



LESSONS LEARNED | 1866

Waves of change: Lessons learned in rehabilitating coastal livelihoods and communities after disasters

KEY LESSONS LEARNED

- Understand the diversity of coastal people's livelihood strategies and the sources of their vulnerability
- Adopt a process to guide the selection of promising post-disaster livelihood options, assessing them for social and technical feasibility and institutional and environmental sustainability
- Build resilience and sustainability in communities by addressing the root causes of vulnerability — environmental, social, economic and political

On 2 April 2007, an earthquake struck off the Solomon Islands in the western Pacific, causing tsunamis that swept inland as far as 200 meters on several islands in Western and Choiseul provinces. The disaster left 4,000 people homeless and 52 dead.

As the emergency phase of disaster relief drew to a close, attention turned to reconstruction and rehabilitation. To help guide this phase in Western Province, the WorldFish Center took a lead role in assessing the damage done to fisheries and the resulting needs and priorities of the coastal communities that depend on them.

WorldFish applied a framework developed with collaborators after the much larger and more destructive tsunami of December 2004 off Aceh, which devastated coastal communities in that Indonesian province and across the Indian Ocean. Reflecting lessons learned in Aceh, the rehabilitation framework does not simply restore fishing boats and gear and thereby risk or even promote a return to environmentally, economically and socially unsustainable

fishing practices. Instead, it stresses diversifying coastal livelihoods to address the root causes of vulnerability and so build resilience in coastal communities that will enable them to cope with future threats and seize future opportunities.

The framework can be applied after coastal disasters of any kind, including typhoons and oil spills, and will likely prove invaluable as climate change worsens the severity of storms in many coastal areas. It calls for

1. understanding the way communities use their coastal resources, their livelihood strategies and the sources of their vulnerability;
2. adopting a process for designing interventions that builds on this understanding to guide the selection of promising post-disaster livelihood options; and
3. addressing the longer-term challenge of building resilience and sustainability into communities by addressing the root causes of vulnerability.



Rehabilitating coastal livelihoods and communities requires understanding residents' livelihood strategies and vulnerabilities, carefully selecting post-disaster livelihood options, and building communities' resilience and sustainability.

1. UNDERSTAND THE DIVERSITY OF COASTAL PEOPLE'S LIVELIHOOD STRATEGIES AND THE SOURCES OF THEIR VULNERABILITY

Coastal communities that rely on small-scale fisheries are fragile in the best of times. Often dependent on depleted fish stocks and badly degraded ecosystems, they rarely manage to chart sustainable routes out of poverty. Two root causes of vulnerability in coastal communities are physical isolation and seasonal variation in livelihood returns. Others are social and economic power imbalances and marginalization; top-down decision-making; limited ownership of, or access to, resources; dependence on natural resources for subsistence and income, coupled with their overuse; and a lack of information to help them make good decisions independently.

To minimize their vulnerability, many households in coastal communities pursue a range of economic activities — and fishing is itself a diverse occupation. Households may modify existing livelihood strategies, or adopt new ones, in response to changing conditions in their whole ecosystem, both marine and terrestrial.

Studies undertaken early to achieve a better understanding of coastal people's livelihood strategies and vulnerabilities can improve the ability of researchers, policymakers and extension personnel to help them refine those strategies and minimize vulnerabilities.

2. ADOPT A PROCESS TO GUIDE THE SELECTION OF PROMISING POST-DISASTER LIVELIHOOD OPTIONS

The rehabilitation of coastal livelihoods after a natural disaster should be seen as an opportunity to strengthen and revitalize coastal communities. The focus of rehabilitation efforts should be on rebuilding the economic bases of livelihoods, rather than solely on physical reconstruction, and on helping coastal people develop the skills and resources necessary to drive the recovery process themselves.

Rehabilitation should be planned in consultation with the community. Once the target area is defined and the trust and cooperation of the community acquired, resources, needs and opportunities are assessed. Education and capacity development in the community better enable it to participate in formulating the shorter-term rehabilitation plan and longer-term sustainability plan.

Because not everything can be done at once, a process for assessing and deciding on rehabilitation actions needs to take into account issues of both staging and scale. What actions are feasible now? What steps are needed to address more fundamental problems over the longer term? What can be done in the local community, and what challenges are more systemic, requiring policy or institutional change nationally or even internationally?

