

Reducing Risk and Vulnerability – An Environmental and Humanitarian Reconstruction Partnership

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Summary

The world faces a vital and momentous challenge in finding ways to successfully diminish the impact of disasters on society, the economy, and the environment.

Partnerships between the humanitarian aid community and environmental conservation agencies can help to analyze links between disaster recovery operations and the environment, minimize negative impacts of recovery and reconstruction programs, and encourage development efforts that reduce risk and vulnerability of communities to future disasters. The World Wildlife Fund (WWF) and the American Red Cross formed such a partnership in response to the 2004 Indian Ocean earthquakes and tsunami. The WWF provides advice to the American Red Cross and the other partner agencies based on Green Reconstruction Policy Guidelines developed by WWF soon after the tsunami. The partnership is focused on four sectors: livelihoods, water and sanitation, rebuilding, and disaster management. Methods and techniques employed by the partnership include: 1) collocation of WWF staff in the American Red Cross offices; 2) review and/or redesign of tsunami recovery project proposals; 3) development of environmental sustainability tools and training designed for the humanitarian professional.

Challenges to the partnership include divergent institutional expectations, uneven involvement and buy-in by staff, and achieving a match of technical knowledge and assistance among and between WWF and the American Red Cross. Building on the partnership lessons learned, opportunities in the future include expanding the conceptual framework of disaster risk reduction programs to actively address environmental stewardship and climate change adaptation.

Keywords: (5 short keywords max.): 1) environmental sustainability, 2) partnerships, 3) risk and vulnerability reduction.

Introduction

Environmental degradation predisposes populations to disaster risk

In many countries throughout the world, environmental degradation has led to natural resources such as forests, arable land, and fisheries shrinking to the point where communities, particularly poor ones, dependent on these resources for shelter, food and livelihoods, are more vulnerable to natural catastrophic events.¹

For example, in Central America, legal reforms over the past decades concentrated land ownership with large industry. This resulted in peasant farmers moving to steep hillsides that were farmed for subsistence causing erosion, slope instability, and decreased water infiltration. When Hurricane Mitch hit in 1998, the poor in these areas were the most heavily affected.

In the Sahel and the Horn of Africa, desertification has resulted in pastoralist environments becoming highly fragile and unable to support large concentrations of people. Relief efforts may retain relatively large populations in areas that cannot support them, further degrading the environment and the land's ability to support the livelihoods of those who do live there. When adverse weather strikes, food security is quickly diminished.²

The United Nations (UN) International Strategy for Disaster Reduction states that environmental degradation has led to, "migration to marginal and often more hazard-prone areas and rural-urban migration—often into increasingly more vulnerable urban slums."³ Therefore, through the destruction of the environment, the poor have now been put into situations that greatly increase their vulnerability when disaster strikes.

Because many communities impacted by disaster were already suffering pre-existing environmental, social, and economic decline, humanitarian aid agencies have a responsibility to "build back better" and avoid putting communities back on a continued downward decline.

Disaster recovery operations can impact the environment

Initial phases of emergency responses, especially those involving human displacement, may result in large numbers of people being concentrated in small areas. This has often resulted in deforestation and destruction of water resources.⁴ In many cases, the overcrowded conditions make living conditions

¹ Pelling, Mark, Andrew Maskrey, Pablo Ruiz and Lisa Hall, eds. (2004) "Reducing Disaster Risk: A Challenge for Development" Bureau for Crisis Prevention and Recovery, United Nations Development Programme, pp. 16, 60-61-66-67.

² Hammond, Laura, Jennifer Bush, Kevin Savage and Paul Harvey (2005) "The effects of food aid on household migration patterns and implications for emergency food assessments" World Food Programme, Emergency Needs Assessment Branch, p. 40.

³ "Review of 8 MDGs' relevance for disaster risk reduction and vice-versa." International Strategy for Disaster Reduction, United Nations.

