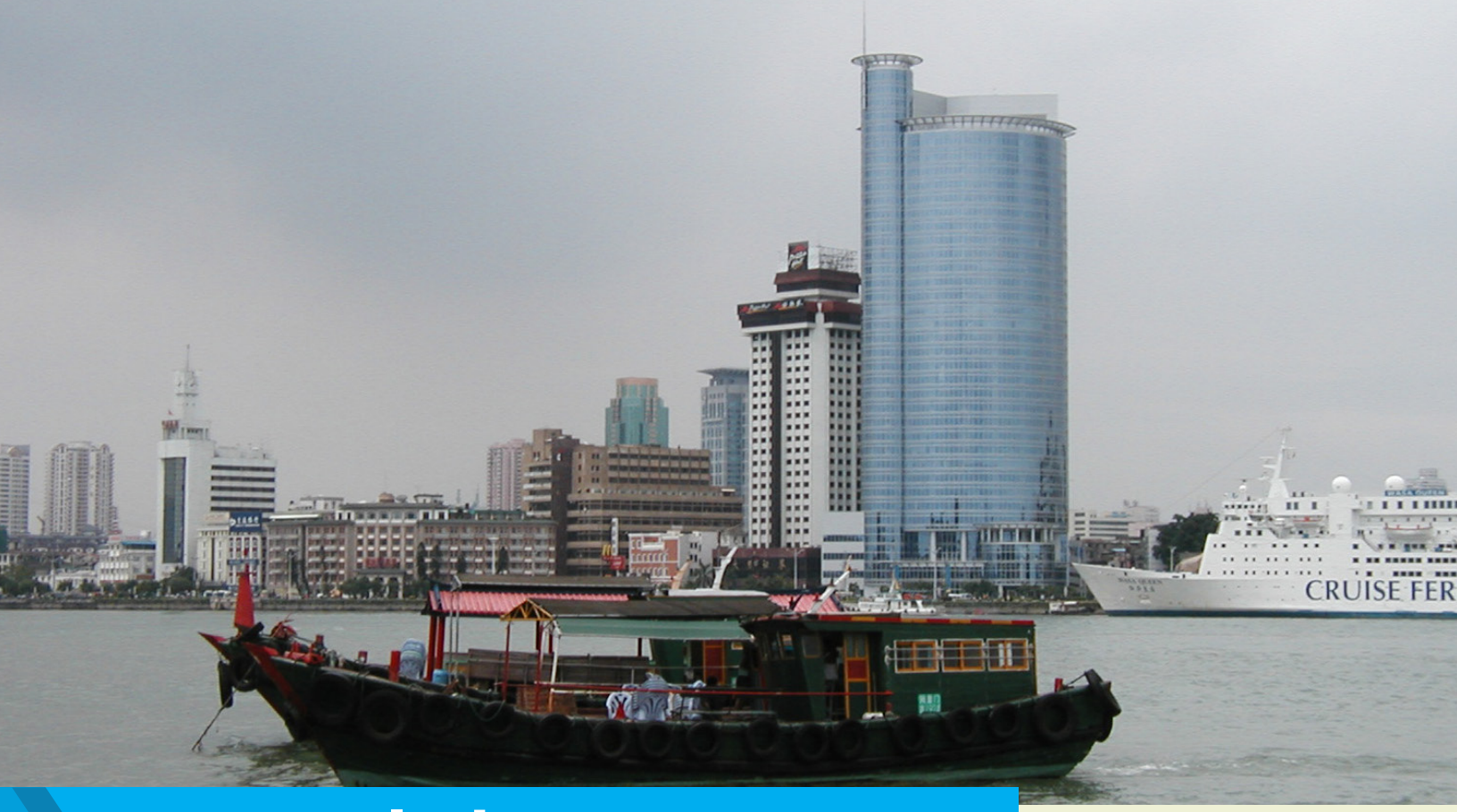

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Safeguarding the Vulnerable Communities of Xiamen's Western Seas Areas

- In practice, the cost bearers and beneficiaries of a policy or program belong to different sectors of the population. In the process of policy development, special attention needs to be paid to those sectors (subpopulations) that experience net costs or other negative impacts compared to just those who experience net benefits or positive impacts.
- Access to an impartial and fair compensation scheme for losses and damages incurred by vulnerable households and communities is an essential aspect of coastal development projects.
- A lead group with high authority and coordination capacity is imperative in the design of a compensation scheme, in that the scheme involves many issues such as land, finance, environment, tax, employment, etc., and needs the cooperation and collaboration of multiple governmental agencies and stakeholders.