As sustainability often dictates that fishing capacity not be restored to the level before the disaster — when too many fishers chased too few fish — alternative livelihood options may be required. They must be socially and technically feasible for their target communities, and the beneficiaries must be able to sustain the new activities after external aid is phased out.

2A. ASSESS LIVELIHOOD OPTIONS FOR THEIR SOCIAL FEASIBILITY. Livelihood options must be compatible with the needs and aspirations of the affected community and households, as well as their existing work ethic and livelihood strategies, organization, economic and social structure, gender differences, and culture.

2B. ASSESS LIVELIHOOD OPTIONS FOR THEIR TECHNICAL FEASIBILITY. The choice of livelihood options, and specifically the technology associated with the livelihood options, will depend on its management intensity, technological complexity, risk level and economics. Livelihoods that require little capitalization and can be managed extensively (as opposed to intensively) are often suitable.

2C. ASSESS LIVELIHOOD OPTIONS FOR THEIR INSTITUTIONAL SUSTAINABILITY. New coastal livelihoods must be sustained by the beneficiaries after external organizations phase out their assistance to the community, withdrawing their human, technical and financial resources. Successful efforts to enhance existing livelihoods, diversify livelihoods or adopt alternative livelihoods typically stem from participatory decision-making, bearing in mind the capacity and incentives for coastal people to engage in the livelihood strategy. The sustainability of a livelihood option depends on the availability of supporting infrastructure and the enabling environment, including credit, inputs, markets and technical assistance.

2D. ASSESS LIVELIHOOD OPTIONS FOR THEIR ENVIRONMENTAL SUSTAINABILITY. Fragile and vulnerable as they are, coastal ecosystems not only support coastal livelihoods but also protect developed areas from disasters such as tsunamis. Protecting coastal ecosystems will enhance their ability to provide long-term protection and economic benefits to coastal communities.

3. BUILD RESILIENCE AND SUSTAINABILITY IN COMMUNITIES BY ADDRESSING THE ROOT CAUSES OF VULNERABILITY

Rehabilitating coastal livelihoods is not merely a matter of giving people jobs. It is the occasion to institute fundamental social, economic and environmental reforms: securing for the poor tenure and access to resources, while reducing excess exploitation and so protecting ecosystems; empowering coastal communities by rebuilding community organizations and building equitable market access and facilitating their integration into national

economic development; investing in education and training to support future innovation and development; and reducing vulnerability to natural disasters through careful land-use planning and coastal zone management.

3A. SECURE RESOURCE TENURE AND ACCESS. The rights of the poor to security of tenure over the resources upon which they depend for their livelihood need to be established and asserted so that they can make long-term investments in sustainable livelihoods and resource management. Post-disaster operations need to deal early and sensitively with issues of land ownership. Where possible, land titles should be regularized. In a larger sense, property rights over resources need to be specified and secured to enable resource users to optimize their use and ensure their conservation.

3B. PREVENT OVEREXPLOITATION. Most fisheries are overfished. As fishing capacity in areas affected by disasters should be held below the point of overexploiting fisheries, we must understand their present status and trends. In some cases, fishing gear should be restored to only a portion of pre-disaster levels or fishing effort should be directed elsewhere to ensure the sustainability of the local fisheries. Rehabilitation should ensure that less destructive and more sustainable fishing gear and practices are adopted.

3C. PROTECT ECOSYSTEMS. Wetlands, mangroves, coral reefs, seagrass beds and sand dunes should be identified and protected from development and uses that compromise their structural integrity. Degraded ecosystems require rehabilitation to reestablish their ecological function, which is often difficult and expensive.

3D. REDUCE VULNERABILITY TO NATURAL HAZARDS. Coastal areas are inherently more at risk from natural hazards. National and local development policies may need to be changed to prevent oversettlement in vulnerable locations. Development may need to be directed away from coastal areas through land-use planning and coastal zone management that establish no-build zones and green belts. Any new policies and regulations pertaining to land use and coastal development must include the local population in the planning process and not exclude the poor in favor of more affluent interests and development.

3E. REBUILD COMMUNITY ORGANIZATIONS. Community organizations should be reestablished if lost in the disaster or else newly established. In some cases, traditional community organizations that typically serve one function, such as regulating resource access, may take on new leadership roles. Community organizations must have the legal right to exist, be recognized as legitimate and credible by the community, and be transparent and accountable to their members.