⁴ United Nations High Commissioner on Refugees (2005) *Environmental Guidelines*, pp.6-8, 23-30.

almost unfit for humans. The large scale and urgent timing of emergency relief operations can create the potential for high environmental impact.⁵

Charles Kelly (2004) cites an example where the concentration of Kosovar refugees in Kukes, Albania "exceeded local waste-handling capacities. As a result, refuse tips overflowed and raw sewage was dumped into stream courses. These waste problems were exacerbated by the provision of relief supplies in excessive packaging and the distribution of disposable sanitary items."⁶ Although emergency relief is short term, processes and inputs set in motion during the relief process can turn into long term chronic situations, particularly in refugee camps and large population displacements.

During later recovery operations, especially those resulting from cyclones, earthquakes, landslides, and most notably the tsunami, many permanent houses must be built. Removing local vegetation for site construction or using it as building material, compacting soil for shelter construction, and changing local topography can all directly impact the local environment. In large operations, many agencies often procure raw materials locally, sometimes realizing cheaper prices and providing some local businesses with a temporary boost, but do not adequately consider the sustainable management of the resource. Timber is the more obvious example of this issue but unsustainable production or use of sand, clay, and bricks all can have environmental impacts as well.

Potential for some of the longest term negative effects on the environment are in the area of livelihoods development. Commonly followed practices and policies related to agricultural development enacted after natural disasters can heavily impact the environment. After Hurricane Mitch, donors and regional governments signing the Stockholm Declaration put environmental risk and poverty at the centre of the rehabilitation agenda which helped to guide more sustainable livelihoods strategies, especially in agriculture.⁷ In the tsunami-affected areas, there is concern that depending too heavily on livelihoods based on natural resources such as fisheries and aquaculture can lead to economic and environmental collapse if not properly assessed and managed.

Partnership designed to improve recovery efforts

The world faces a vital and momentous challenge in finding ways to successfully diminish the impact of disasters on society, the economy, and the environment. The frequency of disaster has increased dramatically from fewer than 100 occurrences in 1975 to over 400 in 2005.⁸ From 1995 to 2005, 2.5 billion people were affected by natural and technological disasters, a 60% increase from the

⁵ Shambaugh, J., J. Oglethorpe, and R. Ham (with contributions from Sylvia Tognetti). (2001) *The Trampled Grass: Mitigating the impacts of armed conflict on the environment*, Washington, DC, Biodiversity Support Program (electronic book on the Internet).

⁶ Kelly, Charles (2004) "Including the Environment in Humanitarian Assistance" *Humanitarian Exchange* 27, Humanitarian Practice Network.

⁷ Christoplos, Ian (2001) "Extension, Poverty and Vulnerability in Nicaragua" Overseas Development Institute, pp.10 -11.

⁸ World Bank, Independent Evaluation Group (2006), *Development Actions and the Rising Incidence of Disasters*. Evaluation Brief 4.

previous two decades⁹ and almost 1 million people were killed, double the death toll from the previous decade.¹⁰ Economic loss, including lost livelihoods, is averaging \$63 billion a year.¹¹ Climate change, increasing world population, and environmental degradation are resulting in an increase in the frequency and scale of natural disasters.

Partnerships between the humanitarian aid community and environmental conservation agencies can help to analyze links between disaster recovery operations and the environment, minimize negative impacts of recovery and reconstruction programmes, and encourage development efforts that reduce risk and vulnerability of communities to future disasters. The WWF and the American Red Cross formed such a partnership in response to the 2004 Indian Ocean earthquakes and tsunami. This five-year collaborative effort seeks to ensure that post-tsunami recovery and reconstruction activities avoid environmental degradation, and reduce beneficiary risk and vulnerability to disaster by maintaining healthy ecosystems.

In tsunami-affected areas, the environment represents an important asset, and, if properly managed and maintained, it can provide a solid base for communities to rebuild their lives. Forests provide materials for construction, watersheds provide drinking water, and marine ecosystems serve as a source of food and economic opportunity. Healthy environments can also help protect communities against the effects of future disasters, making it even more important to restore communities and natural resources together. The partnership between WWF and the American Red Cross seeks to build on these opportunities.

