

Coastal Zone Management in the People's Republic of China: A Unique Approach?

By Maren Lau

China's 18,000-kilometer coastline encompasses a region of great economic importance to the country, accounting for about 56 percent of its GDP (Wang, 1992).¹ Swelling populations and an unbroken trend of urbanization throughout the east coast increasingly challenges the conservation of China's vast coastal zone. While the Chinese government has begun to recognize the crucial role the ocean's living and non-living resources play in China's energy and food security, balancing economic growth with the need to protect marine resources calls for a more sophisticated and better coordinated coastal management system than China currently employs.

Currently, China's coast is divided into twelve administrative units.² Such fragmentation creates many obstacles to establishing more coordinated management approaches such as integrated coastal zone management (ICZM), which aims to promote sustainable development of coastal areas by taking into account social and economic issues, as well as environmental protection. According to the World Coast Conference (National Institute for Coastal and Marine Management, 1993) and the United Nations (ESCAP, 1995), key criteria for successful implementation of ICZM are: (1) coordinated legislation, (2) efficient institutional organization, and (3) a high degree of public participation. While democratic countries can more easily fulfill these ICZM criteria, countries like China with a one-party state and partially reformed political system may lack the necessary transparency and public participation preconditions. Nonetheless, with modifications ICZM still could be implemented.

In the People's Republic of China, the slow government bureaucracy—a legacy of Communist political reality—and the continued reliance on relation-networks (*guanxi*) often stymie the creation of complex policy solutions like ICZM. One of the key reforms to help create more efficient policymaking in China has been the decentralization of political, administrative, and economic power over the past twenty years, which has stimulated economic growth and strengthened local governments. Central and local governments can be, as is discussed below, both obstacles and catalysts for successful ICZM in China, therefore it is crucial for the

Chinese leadership to harmonize top-down and bottom-up conservation and development initiatives to sustainably manage the country's coastal zones.

Central Government Institutions and Initiatives

Over the last decade, the Chinese government has made a significant effort in developing legislation for the coastal zone. Nonetheless, a Coastal Zone Management Act is not expected until 2005.³ In the meantime, the recent Sea Area Use Law (*Haiyu shiyong guanli fa*)⁴ creates an opportunity for more sophisticated coastal management in terms of functional zoning and sustainable financing.

The leading agency for ICZM in China is the Department of Sea Area Management situated within the State Oceanic Administration (SOA),⁵ which is an agency subordinate to the Ministry of Land and Natural Resources (MLNR). With more than 40 years of history, SOA's longevity indicates acceptance within the political hierarchy. Newly developed agencies often do not have a strong standing within the government and party hierarchy and lack the necessary *guanxi* to be taken seriously by the more powerful agencies. A good example of a new agency that had to struggle for acceptance—although it had support from the highest national level—is the National Environmental Protection Agency.⁶ It only slowly gained power after being restructured in 1998 as the State Environmental Protection Administration (SEPA) and given ministerial status directly under the State Council. Reflecting on SEPA's experience, it may have been a sensible for the Chinese government to put SOA inside an existing agency instead of introducing a new independent agency without history and *guanxi*, and therefore with a weak political standing.

In addition to examining SOA's political power within the government hierarchy, it is important to consider whether this agency's mandate and expertise can carry out ICZM to meet international standards. Most countries use ICZM to address multi-user conflicts of allocating resources or spatial disputes. Thus, the ICZM concept emphasizes the coastal zone as terrestrial with significant land-ocean interactions—encompassing a variety of coastal sectors such as agriculture, industry, fisheries, tourism, urban planning, construction, port, and trade activities.

In choosing SOA as a leading agency for ICZM, the Chinese government made an important decision towards emphasizing the ocean part of the coastal zone. The strong marine mandate of SOA means it does not have the authority to coordinate all affected sectors. In other words, while prioritizing coastal water issues through purely scientific and marine expertise (e.g., emphasizing pollution or economic considerations of marine resources) SOA may neglect coastal issues on the shore and limit the participation of environmental, economic, agricultural and other agencies. Such a narrow institutional set-up

(GEF) all provinces and municipalities bordering the Bohai Sea signed the Bohai Sea Declaration in 2000. Participation in this declaration signifies they accepted the obligation (and need) for inter-jurisdictional cooperation to restore and protect the environment. In the case of Bohai, inter-jurisdictional cooperation was inevitable as too many administrative units were damaging water quality and overexploiting coastal resources. This initiative was clearly generated by the central level; but the central government does not appear to be pushing inter-jurisdictional cooperation in other coastal areas.

