Governing Marine and Coastal Environment in China: Building Local Government Capacity Through International Cooperation

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Over the past two decades, rapid economic growth has brought considerable wealth and development to China's eastern provinces, where the explosion of industrialization and urbanization has created severe environmental degradation along the country's 20,000-kilometer coastline. Damage to China's coasts is but one area of severe environmental degradation in China, for the quest for economic growth at any cost has had equally dramatic consequences on the quality of the air, land, and water throughout the country. The Chinese government has resorted to two channels—increased local autonomy and international assistance—to address the country's environmental degradation. Since the 1980s, the Chinese leadership has been turning to the international community for financial and technical assistance to supplement its environmental protection efforts. In China, as in other developing countries, international and bilateral organizations offering environmental protection assistance interact mainly with national-level governments and organizations. International involvement in community-level environmental initiatives has been dominated by nongovernmental organizations (NGOs). The middle-level agents—Chinese local governments, which ultimately implement all environmental policies—have largely been ignored by international organizations. This paper highlights the importance of local-level governance for China's environmental protection and explores why it is essential for international organizations to help increase the capacity of local governance of China's coastal and marine environment. Linking these more empowered local governments with international assistance could fundamentally change the way in which China deals with environmental challenges.

Beginning in the 1980s, the Chinese government adopted two key strategies to address the country's environmental degradation—devolving more power to local governments to implement new environmental laws and welcoming multilateral and bilateral assistance. The devolution of central government functions to local jurisdictions occurred partly in response to political pressures for local autonomy, but also due to the inability of the central government to meet diverse local demands for public services, including environmental protection. Chinese leaders also have turned to the international community to supplement the country's insufficient fiscal resources for environmental protection. In China, as in other developing countries, international and bilateral organizations offering environmental protection assistance interact mainly with central governments while local governments are largely excluded. We believe Chinese local governments should be targeted for international environmental assistance, especially in the complex area of coastal and marine conservation.

To support this argument, we first introduce the current state of China's coastal and marine environment, followed by a historical analysis of the regulatory and institutional framework of marine environmental protection. Secondly, we investigate why local governments were previously largely ignored in environmental protection efforts, and why it has now become important to involve China's local governments in coastal and marine environmental management. Thirdly, we present lessons and experiences from a Global Environment Facility (GEF) and UN Development Programme (UNDP) project in China that has considerable local-level involvement in project implementation. Finally, we discuss the implications of localizing transnational environmental problems for future coastal and marine protection efforts in China.

China's Degrading Coastal and Marine Environment

Since the 1970s, the explosion of industrialization and

urbanization has created severe environmental consequences along China's vast coastline. Old coastal cities have expanded rapidly and new cities, such as Shenzhen, have been built within the span of a decade. China's coastal areas support huge populations: the East China Sea coast and related river basins have a total population of 510 million people; Bohai Sea and its basins, 445 million; and South China Sea, 268 million.

The worst damage to China's coastal and marine environment has taken place during the past two decades. According to the 2002 *China Human Development Report* (SEI and UNDP, 2002), siltatation in the East China and Bohai seas has worsened due to increasing nutrient loads. Indicative of the worsening marine water quality, in 2002 red tides affected approximately 10,000 square kilometers (km^2) along China's coasts (SEI and UNDP, 2002). A mere year later, a total area of 15,000 km^2 was impacted by red tide incidents (SOA, 2002). These and other environmental stresses on China's coastal ecosystem stem from point sources (such as urban sewage), non-point sources (especially agriculture), offshore pollution sources, and unsustainable fishing practices:

Urban point source pollution. Municipal wastewater treatment rates in Chinese cities, even in wealthier coastal regions, are quite low. In past decades, large quantities of pollutants both from cities and industries have been directly discharged into the sea without much treatment. The Bohai, Yellow, and East China seas received 1.5 billion tons of industrial wastewater discharge from twelve large coastal cities in 1999 (COP, 2000). About a quarter of Bohai Sea is considered seriously polluted.

Non-point pollution sources. Agricultural runoff laced with fertilizers and pesticides finds its way to rivers and streams that run into the sea. Other non-point source pollution—from residential and commercial development, mining, forest cutting, and land clearing—adds to the burden. Inorganic nitrogen and phosphates are the most serious pollutants in China's coastal seas.