A crucial element in enabling communities to achieve their potential is through the awareness that food, water, shelter, livelihoods, and security depend on natural resources, either directly or indirectly. Health and hygiene depend on the sustainable supply of sufficient quantities of clean water. Long-term safe housing depends on proper spatial planning and the use of sustainable supplies of timber, sand and other building supplies. Livelihoods in coastal and rural areas depend on sustainable fish stocks and productive land for farming and other forms of economic activities. The partnership therefore is focused on four sectors: livelihoods, water and sanitation, rebuilding, and disaster management. The American Red Cross implements programs with its own staff, through Red Cross Movement partners, as well as through the provision of grants to UN agencies and NGOs. The WWF provides advice to the American Red Cross and the other partner agencies based on Green Reconstruction Policy Guidelines developed by WWF soon after the tsunami. Project proposals are reviewed and American Red Cross or partner staff is engaged with WWF at different levels during project implementation. WWF has given increasing emphasis to environmental issues

⁹ United Nations International Strategy on Disaster Reduction (UNISDR) (2005) *World Conference on Disaster Reduction*, Kobe, Hyogo, Japan

¹⁰ International Federation of Red Cross and Red Crescent Societies (2006) *World Disasters Report 2006: Focus on Neglected Crises*, Geneva.

¹¹ World Bank (2004) *Natural Disasters: Counting the Cost*, March 2, 2004 (electronic article on the Internet).

during disaster response and recovery, developing from ad hoc relationships with humanitarian agencies to the present American Red Cross partnership based on a long-term institutional agreement. The American Red Cross has entered the relationship to access skills in the analysis of environmental issues that both organizations understand are integral to sustainable recovery of tsunami -affected populations and reducing their risk to future disasters.

The partnership is active in Indonesia, the Maldives, Sri Lanka and Thailand. In Sri Lanka and the Maldives where WWF is not operational, the partnership includes the World Conservation Union (IUCN) Sri Lanka as environmental NGO counterpart.

Main challenges and opportunities

The partnership is based on four primary objectives:

- **Partnership Development** - WWF and the American Red Cross establish a team and systems to build a long -term working relationship.
- **Program Design** - WWF provides review and environmental guidance to the American Red Cross and partner projects to ensure projects address sustainability and reduce risk of future disaster.
- **Guidelines** - WWF and the American Red Cross develop tools and methodologies to enhance sustainability in humanitarian programs by developing environmental sustainability guidelines and training in Livelihoods, Shelter, Water and Sanitation, Disaster Management sectors.
- **Institutionalization** – American Red Cross and WWF leverage the partnership to influence a broader community of reconstruction stakeholders and actors by mainstreaming environmental sustainability via trainings, joint publications, advocacy and outreach.

Indicative Success to Date

Partnership development: WWF has collocated full-time staff in the American Red Cross Sri Lanka office and part-time in its Thailand and Indonesia offices. Environmental professionals are becoming members of the American Red Cross in-country teams and are able to provide on-the-spot feedback and advice as well as contribute to the American Red Cross planning and training programs.

Improved project designs: To date WWF has provided environmental guidance on over 50 tsunami recovery project proposals representing approximately \$100 million in recovery investment. Representative project review and revisions include:

- A US\$7 million Food and Agriculture Organization (FAO) fisheries and aquaculture livelihood project, funded by the American Red Cross, was redesigned to avoid over-capitalization of boats and gear while supporting building back natural resource management capacity in local governments and communities.
- The partnership supported the American Red Cross in constructing treatment wetlands in Indonesia and Sri Lanka. The partnership also leads a Watershed Forum in Aceh to assist the American Red Cross, local governments and communities undertake watershed level planning and management.

Tools and Training: WWF developed two new tools for the partnership - an Environment Stewardship Worksheet to assist humanitarian aid workers take environmental issues into account while designing projects, and a project Report Card to assist humanitarian aid workers assess the environmental impact of completed projects. WWF and IUCN are also in the process of conducting training on environmental sustainability issues and the use of the tools.