WORLD BANK GROUP
PEMSEA

Context

The ICM Program and Its Benefits and Costs

According to Xiamen's Marine Function Zoning Scheme (MFZ) (1997), the dominant functions of the Western Sea Areas (WSA) are port and transportation, while tourism and the protection of endangered species are included as secondary functions. However, at the time most of the sea areas were densely covered by floating cages and oyster rafts, which did not comply with the specified MFZ functions. In order to implement the MFZ, Xiamen City initiated, as a component of its ICM program in 2002, the Integrated Improvement and Management of the Western Sea Areas Program (IIMWSAP).

The implementation of the IIMWSAP was designed to provide more space and resources for the development of port and transportation, tourism and real estate. Obviously, the investors and employees of the aforementioned industries became the beneficiaries of the Program. Their net benefit was RMB 2.57 billion (approximately US$ 404.2 million). All the citizens of Xiamen became the beneficiaries of the environmental improvements as well.

On the other hand, mariculture farmers in the Western Sea Areas were the most affected. They bore the social and economic costs of the Program, including the compliance cost in terms of the loss of aquaculture facilities and juvenile fish, loss of income from mariculture practices, and the high social costs resulting from their unemployment.

This case study provides a concrete example of protecting the interests of a vulnerable community while developing and implementing the IIMWSAP.

PROJECT SUMMARY

- Western Sea Areas (WSA), Xiamen, PR China
- Sea Area: 70 km^2
- Investment 230 million (approximately US$ 36.2 million)
- Area of removing aquaculture: 20000 Mu (1,333 ha)
- Key Projects of the Program:
  - Maluan Bay (hydrological condition and water quality improvement, and tidal influx increase)
  - Mud flat around Western Sea Areas (coastal ecosystem restoration)
  - Shoreline around Western Sea Areas
  - Water quality of Western Sea Areas
  - Relocation of mariculture practices
- Mariculture Farmers' Compensation Scheme Components:
  - Cash Subsidy
  - Policy of support to rural industries
  - Policy on employment
  - Increase in minimum living standard

Safeguarding the Vulnerable Communities of the Western Sea Areas

1. Study the distribution effects and conduct an equity assessment

While the benefit-cost analysis (BCA) (table 1) shows that implementation of the IIMWSAP improves the welfare of society in general, it must be noted that BCA gains and losses are weighed equally regardless of to whom they accrue. In practice, cost bearers and beneficiaries of a policy or program belong to different sectors of the population. In the process of policy and program development, more attention must be paid to those sectors (subpopulations) that experience net costs or other negative impacts compared to just those who experience net benefits or positive impacts.