Offshore pollution sources. In addition to land-based sources of pollution, oil spills and other ship-based hazards are a major threat to the marine and coastal environment. Another major environmental danger is the introduction of alien aquatic species through ship ballast water. Alien species may become invasive, replacing native species and thus destroying the ecosystem balance. Even red-tide organisms have been transported in ballast water. The International Maritime Organization (IMO) estimates that 10 million tons of ballast water is transported globally each year.[1]

Unsustainable fishing. Driven by short-term economic incentives, individual fishers and large-scale fishing companies are overexploiting China's coastal fisheries. In the East China Sea, for example, the total number of Chinese vessels increased nearly eightfold between the 1960s and 1990s, while during the same period catch-per-unit figures declined threefold. Moreover, catches have shifted from high-value large fish to low-value small fish, and from demersal (bottom sea) and pelagic (open sea) predator fish to pelagic plankton-feeding fish, as well as from mature fish to immature fish (FAO, 2001). Most of the pelagic fisheries in the South China Sea are already exploited beyond carrying capacity. Apart from these excessive fishing efforts, some techniques used by small-scale fishers are straining China's coastal fisheries. For example, some fishers use cyanide to stun fish while others employ dynamite, collecting dead fish as they float to the surface.

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Regulatory and Institutional Framework of China's Marine Environmental Protection

After the establishment of the People's Republic of China in 1949, the country followed a Soviet socialist development model. Economic development and ideological control were the central leadership's main priorities. Natural resources were exploited and China's landscape was changed to help fuel the country's development. Using the slogan "conquer nature and change nature" Mao's directives sparked massive dam building, land reclamation, deforestation, and the construction of irrigated agriculture in deserts (Shapiro, 2001). Coastal areas were not immune to this exploitation and with few environmental considerations reclamation of land from the sea was encouraged to feed the growing population.

Not until the early 1970s did the Chinese leadership

began to acknowledge the magnitude of the country's environmental crisis. The decades of destructive development campaigns had taken their toll on China's environment and posed threats to development. The forest and agricultural devastation brought about by the Great Leap Forward (*da yuejing*) movement created in the early 1960s the biggest famine ever in human history (Shapiro, 2001). Mao Zedong's policy to encourage births led to the near doubling of population in two decades—830 million people by 1993 (Smil, 1993)—adding terrific pressure on natural resources and land. The Chinese leadership's environmental awareness also was raised by a delegation that participated in the UN Conference on the Human Environment (UNCHE) held in Stockholm in 1972. Shortly after the conference, the Chinese central government introduced a population control policy, created a national environmental protection agency, and began to promulgate national environmental laws. China's continued participation in international environmental agreements and dialogues have helped push Chinese policymakers to build regulatory and institutional frameworks for environmental protection, including marine environment protection.

Regulatory Framework of Marine Environment Protection

In 1973, the State Council held the first national conference on environmental protection, resulting in the adoption of Several Rules on Protecting and Improving the Environment. The State Council began building on this priority-setting draft legislation by promulgating more detailed laws for specific environmental problems, such as the 1974 Provisional Regulations on the Prevention of Pollution of Coastal Waters (Palmer, 1998). After the beginning of economic reforms in 1980, the Chinese leadership began to create a comprehensive system of laws and institutions to protect the environment.[2]

The 1982 Chinese Constitution laid out for the first time the basic principle that the state was responsible for protecting the environment.[3] Marine protection received high-level prioritization in China's 1989 Environment Protection Law, which stated, "the State Council and the people's governments at various levels in coastal areas shall provide better protection for the marine environment" (Article 21). It was not until a decade later, however, that a more stringent Marine Environmental Protection Law was passed to replace the more general 1982 law. This marine law came into force on 1 April 2000 and contains many new provisions that, if implemented, could significantly improve coastal quality in China (*China's Environment Yearbook*, 2001). In addition to encouraging strong leadership and marine protection projects, the new marine law stipulates:

- Land-based pollution treatment will be an essential part of marine environmental protection;
- Ecological protection will be a new priority, which means environmental agencies at all levels should strengthen integrated coastal management (ICM) and actively take measures to protect mangroves, coral reefs, and coastal wetlands;
- The planning and implementation of the Bohai Action Plan will be accelerated in order to become a model for comprehensive marine environmental protection in China;
- Comprehensive coastal management will be carried out by following coastal area environmental function zoning management measures; and,
- Better coordination and cooperation between agencies is crucial to implement and monitor integrated coastal management and protection efforts.

Other laws that focus on specific marine issues include the Prevention and Control of Water Pollution Law (1996), Water and Soil Conservation Law (1991), and the Fisheries Law (1986). Some of China's major regulations on marine environment include:

- Provisional Regulations on Environment Control for Economic Zones Open to Foreigners (1986);
- Regulations of the PRC on the Control over Dumping Wastes into Sea Waters (1985); and,
- Regulations of the PRC on the Control over Prevention of Pollution by Vessels in Sea Waters (1983).

