

IMPROVING SUSTAINABILITY FOR FISH AND FISHERMEN

Making the Most of a Rebuilding Opportunity for Gulf Coast Fisheries

Monica Galligan, California State University Monterey Bay, monica_galligan@csumb.edu

ABSTRACT

The 2005 Gulf of Mexico hurricanes devastated not only fishing boats but also many businesses interdependent with fishermen: processing plants, ice plants, boat builders, net makers and other suppliers. Fuel prices and other expenses have increased. Wholesale catch prices are down due to damaged markets, lack of storage facilities and, in the shrimp fishery, imports of farmed shrimp.

We commonly discuss ecosystem-based management. We need to include humans in that ecosystem, and use this opportunity to improve:

- Fishery sustainability
- Stewardship of the biophysical environment
- Economic justice for the fishing community
- Understanding and communication among fishery stakeholders

This paper draws on case studies to identify practices that have worked around the world, in Africa, Asia, Australia and New Zealand, the Middle East and South and North America. Each program has been successful in its context.

In this paper, I examine what factors contributed to the success of selected cases, and analyze whether part (or all) of the program would be applicable in the Gulf of Mexico Coastal region (Gulf Coast), given differences in physical and cultural environments.

Any program that draws on finite resources needs to be evaluated regularly, and improved where possible. In this paper I propose a framework for program evaluation that will enable evaluators to determine where the program is succeeding, identify challenges and make improvements.

Keywords: Sustainability, Stewardship, Economic Justice, Communication, Stakeholders

SUSTAINABILITY

The sustainability of Gulf Coast fisheries can be improved by:

- *Implementing appropriate proven fishery management techniques such as Individual Fishing Quotas.* The Gulf of Mexico Fishery Management Council (GMFMC) has already begun discussion on quotas. Quotas will improve the odds of survival for red snapper, grouper and other populations, and improve safety for the fishermen, by eliminating the derby-style seasonal rush. As a market glut is avoided, the wholesale price will increase while the cost of production decreases, further benefiting the fishermen.ⁱ This has been shown to work in the Alaskan halibut fishery.ⁱⁱ Individual Transferable Quotas in Australia and New Zealand

have improved the efficiency of fisheries (fewer boats; higher catch per boat).ⁱⁱⁱ Quotas are suited to some fisheries and not others; any fishery management technique needs to be applied thoughtfully and monitored for success.

- *Restoring barrier islands, reefs and wetlands that protect the coast from storm surge and are habitat for fish and shellfish.* Operation Fresh Start's experience rebuilding communities after flooding shows that sustainable technology such as constructed wetlands mitigate the effects of inevitable future storms.^{iv}
- *Encouraging local innovation to solve local problems.* In Kerala, India, members of artisanal fishing communities have created artificial reefs as habitat for fish populations that need to rebound.^v In the Gulf of Mannar, a community-managed artificial reef project is part of a program that is bringing thousands of fishermen and their families out of poverty.^{vi}
- *Bringing consumer power to bear.* The Monterey Bay Aquarium Seafood Watch program distributes wallet-sized cards indicating which popular market fish are caught in a sustainable fashion. The program has proven that consumer choices can positively affect the market. Industry groups such as the Southern Shrimp Alliance have supported this finding.^{vii} In addition, the Marine Stewardship Council (UK and worldwide) has had great success in promoting well-managed and sustainable fisheries via its MSC logo. The global retail value of MSC-labeled seafood in 2005-2006 (April-March) was US \$155,106,633. After very steep rises in the first few years of the program, this value is rising at a rate of about 16% per year.^{viii}
- *Improving aquaculture practices.* These include:
 - ♦ Decreasing the use of wild fish as fish meal and oil
 - ♦ Siting fish farms distant from wild fish runs
 - ♦ Including vegetation and bivalves near fish farms to recycle waste.^{ix}

Sustainability Case Study: Seafood Watch

The Monterey Bay Aquarium Seafood Watch program has been in effect since the late 1900s. The program promotes sustainable fisheries by educating the public about the effect of their choices as consumers.