The Xiamen experience also hints how the private sector, nongovernmental and academic communities will increasingly become an instrument for raising awareness among the government *and* general public.

counteracts sustainable development and policy integration in the coastal zone and means that China is not adopting the comprehensive international standards for ICZM.

Innovation at the Local Level

During September 2002, I had the opportunity to participate in a workshop on ICZM in Xiamen, which was organized by Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and its Regional Network of Local Governments in South-East Asia (RNLG). In addition to interviewing conference participants I had insightful conversations with scientists in Shanghai universities and their political counterparts in the State Oceanic Administration. My recent research in China showed that while the central government policies and institution building is creating the foundation for a functioning ICZM framework, some local governments are attempting different approaches to promote sustainable coastal development. In addition to examining local-level coastal management trends, I highlight below the varying success of ICZM attempts at the local level by comparing efforts in Shanghai and Xiamen.

Local laws and regulations for coastal management and protection are limited, but stronger in areas with local governments pursuing a truly comprehensive ICZM approach. In the long term, the national government expects local coastal management initiatives to cover the whole coast. One particularly promising regional attempt to coordinate marine legislation was the Bohai Sea Project. With support from the Global Environment Facility

Functioning regional efforts such as the Bohai project are still rare, while some areas—such as Xiamen—are making advances in coastal management.

ICZM in Xiamen

The seas along China's coasts are divided into three regions—the Northern Sea (*Beihai fen*), the East China Sea (*Donghai fen*), and the South China Sea (*Nanhai fen*)—each of which has its own regional SOA branch. At the provincial and local level there are various agencies that oversee marine and coastal issues.⁷ However, Xiamen is the only local government that explicitly has an office for ocean management. This is no surprise as Xiamen is also the only area where a local version of ICZM has been implemented comprehensively in China. Xiamen's ICZM program is empowered by a coordinating committee situated directly under the mayor and the committee has tried to involve all affected sectors in coastal management efforts.

Xiamen's unique ICZM initiatives stem, in part, from an upper-level catalyst—in 1994 Xiamen was selected as a national demonstration site (with multilateral support) for the implementation of a five-year ICZM program.⁸ In the beginning, the program focused on marine pollution prevention and the gradual establishment of effective coastal management institutions.⁹ In setting up their program the Xiamen municipal government emphasized the interaction of scientists and decision-makers, which led to the creation of an advisory group of marine scientists, legal experts, economists, engineers, and urban planners to provide their expertise to local policymakers. The advisory committee has helped the

Xiamen government incorporate scientific tools into coastal management policy—such as the Integrated Environmental Impact Assessment (IEIA), which was introduced to prevent unfavourable ecological and socioeconomic impacts of planned development projects. After adopting IEIA, coastal reclamation plans with negative consequences—such as accelerated erosion, siltation in drainage outlets, and the loss of fish grounds—were reassessed. Based on one IEIA, a marine zoning scheme was developed to include a water-use permit system to promote water conservation.

In Xiamen, ICZM has been successful, due to the admission of failures and efforts invested to reverse them. Consider, for example, the case of Yuandang Lake within Xiamen. This lake used to be a natural fishing harbor but it was cut off from the Western Sea by the construction of a causeway to reclaim land. Due to urban expansion more wastewater was discharged untreated into the lake and this water pollution endangered the surrounding ecosystem. This pollution disaster was gradually reversed through a ten-year treatment project including: (1) a reopening of the lake to the sea allowing water exchange, and (2) an urban development plan for turning the surrounding area into a recreational zone.

Shanghai Coastal Management

In contrast to the successful integration of coastal management in Xiamen (Yu, 1997), the coordination of scientific institutions and political administration in Shanghai is still in the initial phase (Shi et al., 2001). For example, while marine and coastal scientists acknowledge the threat of sea-level rise to the city and urban planners consider the issue, all of these experts must await approval from local policymakers to take action.¹⁰ Notably, the political administration does not yet recognize sea-level rise as an immediate danger and instead emphasizes the successes achieved in stopping the city's subsidence due to over extraction of groundwater. However, voices among the scientific community still warn that increasing heavy building construction may reverse the measures taken ten years ago to stabilize the groundwater table. While official propaganda states heavy building construction has been limited, an examination of Pudong and other parts of the city along the Huangpu River suggests the contrary. Clearly, poor coordination and communication between the marine scientific and policy communities has negatively impacted Shanghai's coastal management capability. Xiamen resolved such a lack of coordination through the establishment of the office of ocean management advisory group. In Shanghai, a comparable ICZM institution is not currently in place, but is planned

for the near future (Shi et al., 2001).