International Marine Agreements

In addition to domestic legislation, China has actively participated in international cooperation on marine environment protection. China ratified: (1) International Convention for the Prevention of Pollution from Ships, 1973, As Modified by the Protocol of 1978 Relating Thereto (MARPOL 1973/1978) in 1983; (2) Convention on the Prevention of Marine Pollution of Wastes and Other Matter in 1985; and (3) UN Convention on Law of the Sea in 1996. These three conventions have assigned ratifying countries specific obligations to control marine pollution from different sources. Additionally, after somewhat low-key participation in the 1972 UN conference in Stockholm, China has more actively participated in subsequent UN environmental summits

and forums. Following the model of the global Agenda 21 formulated at the 1992 Earth Summit in Rio de Janeiro, the State Council created the China Ocean Agenda 21 in 1996, which proposed a sustainable development strategy for China's marine areas. The China Ocean Agenda 21 is significant not only because it revealed high-level prioritization of marine protection, but also because it equally stressed development and the protection of the environment and encouraged all levels of government to devise a program for the coordinated development and protection of marine resources.

In general, China's legislation on marine environment has developed fast over the past two decades and created a relatively comprehensive legal framework for marine environment protection. The quality of coastal and marine areas has, however, continued to degrade, due to the lack of implementation of marine protection laws and regulations.

Central Government Institutions for Marine Environment Protection

The institutional arrangements for marine environment protection in China consist of a complex array of agencies and organizations. The main institutions in the central government that cover marine protection issues include the State Commission on Environmental and Natural Resources Protection and the State Council Committee for Environmental Protection. These two central entities are responsible for the general environmental policymaking, legislation, national plans, as well as supervision and coordination of the provincial activities in environmental protection. Four other central institutions have been given specific roles and responsibilities to protect marine environmental quality under the 1999 Marine Environmental Protection Law.

State Environmental Protection Administration (SEPA). SEPA is in charge of the overall guidance, coordination and supervision of the country's marine environment protection, and specifically takes responsibility for the prevention of marine pollution from land-based sources and coastal construction projects.

State Oceanic Administration (SOA). SOA is responsible for monitoring and managing the marine environment, organizing marine environment surveys, and conducting scientific research. It also takes responsibility for the prevention and control of pollution from offshore construction projects and marine dumping.

State Harbor Superintendence Administration (SHSA). SHSA is responsible for the supervision and management of pollution from non-fishing and non-military vessels in its jurisdictional harbors. It is obliged to investigate pollution incidents.

State Fishery Administration (SFA). SFA is responsible for the supervision and management of pollution from fishing vessels outside of harbors, and the protection of ecosystems in fishing areas.

People's Liberation Army (PLA). The PLA's environmental protection departments are responsible for the supervision and management of pollution and related incidents involving military vessels.

While these central institutions directly report to the State Council or their related ministries, none of these institutions has lead authority over marine environment issues. There is no integrated planning that addresses interactions among these institutions or their lower level agencies. Therefore, various conflicts over coastal and marine use exist among agencies and organizations engaged in port construction, mariculture, land reclamation, maintenance of scenic tourism resources, and marine environmental protection—each institution acts on their sectoral interests rather than national interests. Thus, coordination between these environmental, marine, and military institutions tends to be unsystematic and based on personal capacity of their leaders.[4] The division of marine protection responsibilities among these institutions is often ambiguous and overlapping (especially between SEPA and SOA), which means the marine environment governing system has remained largely fragmented and even competitive. The internal competition and poor coordination among these institutions prevents their voices from being integrated into central policymaking on industrial, agricultural, and urban development.

When a particularly serious marine problem arises, it is usually handled through ad hoc discussions between government agencies. In these situations, Chinese policymakers sometimes craft solutions more on political rather than environmental considerations. To appease competing agencies the central government has to consider "equal distribution" of funding, sometimes even ignoring the capacity and advantages of individual institutions.

The Role of Local Governments in Marine Environmental Protection

Despite China's fast development of legal and institutional frameworks for marine environmental protection, the country's marine environment continues to degrade. The cause of this degradation is attributed to:

1) The overwhelming speed of industrialization and urbanization;
2) China's sectoral approach to addressing the marine environment;
3) A governing system in which economic agencies dominant over environmental protection agencies;
4) Insufficient state capacity at the central level to coordinate an integrated marine environment agenda; and,
5) An absence of incentives at the local level to implement environmental and natural resource protection policies.

In the first issue of the *China Environment Series* Kenneth Lieberthal aptly sums up the dismal reality of the last point, stating that within China "[m]uch of the environmental energy generated at the national level dissipates as it diffuses through the multi-layered state structure, producing outcomes that have little concrete effect" (1997, p.3). While the central government has devolved considerable authority to local levels and does allow some policies to be "adjusted to local conditions" (*shihe dangdi qingkuang*), in the environmental sphere some emissions standards, polluter fine rates, and other regulations are issued as a one-size-fits-all, which creates local opposition.[5] The central-local struggles in China over environmental policy implementation are complex and must be seen in the larger context of economic and political reforms that began in 1979.