Success factors

- *Engage the public.* According to a 2006 visitor survey, the Monterey Bay Aquarium Seafood Watch program has succeeded in engaging the public, largely due to its focus on understanding and consideration rather than unbending political views.
- *Create and maintain public interest.* Interested participants are invited to opt-in to a mailing list or visit a web site that keeps them abreast of changes in seafood sustainability. This has the effect of rejuvenating the public base periodically.
- *Be flexible.* In my experience, the Seafood Watch staff has welcomed challenges and new information; they use new research to update the Seafood Watch cards throughout the year.

Applicability

- According to colleagues in the Gulf Coast, environmentally-oriented programs are welcomed only after needs considered more basic are looked after. This means that uptake of such a program is likely to be greater in areas with greater environmental awareness.^x

Program evaluation methods

A program such as this can be measured by

- The value of sustainable seafood market (a measure used by the Marine Stewardship Council)
- Public awareness surveys (a method used by the Monterey Bay Aquarium Seafood Watch program)
- Change in fishing practices leading to a measurable decrease in bycatch (a method used by an increasing number of fishery management bodies)

STEWARDSHIP OF THE BIOPHYSICAL ENVIRONMENT

Considering all stakeholders in Gulf Coast fisheries, the following measures would improve stewardship on many sides.

- *Regional Fishery Management Councils follow recommendations of Science and Statistical Committees.* In reauthorizing the Magnuson-Stevens Act, the US Congress needs to include the change recommended by Senators Inouye (D-HI) and Stevens (R-AK) and others to obligate Regional Fishery Management Councils to follow the recommendations of their Scientific and Statistical Committees. Without this requirement, some of the Councils are doing less than what is necessary to protect fishermen's livelihoods. Once the Act is passed (as seems likely as of this writing), it is imperative that annual budgets support this and other requirements of the Act.
- *Recognize and value fishermen's knowledge* and integrate that with technical knowledge from other sources.^{xi}
- *Include community leaders* as well as commercial fishermen, biologists and government in fishery advisory bodies. Stewardship of the planet increased markedly once Non-Governmental Organizations were brought into the consultative process on issues such as climate change; stewardship of the marine environment could benefit similarly.
- *Decrease use of harvesting methods that destroy habitat and storm barriers* – e.g., trawling for shrimp; destroying wetlands to create shrimp or fish farms.
- *Build on local traditional practices* rather than imposing regulations that don't account for local culture.^{xii} For many in the Gulf Coast fishing industry, fishing is a manifestation of their culture as well as a livelihood. Education programs for those in the industry can draw on the tradition of stewardship within various cultures (African American, Cajun, Chinese, Filipino, Native American, Slavonian, Vietnamese) to encourage stewardship in the marine environment.

Case Study: Projeto Peixes, Pessoas e Aguas

Projeto Peixes, Pessoas e Aguas is a project funded by the Canadian International Development Agency. In the project, 55 Brazilian and Canadian partners work to create and implement a model for sustainable socio-environmental river management.

The program promotes sustainable livelihoods for members the fishing community, and sustainability in the fishery through improved stock assessment and management practices.

The project is focused on the São Francisco River basin and is centered around the town of Três Marias, in the state of Minas Gerais.

The main Brazilian partners are the University of São Carlos and the Federation of Artisanal Fishermen of Minas Gerais.

Success factors

- Focus on communication has led to greater trust and mutual respect among key representatives (government agencies, fishing unions, industry, academia, local public)^{xiii}
- Consultative processes in policy development means that governmental and managerial policies reflect fishermen's knowledge and concerns

Applicability

One outcome of Projeto Peixes, Pessoas e Aguas is to increase resilience of the fishing communities, so they are better able to adapt to changing situations. This is an obvious need in the Gulf Coast region. While the physical and socioeconomic environment of Minas Gerais differs from that of the Gulf Coast, the human interaction methods are applicable.