While the local government of Xiamen pursues an innovative ICZM approach, in other areas coastal management attempts are sometimes constrained by inadequate coordination with neighboring provinces. For example, SOA representatives informed me that some provinces and cities dispute coastal zone boundaries. In fact, Shanghai is a potential source of conflict, for the city stretches its territory into bordering areas through the construction of bridges to coastal islands and pipelines on the sea ground. Such huge projects also raise questions of possible negative impacts on the coastal ecosystem, as well as economic and environmental loss to the bordering regions. With its sustained economic power and financial capacity, Shanghai is in a position to continue to infringe on its neighbors with such coastal development projects. However, Shanghai policymakers are making an effort to fulfill the national requirements for ICZM by formulating regional laws, introducing functional zoning, and improving environmental conditions of its coastal waters. Due to a lack of cooperation on a regional and inner-municipal level, these efforts are tempered. Additionally, the Shanghai municipal government tries to keep its structural independence from the SOA in order to prevent it from becoming too powerful.

The Need to Involve Stakeholders

Public participation in policy development and implementation is a new concept to Chinese central and local policymakers, but some government officials are beginning to raise public awareness of policy issues. Such changes will be crucial if China is to promote effective integrated coastal management. Key to ICZM is the involvement of all affected stakeholders—the general population, trade unions, nongovernmental organizations (NGOs), and private businesses. It merits mention that stakeholders in China, especially NGOs and trade unions, are rarely acting independently of the party or government. The power of businesses (both private and state-owned) is dependent on their size, as well as the discretion of local policymakers, who are often involved in their management. NGOs, trade unions, and businesses thus represent *tools* of the government and do not yet reflect an independent stakeholder input, which is a crucial component for ICZM to meet international criteria. Nonetheless, even with limited independence, these groups may have a positive impact on implementation of coastal policies.

Some local government agencies have been active in trying to raise public awareness of marine issues. Xiamen, for example, developed a marine educational program

for students from kindergarten to university. The program even includes special training opportunities such as a summer university, in which older children tutor younger ones about coastal issues. In terms of raising awareness among adults, the Shanghai branch of SOA emphasizes the importance of the national government's annual ocean festivals. Unfortunately these events only take place in one coastal city each year and have not sparked local governments to create similar awareness-raising festivals.

As the ocean festival and Xiamen summer school initiative show, there are indeed innovative public education initiatives taking place at both the national and local level. In the long run, if public and NGO participation in coastal policy development increases, ICZM in China could become better coordinated and comprehensive.

Harmonizing Central and Local Initiatives

The national SOA plans to adopt experiences from successful local ICZM projects, such as Xiamen, and gradually implement them in other regions along the coast. This strategy harmonizes central and local initiatives, so ICZM in China will be partly centrally controlled and implemented top-down and partly initiated bottom-up (and thus defined by local governments). This power-sharing model has been used successfully in other policy sectors as China's economic and political reforms have progressed over the past twenty years. While China's distinctive top-down and bottom-up ICZM approach has little public participation and does not yet completely meet international ICZM criteria, a foundation is being established. In Xiamen—where ICZM was both a top-down and bottom-up creation—policymakers accepted input from outside experts and realized that utilizing ICZM would strengthen economic development. The Xiamen experience also hints how the private sector, nongovernmental, and academic communities will increasingly become involved in coastal management and could become an instrument for raising awareness among the government and general public. To protect the country's vulnerable coastal resources, Chinese policymakers should evaluate the Xiamen model and try to spark local initiatives and broaden commitment to marine conservation.

ACKNOWLEDGEMENTS

The DINAS-COAST project (EVK2-2000-22024) provided welcome financial support. PEMSEA kindly allowed me to participate in the Second Forum of the RNLG in Xiamen. Furthermore, this commentary would not have been possible

without the hospitality of all interviewees in Shanghai and Xiamen, who were so kind to give up part of their valuable time. I very much benefited from comments by Professor Dr. Richard Tol at Hamburg University. All errors and opinions in this commentary are those of the author.

