficult for some people. Further, although donor-assisted at the project outset, up-front equipment costs are high for subsistence farmers, thus a clearer support mechanism is needed to maintain the substantial benefits.

General Information

Name of Implementing Organization: Kokonut Pacific Solomon Islands Ltd (KPSI)

Type of Organization: Private Company

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Project Monitoring and Review (NetRes/Collaborators):

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Christie Walk Ecocity Project

Project Site Location South Australia, Adelaide

Background - Problems Addressed and Policy Responses

Christie Walk was designed to demonstrate the concept of building housing which is resource efficient, non toxic, energy and water efficient and which increases biodiversity, as envisaged by the Urban Ecology Australia Inc (UEA) vision and Ecopolis Architects. As the project is situated in Adelaide - the most mixed-use, culturally diverse part of the city - the design had to overcome complex inner-urban contextual issues.



Christie walk complex

Project Outline - Objectives and Activities

Christie Walk is a research and development project, tasked with the objective of developing a mixed, medium-density community housing project that maximises lifestyle options and minimises environmental impact for a cost comparable to conventional inner-urban developments, and with very low energy bills. In this community-titled development, residents own their own properties and share the common areas. This project demonstrates sustainable development and the importance of urban environments and community processes to overall goals of sustainability.

Impacts and Achievements

Christie Walk was designed to demonstrate the feasibility of addressing key environmental issues via the method by which the built environment is planned and developed, and that social sustainability, the support of community processes and the creation of convivial places are all integral to achieving this. The project has tackled environmental issues such as water conservation, water capture, energy conservation, energy capture, biological productivity, biodiversity, air quality, transport and social sustainability. It has also received much media exposure and welcomed thousands of visitors keen to learn about ecological architecture within the community.

Future Challenges

Future challenges involve ensuring that the wider community is kept informed of the programmes and concepts embodied in Christie Walk. To date this has involved regular site tours, a community mural, videos and an information booklet, as well as the Centre for Urban Ecology, run by the UEA using common facilities and space within the five-storey apartment building. The biggest challenge, however - convincing developers and the government to fully adopt such holistic solutions involving community adaptation to climate change - remains.

General Information

Name of Implementing Organization:

Urban Ecology Australia Inc & Ecopolis Architects Pty Ltd.

Type of Organization: Private Company & NGO/CBO

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