Program evaluation methods

- Measure resilience by identifying residents' options, i.e. alternative forms of employment; alternative species available to fishermen.
- Survey participants and authorities before, during and after a project, to measure attitudes.
- Track behavior changes; increased stewardship is evident in participants' care of the environment.

ECONOMIC JUSTICE

As the old saying goes, "If you want peace, work for justice."^{xiv}

In reconstruction, we need to support the infrastructure that supports the fishing industry. Further, we need to create or strengthen institutions that will support the fishermen themselves, building capacity in community services for people in the industry and their families. These services could include health care, education, assistance with bureaucratic issues and financial support for micro-enterprises.

We all need to be active citizens who question pork barrel politics and our traditional horse-trading political environment. Our tax money must go to projects that benefit the neediest areas and people first. In the US, this will not happen until we citizens get our congressional representatives to critically and publicly analyze their colleagues' projects.

We can improve economic justice if we:

- *Ensure that fishery management legislation benefits both fishermen and the marine environment.* Amendment 13 of the Snapper-Grouper Fishery Management Plan will reduce red snapper bycatch due to shrimp trawls and help decrease overcapitalization in the shrimp industry, thereby supporting the shrimpers.^{xv} The Byrd Amendment, in contrast, has been shown to favor large commercial shrimpers over smaller businesses while encouraging retaliatory trade sanctions that hurt all of the US.^{xvi}
- *Support fishery regulations that improve safety at sea for the fishermen without incurring undue costs for those fishermen.*^{xvii}
- *View disaster "victims" as people with capacity and knowledge to participate in rebuilding.*^{xviii} Practical Action's post-tsunami rebuilding programs in Sri Lanka involve the

fishermen and fishing community, assisting them in identifying their priorities and making choices, rather than imposing decisions on them.

- *Award contracts locally.* While it might not make sense to delay repairs until devastated local businesses get up and running, awarding contracts locally whenever possible will serve to strengthen the local economy and community.
- *Provide community support and training* to ease the transition from fishing to other livelihoods for fishermen who choose to change.^{xix, xx}
- *Support boat buyback programs that take into account the full economic and emotional impact of the buyback.* This will reduce effort in overcapitalized fisheries while providing fair compensation to fishermen and their families and communities.
- *Gather ground-truth information.* Start at the ground level and understand what is important to the fishing community. This helps set responsive & scientifically accurate policy for managing natural resources.^{xxi}
- *Employ rigorous economic standards.* Rather than accepting “known” features of a fishery community, verify and validate the information on which we make decisions. This will decrease the likelihood of doing harm for all the right reasons.
- A simple Input/Output table depicting money flows through the region would help to identify who spends money, and what it is spent on, and how much of the money spent in the region flows out of the region and how much generates additional local business. This could then be used to predict where additional expenditures would have the greatest local effect.

Case Study: Boat Repair and Replacement, Practical Action

Practical Action’s Boat Repair and Replacement program in Sri Lanka supports fishing community sustainability by drawing on current skills and knowledge and building capacity in the community.

Success factors

- Review existing information
- Watch and Learn: observe local practices and behaviors before acting
- Invest significant time getting to know the local views of the problem before working with participants to help them identify solutions

Applicability

After the Indian Ocean tsunami and after the Gulf Coast hurricanes, the affected areas were inundated with donations made with the best of intentions. In retrospect, in both cases, much of the relief was misdirected, meaning that money was spent where it wasn’t needed, and needed where it wasn’t spent. Practical Action’s focus on selecting appropriate beneficiaries and asking the beneficiaries what they need are applicable in any disaster recovery situation.

Program evaluation methods

- Measure improvements in capacity relevant to a project’s stated goals. For example, in a boat building project, one of the goals might be that each fisherman has the knowledge and skill to maintain and upgrade his own boat.
- Survey participants to determine whether they perceive the outcome of the program as economically just.