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State Capacity and Decentralization

The deteriorating fiscal and budgetary problems caused in part by economic reforms created challenges for the Chinese government to meet increasing demand for public services. In the period between 1978 and 1996, China's real gross domestic product (GDP) increased by nearly 10 percent annually. The ratio of government revenue to GDP, however, fell from almost 31 percent to less than 11 percent (Wang, 1997). The central government's share of total government revenue fell from two-thirds at the beginning of the reform to one-third in 1993, which posed a particularly serious challenge. In real terms, the GDP has grown more than five times and the total government revenues have doubled, but the central government revenue has remained almost constant since 1978 (Wang, 1997).

Economic, political, and social reforms have improved the livelihoods of many Chinese, but also created a variety of social problems. In the 1990s, more than two-thirds of the state-owned enterprises (SOEs) were unable to compete in the free market and were operating on deficit, requiring tremendous fiscal assistance from the central government (Holz, 2001). As indebted SOEs and mines increased layoffs and rural poor fled to cities, unemployment rates have climbed precipitously high and social protests are mounting. The central government faces pressures to create a social security system and affordable health care to replace the former cradle-to-grave work unit system. Facing these numerous demands from citizens, as well as troubles in dealing with mounting government corruption, it is not surprising the central leadership does not always prioritize environmental concerns. Marine environment protection, which is less imposing and obvious than polluted rivers and urban air pollution, is not even among the top environmental issues.

In order to relieve the central government from fiscal and political burdens and improve the ability of the government to effectively address emerging issues, the Chinese government has accelerated the economic and political decentralization reform that began in the late-1970s. The major objectives of devolving economic authority were to: (1) make localities fiscally self-sufficient, (2) relieve the central government's fiscal burden, and (3) provide incentives to local authorities to promote economic development.

The most important effort of the fiscal reform has been the division between central and local revenue collection systems. By the mid-1980s, provinces, municipalities, prefectures, counties and townships were subject to a bottom-up revenue-sharing system that required localities to submit only a portion of their revenues to the upper levels and then allowed them to

retain all, or at least most, of the remainder (Oi, 1992). The new tax system granted local governments relative financial autonomy and stimulated local tax collection. Increasing local government control over revenue has enabled the central government to push more regulatory burdens onto the local levels, which explains why parallel to the political and economic decentralization, local governments also have been granted more rights (and responsibilities) to address local land use, natural resource management, pollution control, and marine environment protection.

Local Governance of Environmental and Marine Protection

Decentralization has granted local governments more jurisdiction rights in handling local political and social problems, including environmental protection. In both the Environment Protection Law (1989)[6] and the newly revised Marine Environment Protection Law (1999)[7] there are specific articles regarding the local governments' responsibilities and rights to regulate marine environmental protection. These laws allow provincial, autonomous, and municipal governments (albeit with central agency oversight) to set local standards for environmental protection, including marine environmental protection. Coastal local governments at various levels also have been bound with obligations to protect coastal areas in the 1999 Marine Environment Protection Law, specifically to:

1) Identify marine protection goals and tasks and integrate marine environment protection into the government working plans (Article 9);
2) Select and establish marine ecological protection areas to protect marine living resources (Article 21);
3) Protect coastal facilities, forests, gardens, and grasslands to prevent coastal erosion and infusion of seawater (Article 27); and,
4) Strengthen the management and prevention of land-based pollutants into the rivers to the sea (Article 31).

Changing Local Incentive Structures: Linking International Communities with Local Governments

Since the economic growth rate is one of the most important indicators used to evaluate the performance of local officials, it is not surprising local governments have helped their enterprises circumvent environmental regulations (Economy, 1997). Local environmental protection bureaus (EPBs) possess the main authority to implement environmental laws and regulations and receive policy directives from SEPA. However, EPBs receive their revenue and report directly to local governments. This dependence on local governments has made EPBs hesitant to overly regulate area industries, for EPBs are in a position of "sanctioning their own 'almoner' [alms giver]" (Palmer, 1998, p.794).

On the surface it would appear local government incentives and the limited capacity of EPBs represent a near hopeless situation for effective implementation of environmental laws—in the marine protection sector, however, there exist opportunities for improvement. Admittedly, local governance of marine environmental protection is constrained by: (1) limited financing, (2) lack of technical and institutional capacity, and (3) difficulties in reconciling economic development and environmental protection. However, we contend in this area, China's local governments could surmount these constraints and play a far bigger role if the international community developed partnerships that helped build the technical, financial, and institutional capacity of local governance for marine environmental protection.