Communication/ Institutionalization: WWF and the American Red Cross jointly drafted and presented a paper on environmental issues related to water and sanitation in recovery operations. WWF also contributed to the UN Office of the Special Envoy for Tsunami Recovery's work on timber procurement for shelter construction. The organizations are also drafting case studies to illustrate how environmental management and planning can support reconstruction objectives.

Challenges

Divergent expectations: Field staff of both organizations had varying, but generally minimal, levels of understanding of the partnership and its activities. Workshops were conducted in Indonesia, Sri Lanka, and Thailand in 2006 to increase awareness and conduct work planning, but in general overall understanding has remained low. Without this understanding of the partnership, there have been different ideas of what the partnership is actually about and what it should be. Frequent turnover of staff, especially in Indonesia, contributed to lack of awareness. Amongst American Red Cross staff project managers, there has been a general feeling of 'What's in it for my project?' The partnership has had an image of one created at headquarters, with little input from the field - very few of the current field staff were actually in place when the partnership was designed. A recent assessment of the partnership conducted by an independent consultant however confirms that 82.5% of WWF/ American Red Cross participants believe the goal and objectives of the partnership that were developed at the program's inception are still valid today. 65.6% of American Red Cross staff believe the partnership goal and objectives are important to meeting American Red Cross goals and objectives.

Involvement and Buy-In: When the partnership began in 2005, American Red Cross recovery projects were still in the design stage. Knowledge and

awareness amongst American Red Cross field staff of the environmental risks of recovery program activities and their impact on long-term well-being of the affected population varied. During the first year after the tsunami, a critical period existed during which relocation sites for housing and water/sanitation projects were not yet selected and livelihood activities were not yet designed. It was still a chaotic time during which humanitarian organizations were rushing to get themselves organized and get new programs started to meet critical needs of affected people. Field staff, many of whom were the prime project designers, found it challenging to focus on the long term effects of their interventions. Governments were at the same time quickly forming environmental policies and laws which the American Red Cross needed to take into account.

Much of American Red Cross strategic planning for tsunami recovery was done internally to enable frank discussion of issues, but utilizing the expertise available through the WWF partnership in the planning processes might have allowed for deeper reflection on environmental issues. The recent assessment confirms that 67.8% of American Red Cross staff believes environmental sustainability is a priority for its Tsunami Recovery Program.

Provision, Understanding and Use of Technical Expertise: While 77.4% of American Red Cross staff found WWF review of proposals useful, and changes were made due to the reviews, more training to help American Red Cross staff understand the linkages between disaster recovery programs, the environment, long-term sustainability, and disaster risk reduction would have been beneficial. WWF however had never been involved with a humanitarian partnership of this scale and magnitude, and therefore used the project review process to learn the culture, language, and drivers of the humanitarian aid professional in order to design and develop training most appropriate and accessible for the mutually desired impact.

Achieving a match of technical knowledge and assistance among and between WWF and American Red Cross staff members has been a major difficulty. For example, environmental experts often study issues in great detail and document them in lengthy reports. Humanitarian aid practitioners, on the other hand, often manage emergency responses by rapid assessments and planning.

WWF has had to learn how to translate environmental conservation techniques designed for large-scale and long-term ecosystem management into practices appropriate for application to disaster reconstruction while convincing American Red Cross staff that a five-year reconstruction program is not an “emergency response” activity, but a development program that can and should include long-term planning. Finding senior staff with environmental analysis skills, knowledge about the humanitarian areas in which the American Red Cross is working, and familiarity with the local operating environment has been challenging. The American Red Cross therefore has at times perceived a failure to match their expectations while WWF has often faced American Red Cross staff clinging to

short-term “it may take too long and cost too much” mindset about adapting to environmental issues .

Different methodologies such as collocation of staff, training, short reports, joint assessments, and use of jointly developed tools has increased the impact and effectiveness of the partnership.

Future Opportunities

Disaster Risk Reduction: Through the lessons learned in this partnership and others, there is an opportunity to expand the conceptual framework of humanitarian disaster risk reduction programs to actively address environmental stewardship and climate change adaptation.