UNDERSTANDING AND COMMUNICATION AMONG STAKEHOLDERS

The conflict resolution technique of Joint Fact Finding has been shown to improve communication among stakeholders in multiple disputes, including international disagreements and long-standing civil wars.^{xxii} While fishery management issues may be on a smaller scale, they are no less heartfelt, and their resolution deserves every effort we can offer.

As an added benefit, Joint Fact Finding results in plans that include contingencies. This means that if incremental changes prove misguided, or evidence changes what we've taken as factual, we are not headed irreversibly down the wrong road.

Communication and understanding will be strengthened by:

- *Co-management of natural resources*, sharing power and responsibilities among stakeholders.^{xxiii}
- *Grass roots involvement* in planning and managing, as well as a joint understanding of the rules of engagement. This increases buy-in from fishery stakeholders, thereby easing management of the fishery.^{xxiv}
- *Holding workshops* with stakeholders to help them understand and adapt the FAO's Code of Conduct for Responsible Fisheries, interpreting it in a local context for themselves. Provide training sessions for members of the fishing industry by local fishermen for local fishermen.^{xxv}
- *Providing translations* and translators where necessary to ensure clear communication among stakeholders. These would include: scientific language to (and from) laypersons' language as well as English to (and from) other languages and dialects spoken by fisheries stakeholders.

Case Study: Joint Fact Finding in Fishery Management

Joint Fact Finding builds community sustainability by strengthening bonds among parties to an agreement, thereby increasing the longevity and robustness of that agreement.

Success factors

- Bring all parties in on the ground floor
- Involve stakeholders consistently throughout program development and implementation
- Ongoing evaluation

Applicability

Joint Fact Finding is an appropriate use of dispute resolution where conflict involves any or all of these factors:

- A lack of factual knowledge on the part of one or more stakeholders
- Disagreement about what the facts are
- A history of animosity, misunderstanding or miscommunication among parties

These certainly describe fishery management in the past half century; as such, Joint Fact Finding would be applicable to fishery management in the Gulf Coast region.

Program evaluation methods

- Survey all participants' attitudes upon program development
- Survey on an ongoing basis

SUCCESS FACTORS

Compiling the success factors of the programs cited, we find many commonalities, listed here:

- Inclusion
 - ♦ Bring all parties in on the ground floor
 - ♦ Make use of and build local talent and industries
 - ♦ Solicit and use input from
 - Fishermen and Fishing Community
 - Government, Academics, NGOs
- Communication
 - ♦ Involve stakeholders consistently throughout program development
 - ♦ Create and maintain public interest

PROGRAM EVALUATION

In order to evaluate a program, and prove that it is succeeding, we need to set SMART (Specific, Measurable, Attainable, Realistic and Time-based) goals, measure them frequently, and feed what we learn back into the program in a process of continuous improvement. In the evaluation, the concerns of vulnerable human societies and natural ecosystems need to be weighted accordingly, so these concerns remain prominent.

Accurate evaluation requires goals that can be observed and measured. In compiling those from the programs cited, we find these sample measurements:

- Value of sustainable seafood market (MSC)
- Changes in Input / Output of region
- Surveys: public awareness, fishery stakeholders
- Change in fishing practices

These aspects of program evaluation will benefit participants, evaluators and the public:

- Explicitly state goals and timelines (e.g. 200 fishermen trained and certified within 6 months; 10% drop in local income leaving the region within 5 years)
- Evaluate the program on an ongoing basis. This enables program implementers to correct the course en route and further offers an opportunity to review progress and encourage participants.
- Communicate evaluation results to participants and public to increase awareness and help engender political will to address issues of concern.

SUCCESSFUL PROGRAMS

Successful rebuilding programs will include:

- A wide interpretation of what constitutes a “stakeholder,” and inclusion of stakeholders at every stage.
- Measurable goals, with ongoing evaluation thereof
- Frequent public communication stating issues and progress in clear terms

ENDNOTES

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- ^{xiii} Personal Communication, implementers of the Projeto Peixes, Pessoas e Aguas
- ^{xiv} Widely attributed to Pope Paul VI (1963 to 1978).
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- ^{xxiv} See note xvii.
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