By cooperating directly with local governments, the international community and donor organizations could not only tackle marine environmental problems more effectively, but also could educate Chinese local government officials and change incentive structures to incorporate environmental protection into the local development strategies. These officials need to understand that maintaining sustainable fisheries is not only an environmental issue, but also an economic consideration.

An enhanced role for local governments is feasible. Decentralization has provided a political space for local governments to actively cooperate with the international community. Coastal economic development in the past two decades also has created a socioeconomic condition for better local governance of the environment. The decentralized tax reform has given the local governments some surplus finance, which could help coastal cities sustain international marine protection projects even after the withdrawal of international funding. Therefore, local coastal governments with jurisdictional rights, local financial autonomy, and better information than central government agencies, should play an important role in strengthening international projects to protect China's marine environment.

Involving Local Governments in International Cooperation for Environmental Protection

Since its Open Door policy was initiated in 1978, China's interactions with the international community have dramatically increased, particularly in the area of

Box 1. GEF International Waters Projects in China

1. Single Country Projects

Project Name	Agency	GEF Grant (million)
Preliminary Assessment to Identify the Requirement for Developing a National Implementation Plan in the People's Republic of China as a First Step to Implement the Stockholm Convention on Persistent Organic Pollutants (POPs)	UNIDO	$1.85
Hai River Basin Integrated Water Resources	World Bank	$16.35
Ship Waste Disposal	World Bank	$30
Biodiversity Management in the Coastal Area of China's South Sea	UNDP	$3.515

2. Regional and Global Projects with China Component

Project Name	Agency	GEF Grant (million)
Prevention and Management of Marine Pollution in the East Asian Seas	UNDP	$8.025
Reversing Degradation Trends in the South China Sea and Gulf of Thailand	UNEP	$16.749
Building Partnerships for the Environment Protection and Management of the East Asian Seas	UNDP	$16.224
Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem	UNDP	$14.744
Preparation of a Strategic Action Prgoramme and Transboundary Diagnostic Analysis for the Tumen River Area, its Coastal Regions and Related Northeast Asian Environs	UNDP	$5.199

Source: Global Environment Facility - http://www.gefweb.org

environmental cooperation (Economy, 1997). While over 50 international environmental NGOs are undertaking environmental projects throughout China building partnerships with state agencies, research centers, and community organizations, only a handful of NGOs are undertaking activities to strengthen local government's environmental protection capacity[8] and even fewer address marine issues.[9]

Although multilateral organizations (MLOs) have increased marine environmental aid to China since the early 1990s, these projects have largely ignored the role of local governments in dealing with environmental problems and depended on central government partners—who often do not possess as much knowledge on local environmental problems as do the local governments.

The need in China for building local environmental governance remains substantial and the potential contribution for environmental cooperation through projects financed and implemented by international funds and organizations is great. Some multilateral organizations have begun to address this need. Notably, the Global Environment Facility (GEF)—which alone has funded over $300 million in environmental projects in China—has been instrumental in promoting the participation of local governments though this marine environment protection initiative. (See Box 1).

GEF International Waters Projects in China

The GEF was created in 1991 to serve as a financial mechanism for the implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer. The mission of GEF has expanded to act as the financial mechanism for the global conventions on biological diversity, climate change, and persistent organic pollutants, as well as provide support for projects protecting international waters. The central mission of this unique financing institution is to assist developing countries and countries with economies in transition in funding environmental projects and programs to address the underlying causes of global environmental problems (GEF, 2002). GEF traditionally has implemented its projects through the United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), and the World Bank. Recently, new agencies are eligible for implementing GEF funded projects, including the Asian Development Bank.

Despite the lack of a global convention on international waters, GEF has become the largest single funding source for several global and regional conventions and agreements to protect international freshwater basins, marine, and coastal waters (Merla, 2002).[10] The GEF implementing agencies work with countries to identify ways of collaborating with their neighbors to reduce human-induced stress on the shared water body. The GEF acts as a catalyst to help each of the countries use all available technical, economic, financial, regulatory, and institutional measures to initiate sustainable management strategies for transboundary waters, which will ultimately help generate global environmental benefits (Uitto and Duda, 2002). From 1991 through 1999, GEF allocated a total of $360 million worldwide for international waters initiatives. One of GEF's largest international waters initiatives is in the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). China is a key country in this regional marine management initiative.