Whether it is increased droughts in Sudan, more intense hurricanes in the Caribbean or increased flooding from rising sea levels in Viet Nam, climate change will have an impact on all programmatic goals and activities. Given the scale and influence of the humanitarian aid and environmental sectors throughout the world, together we are uniquely positioned to take actions that will reduce risk associated with environmental degradation and support adaptation to impacts of climate change and reduce the risk and vulnerability of local communities.

Sustainable Building and Procurement: If humanitarian agencies utilize spatial planning they can ensure that their reconstruction efforts have minimal negative environmental impact and promote positive choices during the reconstruction process that optimize environmental goods and services (such as the provision of adequate and clean drinking water) as well as protect development and livelihood opportunities.¹²

Institutionalizing sustainable building material procurement policies presents an opportunity to reduce negative environmental impacts to beneficiaries or displacement of negative impacts to other communities.

All construction materials have a ‘cradle-to-grave’ impact on the earth. Impacts come from the raw material extraction, transportation, manufacturing processes, construction, use, maintenance, demolition, and disposal. Because some materials have lower environmental impacts than others, addressing green procurement early in the project planning phase can potentially reduce environmental impacts, and avoid wasted materials, time and resources while meeting or enhancing project objectives .

Provision of Guidelines: WWF has reviewed 20 existing disaster emergency guidebooks and identified gaps in environmental integration. WWF and the American Red Cross will build on the partnership lessons learned, as well as the contextual information from the review of existing guidebooks, to craft green

¹² WWF Green Reconstruction Policy Guidelines

reconstruction implementation guidelines, for use in future disaster recovery efforts. WWF will also develop a humanitarian training program for the green guidelines.

Collaboration and Innovation: WWF has crafted the outline for a Humanitarian-Conservation Partnership Initiative (HCPI) designed as a collaborative initiative that bridges the humanitarian aid and environmental sectors to ensure the long-term, sustainable recovery of people and ecosystems affected by disaster. The intention of the Initiative is to establish a fundamentally collaborative partnership that does not reside within any single institution and serves the broader humanitarian aid and environmental sectors by including NGOs, governments, and the private sector in breaking the disaster cycle.

Fortunately, the seeds for collaboration between the environmental and humanitarian aid sectors have already been sown and have demonstrated positive returns for both beneficiaries of aid and the natural resources upon which they depend. We plan to bring the lessons learned and expertise developed into the future HCPI. Some examples include:

- CARE in Sri Lanka seconded a staff member from the IUCN to provide advice to their tsunami program.
- Tearfund, Oxfam, ShelterCenter, and others are working on the integration of environmental considerations into humanitarian aid work.
- WWF has worked with humanitarian aid agencies during emergencies in the past including assisting with refugee camps in protected areas during the Rwanda crisis.
- USAID Environmental Services Program (ESP) a five-year program which was developed by USAID/Indonesia to improve sustainable management of water resources including improved watershed management.

WWF seeks to work with the American Red Cross, and others to bridge the gap between the humanitarian aid and environmental conservation communities in order to promote a sustainable recovery for people and ecosystems affected by disaster. In order to achieve its goal, the HCPI will develop capacity, expertise, and practical field and policy tools to assist both humanitarian aid and environmental conservation organizations in disaster recovery and reconstruction.

Methods and techniques used in the project or the initiative

Methods

Program Design Reviews: WWF reviews project proposals and provides written assessments on potential environmental impacts and guidance on reducing impacts and maximizing beneficiary outcomes. The review process includes a desk study and written feedback with issues categorized into high, medium, or

low priority. Where required, WWF conducts site assessments and consultations in order to provide more detailed analysis.

Collocation of Staff: To build mutual trust, understanding and appreciation of the humanitarian and environmental sectors, environmental professionals are collocated in the American Red Cross offices. Environmental staff in a humanitarian office can become part of the humanitarian team, provide on the spot feedback and work with their aid colleagues to generate greater appreciation for how environmental sustainability can contribute to the success of humanitarian projects. Environmental staff in turn learn about the reality of humanitarian disaster recovery and the pressure from communities, governments, and the media to produce tangible outcomes quickly. They learn how to put environmental guidance into an accessible format that fits the time frame, language, and working style of humanitarian aid staff.