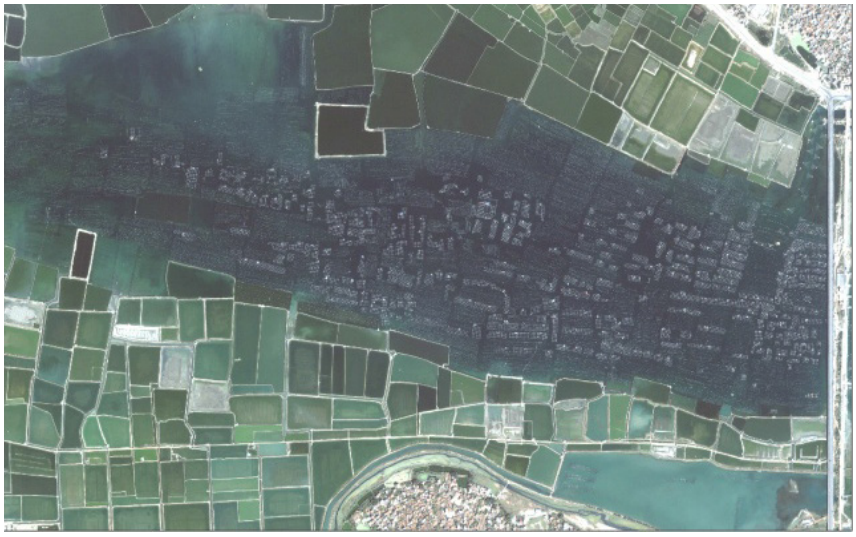


Figure 1. Before (aerial view): Floating cages and oyster rafts occupy a vast area of the Western Seas Area.

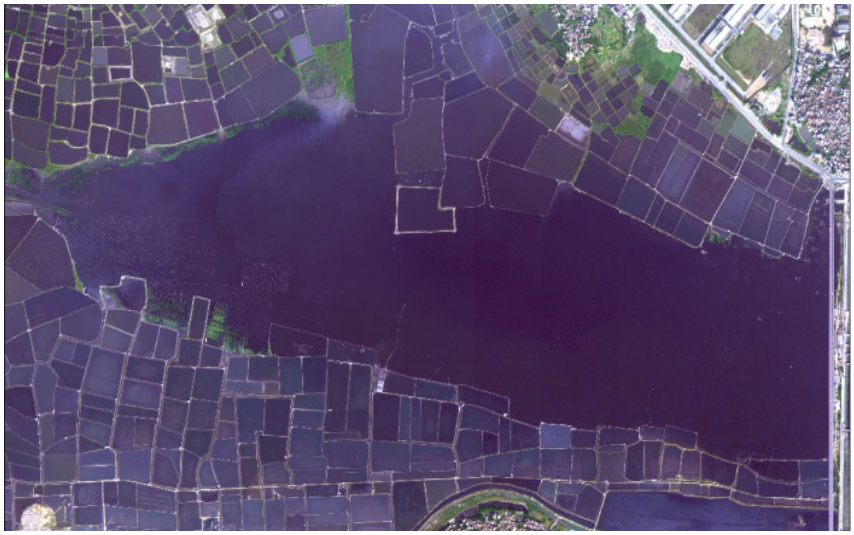
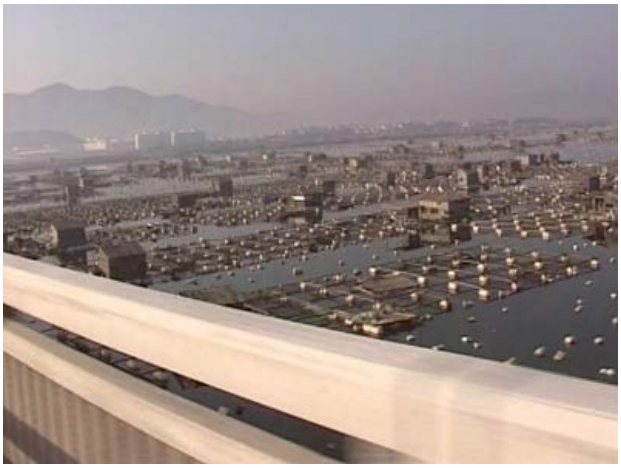


Figure 2. After (aerial view): More space and resources for the development of port and transportation, tourism and real estate after the implementation of the IIMWSAP.

Western Sea of Xiamen before and after the zoning activities.



Before

After

Table 1. Benefits and costs of IIMWSP (in RMB million).