GEF's PEMSEA Initiative

The PEMSEA project aims to create partnerships at local, national, and regional levels through which the comparative strength of each sector is maximized for a more effective management of the coastal and marine environment (www.pemsea.org). PEMSEA, initiated in 1994, builds upon the successes of the 1993 GEF-funded project Prevention and Management of Marine Pollution in the East Asian Seas (1994-1998), which helped GEF learn lessons in practicing integrated coastal management (ICM) (Chua, 1998).[11] PEMSEA brings together twelve countries surrounding the East Asian seas in collaborative efforts to solve problems related to marine environmental degradation.[12] The objective of the project is to assist these riparian countries to collectively protect and manage their heavily stressed coastal and marine environments through intergovernmental and intersectoral partnerships. The project aims to enhance and complement national and international efforts by removing or lowering critical policy, investment, and capacity barriers that are having negative effects on the management of the coastal/marine environment in the region. Furthermore, the project applies environmental risk assessment and risk management processes to address transboundary environmental issues in sub-regional sea areas under stress.

PEMSEA includes a broad continuum of collaborators from international, through national, to local level organizations. The project's implementing and executing agencies, UNDP and IMO, provide links to global-level marine environment policymaking and also support capacity development at the national and local levels.[13] The uniqueness of the project is its utilization of demonstration projects at both the sub-regional and local levels to develop and test management mechanisms, such

as ICM, that may then be replicated elsewhere in the region (Ollila et al., 2000). The project has five objectives:

- Developing and implementing ICM demonstration sites;
- Creating demonstrations of risk assessment/risk management processes to improve the environmental management of a sub-regional sea area;
- Enhancing the ability of countries to ratify and implement international marine protection conventions;
- Promoting the development of sustainable financing mechanisms for marine pollution prevention and management programs; and,
- Establishing an environmental monitoring and information management network.

Particularly innovative within PEMSEA is the promotion of extensive partnerships between central governments, local governments, civil society, and the private sector. The project not only builds government capacity, but also provides extensive training to local citizens and representatives of the news media and civil society groups. Strengthening the role of the news media is key to build strong and broad-based constituencies for coastal and marine protection. The PEMSEA community component stems from the recognition that local communities play a key role in the use of coastal resources. Their actions can either contribute to the continued pollution and destruction of the coastal environments, or can provide the solutions to their protection and sustainable use.

PEMSEA in China

The PEMSEA project utilizes integrated coastal management (ICM) demonstration sites for developing systematic and comprehensive management of land and water resources. Moreover, these demonstration sites aim to function as centers for training and capacity development. One such demonstration site is in the port city of Xiamen, China where PEMSEA is assisting the local government in building its capacity to develop and implement ICM strategies for the effective prevention, control, and mitigation of marine pollution. The Xiamen demonstration site falls within the jurisdiction of six districts in Tongan county. Tongan has a population of 1.3 million people and a high gross domestic product of 50.1 billion RMB, making it one of the wealthiest counties in the region. Overall, Xiamen has experienced extraordinary economic growth (Li, 1999) as evidenced by annual GDP over 15 percent between 1995 and 2000.

In the early 1990s, economic openness in Xiamen created many thriving industries and extensive development of agriculture and fisheries, including mariculture. In recent years, coastal tourism has been gaining in importance. Xiamen also is home to a major international trade port. All of these economic activities place considerable burdens on the coastal and oceanic environment—including the reduction and deterioration of natural habitats and living resources, siltation and erosion, retreat of the shoreline, and blocking of navigation channels. Xiamen officials recognized these negative environmental consequences would create serious conflicts and ultimately threaten the city's future economic growth.

The established institutional structures and policies in China were not able to effectively deal with Xiamen's serious marine pollution and growing resource use conflicts. Weak institutional capacity, narrow sector-oriented policies, insufficient legal frameworks and law enforcement, as well as a generally low understanding of marine environmental issues were the core constraints the city needed to address. In order to more effectively deal with these marine problems, the National People's Congress granted environmental legislative rights to the city in 1994 which led the Xiamen's People's Congress to promulgate a set of laws and regulations related to marine resources development and environmental protection (Li, 1999).

The original GEF/UNDP/IMO regional marine project that became operational in the same year was designed to support these reforms. A path-breaking feature of PEMSEA was its designation of the Xiamen municipal government as the lead agency, with the Vice-Mayor chairing the newly established Executive Committee. The Executive Committee is an inter-sectoral coordinating body involving twenty government agencies, such as planning, finance, marine affairs, land use, environment, fisheries, port operations, and tourism.

The Chinese authorities, including SOA, acknowledge the important catalytic role played by PEMSEA and its predecessor project to strengthen coastal management (Li, 1999). Since their inception, the projects were supportive of strengthening ICM legislation in Xiamen and promoting the use of science in environmental management. (See Box 2). The work has empowered the local government to address coastal and marine environmental issues in a more comprehensive and cross-sectoral manner.