Maren Lau holds an M.A. in Sinology from the University of Hamburg. Currently, she is a Ph.D. student at the Research Unit Sustainability and Global Change within the university's Center for Marine and Climate Research. Within the EU-project DINAS-COAST, Ms. Lau is working on the political perspective of adaptation to sea level rise in the People's Republic of China. She can be contacted at: lau@dkrz.de

REFERENCES

- ESCAP, Economic and Social Commission for Asia and the Pacific. (1995). *Towards integrated coastal zone management in Asia, Volume 1: Development and management of non-living resources in the coastal zones of the Asia-Pacific Region*. New York: United Nations.
- Han Mukang; Hou Jianjun; & Wu Lun. (1995). "Potential impacts of sea-level rise on China's coastal environment and cities: A national assessment." *Journal of Coastal Research, Special Issue 14*, 79-95.
- National Institute for Coastal and Marine Management. (1993). *World coast conference 1993: Proceedings*. The Hague: Coastal Zone Management Centre The Netherlands.
- Shi C.; Hutchinson, S.M.; Yu L.; & Xu S. (2001). "Towards a sustainable coast: An integrated coastal zone management framework for Shanghai, PRC." *Ocean & Coastal Zone Management, Issue 44*, 411-427.
- Wang Ying. (1992). "Coastal management in China." In P.Fabbri (Ed.), *Ocean coastal management in global change* (pp.460-469). London: Elsevier Applied Science.
- Yu Huming. (1997, May). *Science and policy at the local level: Xiamen, China*. Paper presented IOC-SOA International Training Workshop on the Integration of Marine Sciences into the Process of Integrated Coastal Management (ICM), 19-24 May 1997, Dalian, PRC.
- Zhonghua renmin gongheguo. (2001). *Haiyu shiyong guanli fa*. Beijing: Haiyang chubanshe.

ENDNOTES

¹ The overall coastline expands to 32,000 kilometers when the approximate 6,500 islands that the People's Republic of China claims sovereignty over are included (Han, Hou, & Wu, 1995).

² This zone encompasses eight provinces, two municipalities, one autonomous region, and one special administrative zone.

³ In a personal interview one SOA official estimated such an act should emerge in 3 to 5 years.

⁴ This law was passed 27 October 2001 and went into effect on 1 January 2002.

⁵ Other departments of SOA cover marine environmental protection, international cooperation, science and technology.

⁶ Prior to March 1998 the National Environmental Protection Agency only had a sub-ministerial status, subordinating it to all ministries and provincial governments.

⁷ Every coastal province or municipality has either an oceanic administration (Hebei, Tianjin, Shanghai, and Guangxi), a department of ocean affairs and fisheries (Liaoning, Shandong, and Hainan), or a bureau of oceanic affairs and fisheries (Jiangsu, Zhejiang, Fujian, and Guangdong). Additionally, the cities of Dalian, Qingdao, Ningbo, and Xiamen have their own local marine administration.

⁸ This effort was part of a GEF/UN Development Programme (UNDP)/International Maritime Organization (IMO) initiative.

⁹ SOA introduced in Xiamen the first truly comprehensive ICZM framework to local government structures.

¹⁰ In China, urban planners and researchers are participating in scientific advisory groups or committees, but ultimately their input depends on the approval of political decision-makers. In contrast, in Europe and North America preparing new coastal developments for sea level rise is typically within the discretionary power of local planners over design and budget.



**CROUCHING SUSPICIONS, HIDDEN POTENTIAL:
U.S. ENVIRONMENTAL AND ENERGY COOPERATION WITH CHINA**

By Pamela Baldinger and Jennifer L. Turner

China already consumes more energy and emits more greenhouse gases than any country except the United States. Moreover, China's recent breakneck pace of modernization already has left it with nine of the world's ten most polluted cities. Northeast Asia is beset with acid rain from China's sulfur emissions, and even countries halfway around the globe are feeling the impact of China's pollution problems and inefficient use of natural resources. Thus, China's energy and environmental policies have an enormous impact on the United States and the rest of the world. Yet energy and environmental issues have not played a prominent role in U.S.-China relations.

The ECSP/China Environment Forum publication, *Crouching Suspicions, Hidden Potential* (2002), succinctly summarizes U.S.-China cooperation in the areas of energy and environmental protection. It highlights opportunities for U.S. policymakers, business, and nongovernmental organizations to further such cooperation; it also analyzes barriers to present and future cooperative efforts.

To obtain a copy of *Crouching Suspicions, Hidden Potential*, contact ECSP Senior Project Associate Jennifer L. Turner at chinaenv@erols.com or 202/691-4233.