	Discount rate = 2%	Discount rate = 4.5%	Discount rate = 9%
Benefits			
Economic sectors			
Port and shipping	773.90	572.55	348.44
Tourism	1,872.89	1,388.24	848.86
Real estate	8,245.01	6,630.17	4,569.72
Sub-total	10,891.80	8,590.96	5,767.01
Environmental sectors			
Increased carrying capacity	218.96	161.50	97.63
Amenity value	1,182.60	880.32	542.60
Scenery value	1,916.31	1,502.40	1,023.68
Habitat	1,532.37	1,130.30	683.29
Increased property value	2,426.23	1,930.12	1,354.49
Decreased external cost	30.96	22.61	13.37
Sub-total	7,307.43	5,627.25	3,715.06
Total	18,199.22	14,218.20	9,482.07
Cost			
Cost of policy	21.21	17.71	13.56
Engineering cost	6,892.15	6,019.86	4,771.71
Compliance cost	1,983.32	1,530.26	1,007.99
Social costs	558.73	444.75	312.48
Total	9,455.41	8,012.58	6,105.74
Net benefits	8,743.81	6,205.62	3,376.33
BCR	1.92	1.77	1.55

Data source: ESRC (2005).

Table 2 lists the benefits and costs of each sector (subpopulation) affected by the IIMWSAP. In this program, benefits and costs to four categories were analyzed: business, farmers, government and the general population.

Table 2. Distribution of benefits and costs of IIMWSP.

	Business	Farmers	Government	All people
Benefits				
Economic benefits	8,590.96			
Environmental benefits				5,627.25
Cost				
Cost of policy			17.71	
Engineering cost	6,019.86			
Compliance cost		1,530.26		
Social costs		443.31	1.44	
Net benefits	2,571.10	-1,973.57	-19.15	5,627.25

Discount rate = 4.5%
Data source: Personal calculation according to ESRC (2005).

2. Identify the vulnerable stakeholders

One of the program's projects, the relocation of mariculture practices, directly affected the farmers whose livelihood depended on the said practice. The implementation of the IIMWSAP resulted in the loss of income of the fish farmers amounting to RMB 132 million per year (US$ 20.8 million). Its costs to the mariculture farmers reached RMB 1.97 billion (US$ 31 million) accounting for about 25% of the total cost of the Program. Mariculture farmers would be most affected by the Program if a well-designed compensation scheme was not implemented.

3. Develop compensation schemes to safeguard the vulnerable communities

In order to safeguard the interests of these aquaculture farmers and to ensure no net loss of the welfare to this vulnerable group, the Xiamen city government developed a set of compensation schemes to deal with the equity effect of the Program.

a. Establish a leading group with high authority to make decisions

A Lead Group for the Program was set up to coordinate key actions. The Executive Deputy Mayor was appointed as the Director of the Program, assisted by two deputy mayors in charge of marine affairs and planning while a deputy director of Xiamen People's Congress and a vice chairman of Xiamen Political Consultative Committee served as deputy directors of the lead group. The organizational structure ensured that the Lead Group had a high capacity for coordination and was capable of making appropriate decisions on all aspects of the program including the related compensation scheme.

The impacted districts, Xinglin, Jimei, Huli, and Haicang, also established corresponding lead groups whose organizational structure was similar to that of the city level lead group with the head of each district playing the leadership role.

b. Design an equitable and transparent compensation scheme based on the outcomes of field surveys to ensure adequate consultation

The working teams went to every affected village and visited every affected farmer to explain and promote the objectives of the program so as to secure understanding and support of the affected fish farmers. The members of the working teams stayed with the fish farmers for one year and surveyed the cultured species, areas, revenues, and costs of the mariculture practices in different seasons so as to more accurately assess the loss of mariculture practices resulting from the implementation of the program. The draft compensation scheme was then developed based on the results of the investigation. Although there were no outright representatives of the fish farmers on the working teams, the draft compensation scheme was circulated to the community, calling for opinions of the stakeholders through public hearings and other roundtable meetings. Transparency of process was ensured, and a special telephone hotline was made available to receive public complaints.