The PEMSEA project also has contributed to the "internationalization" of local governance through the creation of a regional network of local governments

Box 2. Legislation to Strengthn the Role of Local Governments in Coastal Management

Since its inception in 1993, PEMSEA has assisted the Xiamen municipal government in a series of local environmental lawmaking activities. The project's integrated coastal management legislative efforts have focused on: (1) cross-sector coordination in the coastal project review and permit process, (2) scientific decision-making, and (3) the use of market-based instruments. For example, collaboration between PEMSEA and its Xiamen partners led to the administrative rules in 1995 on the relocation of mariculture from the shipping area and eel larvae harvesting, which have helped mitigate conflicts between navigation and fisheries (Chua et al., 1999). In addition, PEMSEA sponsored the scientific studies on marine functional zonation, integrated environmental impact assessments, and sustainable financing mechanisms that helped the local government create the Regulations of Xiamen Municipality for Uses of the Sea Area (1997). The following table provides an overview of the PEMSEA project activities that assisted Xiamen's legislative building.

Year	Major PEMSEA Project Activites	Legal Instruments
1994	• Strengthening local government commitments • Public awareness campaigns	• Regulation for Environmental Protection
1995	• Integrated management committee/office established • Profile/environment management plan prepared • Marine laws reviewed and new legal instruments proposed	• Regulations for Managing the Resources of Sands, Rocks, and Soils • Regulations for the Management of Navigation • Municipal Ordinance for Egret Nature Reserve in Dayu Island • Administrative Rules on the Relocation of Aquaculture in the Marine Area for the Siting of Xiamen Shipyard • Administrative Rules for Strengthening the Management of Catching Marine Eel Larvee • Regulations for the Management of Water Resources
1996	• Yuan Dang Lagoon case study • Waste problems and management assessed • Aquaculture impact study • Integrated monitoring system established	• Municipal Ordinance for Managing Yuan Dang Lagoon Area • Municipal Ordinance for Urban Landscaping and Environmental Health • Administrative Rules for Aquaculture in Shallow Seas and Tidal Flats • Regulations for Marine Environment Protection
1997	• Integrated environmental impact assessment • Functional zoning scheme developed • Studies on sustainable financing mechanisms	• Regulations for the Uses of Sea Areas • Regulations for the Protection of Chinese White Dolphin • Regulations for the Management of Tourism • Government Notice on Implementation of Xiamen Marine Functional Zoning Scheme

Source: Chua, et al., 1999

implementing ICM in their own countries. At a March 2001 meeting in Seoul, local government units that had PEMSEA integrated coastal management demonstration sites formally created the Regional Network of Local Governments (RNLG). The goal of this network is to facilitate the sharing of information on implementing ICM programs. The RNLG provides participating members various benefits through (GEF/UNDP/IMO PEMSEA, 2002):

- Strengthening local governance;
- Increasing opportunities for environmental investments;
- Facilitating the implementation of local Agenda 21 and local implementation of international conventions;
- Increasing national support for sustainable coastal development;
- Facilitating regional cooperation in marine and coastal management; and,
- Facilitating partnership and collaboration with donors.

The Xiamen municipal government hosted the second RNLG annual meeting on 20-21 September 2002. The Mayor of Xiamen gave a speech at its opening ceremony and participants from local governments of ten East Asian countries presented their ICM experiences at the forum. The RNLG meeting provided an arena for the participating local governments to exchange good practices and lessons learned, and also to obtain information from the international participants.

Conclusions: Implications for China and the International Community

Despite progress made in the past decades in building regulatory and institutional frameworks for the protection of China's marine environment, the country's coastal and marine ecosystems have continued to degrade. While the root causes can be traced to the rapid expansion of economic activities, population, and urban centers, the lack of state capacity and the absence of local incentives to implement marine environment protection laws exacerbate the situation. The central government's capacity is limited due to both the poorly coordinated institutions and inadequate financial resources. Localizing environmental protection is probably one of the most effective ways to address coastal and marine environment problems in China. Therefore, building the capacity of the local governments and stimulating incentives to support environmental protection should be essential elements in future domestic coastal and marine management and protection policies. The international community would do well to continue to support this process through joint projects and funding.

The ability and willingness of local governments to engage the international community in marine and environmental protection vary greatly across the country. Generally, local governments in the southeast coastal areas have built up more capabilities and confidence in utilizing international sources of technical and financial cooperation than their western China counterparts. This is due to their longer experience with attracting international trade and investment. However, international assistance organizations have limited experience cooperating with local governments in China. Mobilizing this cooperation on a larger scale would thus demand a major effort of mutual learning. The PEMSEA case offers some important insights for future international marine and environmental initiatives with local governments in China.

The selection of the local partner, for instance, is important in determining the prospects of an environmental project and its chances of getting replicated on a larger scale. In the case of marine and coastal environmental cooperation, the selection of the partner should consider not only the degree of coastal ecosystem degradation but also the willingness of the local leadership to addressing this issue. Adequate co-financing (either in cash or in kind) from the local government is also a generally good indicator of the commitment and determination of the local government to actively participate in the efforts.