3F. BUILD EQUITABLE MARKET ACCESS. New livelihood options arise from integrating resource users downstream in the market chain by helping them acquire the necessary skills and finance. Skills enhancement,

training in business and financial management, and microfinance can help poor households multiply income-generating opportunities. These enhancements are essential for families that shift out of fishing to reduce excess capacity. Government interventions such as help in establishing production cooperatives may be necessary to support a more equitable marketing system.

3G. INTEGRATE COASTAL COMMUNITIES INTO NATIONAL ECONOMIC DEVELOPMENT. Livelihood development in coastal communities needs to be linked to national economic development plans and to current and future employment needs in the country. Rural coastal communities should be identified for private sector investment in jobs, both in and out of the fisheries sector. Education and skills training interventions can target coastal residents to meet current and projected national employment needs. Greater attention to and investment in social and physical infrastructure can improve the overall quality of life in coastal communities. Paved roads, electricity, drainage, potable water, waste treatment, community halls and schools are some of the investments that serve as foundations for rehabilitation.

3H. INVEST IN EDUCATION AND TRAINING. Knowledge is power, and coastal resource users possess a great deal of indigenous knowledge. However, many are illiterate, and this worsens their vulnerability and limits their livelihood options. The rebuilding of coastal communities presents an opportunity to address their educational and training needs. New schools allow for restructuring curricula to develop new knowledge and skills. Young men and women can learn new skills that meet the immediate needs of rebuilding — such as carpentry, masonry and plumbing — and can continue to be used after rebuilding is completed. New skills, such as computer literacy, can be integrated into curricula to provide a wider range of employment opportunities. Business management and entrepreneurship training can be linked with environmental education to improve the conservation and management of coastal resources. The key to effective disaster response is a community prepared and able to help itself.

3I. RESILIENCE THROUGH PREPAREDNESS. Part of building resilience into coastal communities and enhancing their ability to cope with natural hazards is planning for such eventualities. This may require action by national and local governments in emergency services, communities and individual homes. It may include establishing a forecasting system that detects extreme events and disseminates a warning to threatened communities, infrastructure for moving people into or out of disaster areas, training, drills, and other measures to prepare a locally appropriate response.

FUTURE DIRECTIONS

Post-disaster rehabilitation should look beyond reinstating the problems of the past. It should seek to address the root causes of vulnerability in coastal people and communities and build their capacity to exploit opportunities and their resilience to future threats. This process of “building back better” must engender dialog in coastal communities about the future they envision, the steps needed to get there, and the lessons learned along the way. It must engage an array of actors across government, civil society and the private sector to build understanding of the necessary reforms and commitment to undertake them. As lessons are learned from successful and unsuccessful interventions alike, they should be shared with others for use today and in the future.

For further information please refer to the following:
 Andrew, N.L., C. Béné, S.J. Hall, E.H. Allison, S. Heck and B.D. Ratner. 2007. Diagnosis and management of small-scale fisheries in developing countries. *Fish and Fisheries* 8:227–240.
 Pomeroy, R.S., B.D. Ratner, S.J. Hall, J. Pimoljinda and V. Vivekanandan. 2006. Coping with disaster: Rehabilitating coastal livelihoods and communities. *Marine Policy* 30:786–793.
 Westlund, L., F. Poulain, H. Bage and R. van Anrooy. 2007. Disaster response and risk management in the fisheries sector. *FAO Fisheries Technical Paper* 479. FAO, Rome.

WorldFish research work in Aceh, Indonesia and Solomon Islands was supported by:



Australian Government
 Australian Centre for
 International Agricultural Research



FORD FOUNDATION



The WorldFish Center
 PO Box 500 GPO, 10670 Penang, Malaysia
 Tel: (+60 4) 626 1606 Fax: (+60 4) 626 5530
 Email: worldfishcenter@cgiar.org

Photo credits
 Front top banner L-R:
 Photo 1 : Helen Leitch
 Photo 2 : Eric Baran

Photo 3 : Helen Leitch
 Photo 4 : Alexander Tewfik
 Page 2 : Alexander Tewfik



WorldFish
 Supported by the CGIAR

© 2008 The WorldFish Center
 All rights reserved. This brief may be reproduced for educational or other non-commercial purposes without prior permission from the copyright holders provided the source is fully acknowledged.