It must be noted that the development process of the compensation scheme was a dynamic one. The government took many measures to mitigate losses including encouraging the purchase of farmed fish by governmental officials and citizens, tax preferences for those firms buying the fish from the Western Seas, disseminating information, and expanding markets, etc. The compensation scheme was finalized after close consultation with the concerned stakeholders and due consideration of the vulnerable communities.

Results

The compensation scheme for the fish farmers was implemented to include the following components:

1. **Cash subsidy.** The compensation standard was the sum of losses from aquaculture facilities, juvenile fish disposal, and two years profits. In total the cash compensation reached RMB 211.54 million (US$33.3 million). The cost of the compensation was shared by Xiamen City and respective district governments (i.e., Xinglin, Jimei, Huli, and Haicang) according to the ratio 7:3 (i.e., the city level shouldered 70% of the compensation expenditure, and the rest was shouldered by the districts).

2. **Policy of support to rural industries.** The program facilitated the restructuring of local industries in the West Sea Areas. The local government developed a set of policies and incentives to encourage and support the industrialization of the rural area including tax exemption, land preference, and financial support for investments in projects by the impacted fish farmers. The city and district finance bureaus allocated RMB 15 million (US$ 2.4 million) budget, respectively, to establish a special fund for supporting the development of the rural economy for the displaced fish farmers. Also, each government agency was asked to provide technical support to the fish farmers' projects.

3. **Policy on employment.** Considering the low education level and low labor skills of the fish farmers, the government initiated free training programs to promote the farmers' competitive ability in the labor market and to facilitate access to alternative jobs and livelihoods. In addition, the government provided job opportunities for the fish farmers. For example, government-controlled job appointments, such as those related to sanitation and security, were prioritized for fish farmers at the age of 45 and above. The government also encouraged public or private companies to employ the impacted fish farmers, including cash subsidies.

4. **Minimum living standard.** Before 2002, the minimum living standard system adopted in Xiamen did not cover the fish farmers; thus, the Lead Group of IIMWSAP decided that all the affected families should be included in this system. The minimum living standard of the fish farmers became the same as the city's standard, comparatively higher than those in other rural areas. The required budget was covered by the city government. This policy ensured that the affected fish farmers would be able to meet basic living standards.

Lessons Learned

1. **It is very important and necessary to check the "distributional effects" of an ICM program and integrate this consideration into decision-making process.**

   Economic efficiency is not the sole criterion for developing good public policies. Equity considerations determine the moral and just legitimacy of a public policy.

2. **Compensating the vulnerable communities in an ICM program is an essential way to get the support of people and facilitate the implementation of the program.**

   Xiamen's story tells us that a lead group with high authority and coordination capacity is imperative in the design of a compensation scheme. The scheme involves many issues which require the cooperation and collaboration of multiple governmental agencies and stakeholders.

   Transparency, fairness, sufficient consultation and concerns over the interest of vulnerable group are the essential principles of development of compensation scheme.

   Promptly solving the reasonable claims of vulnerable groups is very important in order to defuse social complaints and smoothen the process of ICM program implementation.

   Cash compensation is an effective approach to directly reduce the losses of the concerned community, while enhancing financial capacity for alternative livelihoods or starting new businesses.

   Enhancing skills through employment training and providing job opportunities are also important elements of the ICM program in order to assist affected fish farmers transition to skilled workers in rural industries.

3. **Xiamen's experiences can be adapted to conditions in other coastal cities that are implementing the MFZ under the ICM framework.**

   It must be noted that not all the coastal cities have the same financial capability as Xiamen to compensate affected communities and householders in cash. In such cases, appropriate policy to accord land use preference and to enhance business opportunities may be considered. Innovative institutional arrangements to endow property rights for sea areas to fish farmers may be an effective approach to encourage them to invest in and benefit from the industries/enterprises.

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Keywords

benefits-cost-analysis, cost-benefit-analysis, distributional effects, equity assessment, Xiamen, Xiamen Western Seas Areas, IIMWSAP, Integrated Coastal Management, ICM, mariculture, compensation scheme, program implementation, lessons learned, good practices, replicable practices

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