Quality Assurance: WWF provides the American Red Cross and its partners with guidance on parameters to include in third party environmental impact assessments for infrastructure, shelter, or water and sanitation projects. WWF also provides quality assurance of third party assessments in order to ensure the American Red Cross obtains quality products from third party contractors.

Tools

Environment Stewardship Worksheet (ESW): Seeking to address common issues gleaned from 50+ project reviews, WWF crafted the Environment Stewardship Worksheet (ESW) to guide aid staff in designing a disaster recovery project with minimal environmental impacts. The purpose of this worksheet is to help humanitarian aid staff improve project performance by identifying and addressing environmental sustainability issues. Use of this worksheet is consistent with Sphere Shelter and Settlements standard 6. (Sphere is a common framework of standards used by humanitarian agencies.) The ESW covers 22 issues in Air, Water, Natural Resources, Hazardous Materials, Cultural Resources, Socio-economics, Disaster Management, and Spatial Planning categories. The ESW also helps staff address issues of coordination and adherence to local laws, understand cumulative impacts, identify areas in need of further study, and most importantly, take action. WWF provides training in the use of the ESW.

Report Card: The purpose of this tool is to review projects after they have been implemented to determine whether they have achieved environmental sustainability objectives. This report card is consistent with Sphere Standard 6 and the WWF Green Reconstruction Guidelines. The tool includes a compliance matrix covering the same 22 issues in the ESW and an Action Required section to document and facilitate any necessary follow up action.

Partnership Impact Monitoring & Evaluation (M&E)

Based on the partnership Logical Framework goal to “Reduce future ecological vulnerability in the tsunami affected areas by reconstructing sustainable communities based on healthy ecosystems ,” WWF and the American Red Cross are monitoring the impact of the partnership utilizing three parameters (further detail on the indicators can be found in Annex 1) : WWF-American Red Cross Partnership Working Indicators, Transformation of Partners (i.e., environmental awareness of ARC and humanitarian awareness of WWF) Indicators, and Environmental Indicators

Implementation of the monitoring and evaluation (M&E) plan is managed by a WWF M&E Project Coordinator supported by a team of specialists, including a Social Science Consultant, Remote Sensing Specialist, Environmental Impact Assessment Specialist, Water Quality Specialist, and Fisheries Data Analyst. This team will work closely with national staff to ensure survey instruments are localized and culturally appropriate, and include extensive input on local conditions. Several techniques for gathering data will be used including staff surveys, focus group interviews, key informant interviews, remote sensing, field assessment, and fisheries data analysis.

Independent peer review of all analyses will be performed as part of Quality Assurance and Quality Control by a team of staff outside the partnership , from organizations such as the International Federation of the Red Cross Red Crescent Society or IUCN.

Training

In addition to training on the use of the ESW and Report Card, the partnership provides a series of training sessions on environmental sustainability for the humanitarian aid sector based on the Green Reconstruction Policy Guidelines. Topics include green timber procurement, Integrated River Basin Management, and disaster mitigation through environmental stewardship. In addition the partnership provides training on personal and institutional environmental responsibility and footprint reduction techniques.

The comprehensive green training workshops grew out of a shared desire to further increase environmental awareness and understanding among the American Red Cross staff, partners, and volunteers. The green training workshops cover practical matters such as:

- Reducing and recycling waste
- Reducing resource consumption and greenhouse gas emissions
- Minimizing energy and water consumption
- Improving solid-waste management
- Making project designs more environmentally sensitive
- Supporting the wider Red Cross/Red Crescent network and building its capacity in environmental protection and community resiliency

- Increasing environmental awareness and understanding about climate change by illustrating the links between everyday human activities, greenhouse gas emissions and global warming

Institutionalization

The Synthesis Report of the UN Special Envoy/NGO Impact Initiative describes how building better partnerships for sustainable recovery will require “a shift in NGO practice.” To mainstream environmental sustainability into disaster recovery and reconstruction beyond the American Red Cross Tsunami Recovery Program, WWF and the American Red Cross are in the process of undertaking several measures to institutionalize for the long term, practices of the partnership. Some of these initiatives include–

Sphere -Launched by humanitarian NGOs and the Red Cross/Red Crescent Movement, the *Sphere Handbook* includes standards for four sectors of humanitarian assistance. The partnership has offered to provide support to the 2008-2009 Sphere revision process to expand the environmental sustainability component of Sphere, utilizing methods and techniques of the partnership to the extent practical and applicable.