Certainly, it is not feasible for international organizations to involve all local governments due to the size of the country. The aim should, therefore, be to create specific sites where models and technologies can be tested and demonstrated. The successful demonstrations should then be disseminated widely, so as to promote their replication on a larger scale in China, and potentially beyond. As the funds available through international cooperation are limited, replication goals should be carried out by domestic and commercial financing.

China is still very much in transition both politically and economically, so it is not surprising the country lacks the norms and experience on how best to engage and strengthen local governments in environmental protection and management. The PEMSEA experience highlights the need to allow a certain amount of flexibility in the management of the projects at the local level. A certain degree of management flexibility, taking into account local considerations and the special political environment, will

help international partners find the most effective means of cooperation to benefit the environment and, ultimately, the people. Building local government marine protection capacity should be gradual, following the same strategy Deng Xiaoping used for the economic reforms—touching the stones to cross the river.

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Endnotes

[1] IMO's Marine Environment Protection Committee is currently preparing new regulations for ballast water management to prevent the transfer of potentially harmful aquatic organisms into non-native environments. A diplomatic conference will be organized during late 2003 to adopt the new measures.

[2] The legislative framework for environmental protection in China is comprised of five levels of laws and regulations: (1) the Constitution of the People's Republic of China 1982, revised in 1989; (2) laws promulgated by the Standing Committee of the National People's Congress (and the international conventions and agreements approved by the Standing Committee); (3) regulations, orders, decisions and other binding documents promulgated by the State Council and its subordinates; (4) regulations, decisions and orders of provinces, autonomous regions and municipalities; and (5) regulations of local governments at the county level and above.

[3] Article 26 of the Constitution of the People's Republic of China 1982 stipulates, "the state protects and improves the living environment and the ecological environment, prevents and controls pollution and other public hazards." It further reads "environmental protection is one of the functions and responsibilities of the state."

[4] Several of the arguments below are supported by interviews conducted in October 2002 with Chinese government officials who wish to remain anonymous. Some Chinese government officials noted that leaders in these main environmental sectors often could use their own "personal capacity" (personality, connections, and influence) to determine the conflicts and coordination among these sectors.

[5] For example, nationwide standards for pollution emission fines would be difficult to set, for rates high enough to gain compliance in the wealthier industries in the east would financially cripple businesses in the west.

[6] Article 16 of the 1989 Environment Protection Law stipulates the general principle for the local governments' obligations to protect the environment: "the local people's governments at various levels shall be responsible for the environmental quality of areas under their jurisdiction and take measures to improve environmental quality."

[7] In the 1989 Environment Protection Law, articles 9 and 10 stipulate that "the people's governments of provinces, autonomous regions and municipalities directly under the Central Government may establish their local standards for environment quality for items not specified in the national standards for environment quality…with regard to items already specified in the national standards, they may set local standards which are more stringent than the national standards." The 1999 Marine Environment Protection Law further specifies the local governments' rights to set up local marine environment standards in areas without national standards or higher than national ones (Article 9).

[8] Numbers on NGO activities and projects drawn from the *China Environment Series* (2002) Inventory on Environmental Projects in China. NGOs undertaking local government capacity building initiatives include: NRDC (local green building legislation in Chongqing), American Bar Association (environmental governance trainings in Shenyang, Wuhan, and Chifeng), Environmental Defense (setting up SO_2 emissions trading pilot projects in Benxi and Nantong), and WWF-China (numerous forest and natural resource management training projects with provincial governments).

[9] Pacific Environment is one of the few international NGOs undertaking a marine conservation project in southwest China (www.pacificenvironment.com). Some marine work with China is done by Southeast Asian Programme in Ocean Law, Policy and Management—a research nongovernmental institution to facilitate information and idea exchange related to current ocean law, policy and management in Southeast Asian and APEC regions (www.seapol.org).

[10] The two most significant international water agreements are: (1) Global Program of Action for the Protection of the Marine

Environment from Land-based Activities, and (2) Convention on the Law of Non-navigational Uses of International Watercourses.

[11] Since MPP-EAS is the pilot phase of PEMSEA, hereafter in this paper PEMSEA refers to both projects.

[12] Brunei, Darussalam, Cambodia, China, Indonesia, Japan, Republic of Korea, the Democratic People's Republic of Korea, Malaysia, the Philippines, Singapore, Thailand and Vietnam.

[13] UNDP considers PEMSEA to be an important vehicle for building national and local capacities in the East Asian region for the implementation of the Agenda 21 and the Millennium Development Goals (www.developmentgoals.org).