RC/RC Standard Operating Procedures - The partnership plans to address the potential to include the techniques and practices of the partnership into the SOP of the Red Cross/Red Crescent Movement societies.

Lessons learned from the project or the initiative

- Collocating of staff has worked well to build trust and develop deeper understanding of each others programs and ways of working.
- Demonstrating to humanitarian field staff environmental consequences of their work in early phase is helpful so practical alternatives can be developed and demonstrated in the early stages.
- Establishing a means of credibly measuring and documenting the partnership results on people and their environment allows participants to see the real impact of the program.
- Providing continual senior leadership and mentoring is critical to ensuring partnership participants maintain enthusiasm for the goal and objectives of the partnership when faced with the challenges of a new way of work.

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Annex 1

1. WWF-American Red Cross Partnership Working

Indicators:

- i. Awareness of need for partnership
- ii. Knowledge sharing between partners
- iii. Partnership processes (consensus -building and joint decision-making)
- iv. Provision of resources (staff, trust/understanding, physical resources)
- v. Leadership support
- vi. Trust between partners
- vii. Individual accountability

2. Transformation of Partners (i.e., environmental awareness of ARC and humanitarian awareness of WWF)

Indicators:

- i. Understanding and application of environmental sustainability concepts
- ii. Understanding and application of green humanitarian aid technologies
- iii. Understanding and application of sustainable material sourcing
- iv. Understanding and application of environmental stewardship tools (ESW and Report Card)
- v. Understanding and application of Integrated Natural Resources Management
- vi. Understanding and application of humanitarian ideals
- vii. Understanding and application of humanitarian policies (e.g., Sphere Project and WHO)

3. Environmental Indicators

Indicators:

- i. Forest Cover
- ii. Mangroves within watersheds
- iii. Land agriculture
- iv. Coral reefs
- v. Fish stocks
- vi. Water quality

Author's Biography



Anita van Breda, World Wildlife Fund

Anita is the Director of World Wildlife Fund (WWF) Humanitarian Partnerships program based in Washington, DC. Anita received her Biology Bachelor of Science in 1988 from George Mason University and a graduate degree in 1992 from the Yale School of Forestry and Environmental Studies. Her work experience includes environment education in the Bahamas, natural resource management for the US National Park Service in the Virgin Islands, marine conservation in Vanuatu and organizational development and management in Papua New Guinea.

Since 2002 Anita has worked for WWF, initially on Southeast Asia marine conservation issues; following the 2004 Indian Ocean tsunami, Anita developed a partnership with the American Red Cross. Building on the American Red Cross partnership experience, Anita plans to work with colleagues and partners to further develop and refine strategies and tools to apply environmental conservation techniques to future disaster recovery efforts.



Robert Laprade, American Red Cross

Robert is the Program Director for the American Red Cross Tsunami Recovery Program based in Washington, DC. He received his BA in Anthropology and an MBA focussed on logistics and transportation. Mr. Laprade has over 20 years experience in the field of international development, working in both conflict-ridden complex emergencies, as well as long term development. He has managed field operations in the areas of emergency relief, public health, shelter, food security, and micro-finance, for CARE International in Mozambique, Angola, Somalia, Sudan, and Thailand. Also with that organization, he has been a first responder to emergencies during the Afghanistan crisis, the Gujarat earthquake, and the Orissa supercyclone. He has served as the Director of Emergencies and Child Protection for Save the Children during which time he organized and managed relief operations that included responses in Darfur, Iraq, and the 2004 tsunami. Mr. Laprade also served as a Peace Corps volunteer in rural Nepal.