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**Japan's Role as a Responsible Maritime Nation –
Enhancing Global Presence and Commitments
(with special reference to resource exploitation and conservation)**

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JAPAN'S ROLE AS RESPONSIBLE MARITIME NATION
– ENHANCING GLOBAL PRESENCE AND COMMITMENTS
(With Special Reference to Resource Exploitation and Conservation)

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Introduction

Geographically, economically and environmentally, Japan is undoubtedly a maritime nation. Japan is also a global maritime player, at least from fisheries and maritime transport perspectives. The global marine environment and its resources are facing more pressure from human amid rapid growing coastal population and development. Some of the pertinent issues are decline of fisheries resources, degradation of coastal marine ecosystems, loss of marine biodiversity, marine pollution, and potential impacts of global warming and rising sea level (Gray 1997; GESAMP 2001a, 2001b; MEA Board 2005; Worm *et al.* 2006, FAO 2007). Some of these issues are closely related to Japan. Over the years, Japan has contributed significantly to address some of these issues at the domestic as well as the global level. This paper highlights the current problems, reviews Japan's role and contribution, and seeks to provide future directions for enhancing Japan's global presence and commitments as a responsible maritime nation.

Current Status of Global Marine Environmental Problems

Global fisheries decline

There is no doubt that the world's capture fisheries are in crisis as statistics and scientific evidences point to dramatic declines in global stocks. Except the Indian Ocean, most of the major fisheries areas in Pacific and Atlantic Oceans have been fully exploited, if not overexploited (FAO 2007; Lundgren *et al.* 2006). In addition, a study released last year found that all seafood populations face potential collapse by 2048 (Worm *et al.* 2006).

Japan is very much attached to this issue as fish contributes around 50% of total animal protein in Japan and the fact Japan is now the world's largest importer of fish products. The import of fisheries products is critical to Japan as the fisheries production from coastal, offshore and distant-water fisheries has steadily declined since 1985. Therefore, it is no surprise that the fisheries policy in Japan is gears towards ensuring the long-term sustainability of fisheries resources.

Some of the outstanding issues include the over exploitation of tuna resources, scientific (research) whaling, and significant bycatch of non-targeted species (sharks, dolphins and marine turtles). The over capacity of fishing fleets and the potential high

levels of illegal, unreported and unregulated (IUU) fishing are also main concerns. Most recently, the potential collapse of bluefin tuna stocks was making front page news worldwide. Several reports (Gillett, 2004; Miyake *et al*, 2004; Lundgren *et al.*, 2006; WWF, 2007; FAO, 2007) concluded that the world's tuna fisheries are facing a drastic decline in stock. This reminds us of the collapsed of "Northern Atlantic Cod" in 1992. Despite a ten year fishing moratorium on northern cod, however, these stocks are showing no convincing signs of recovery.

The rise of aquaculture: solution or problem?

Most of the net growth in global fish production over the past 20 years has come from the development of aquaculture which accounted to about 30% of the world's food fish (Delgado *et al.* 2006, FAO 2007). With an average annual growth rate for the world of 8.8% per year since 1970, aquaculture is the fastest growing food production sector. Hence, coastal marine aquaculture is seems as a tool to supply the future of world fish demands and alleviate the pressure on marine capture fisheries.

On the other hand, marine and coastal aquaculture can create environmental and social problems. For example, shrimp farming in coastal areas has created a lot of problems over the years, and these problems include the destruction of mangroves, depletion of wild stocks, land-use conflicts, displacement of local community, and marine pollution.

Global degradation and destruction of marine coastal ecosystems

The coastal marine ecosystems provide many goods and services to human and environment worth at least US\$20.9 trillion annually (Costanza *et al.* 1997). This is about 63% of total contribution of the world's ecosystems. The most important ecosystems are undoubtedly the mangroves, coral reefs and seagrass beds. Most notably, these ecosystems serve as nursery, breeding and feeding grounds of many commercially important finfish and prawns. Hence, these ecosystems maintain marine biodiversity, ensure food security and support coastal livelihood and well-being of coastal people.

According to the new FAO assessment on the state of the world's mangrove forests, the mangrove area worldwide had fallen below 15 million ha by the end of 2000, down from an estimated 19.8 million ha in 1980. This indicates a 20% reduction in mangrove area worldwide in 20 years. Similarly, the report on the "Status of Coral Reefs around the World" notes that 20% of the world's coral reefs have been effectively destroyed and show no immediate prospects of recovery, and predicts that another 24% of the world's reefs are under imminent risk of collapse through human pressures (Wilkinson 2004). Seagrass, a lesser known but important habitat, does not fair better. Short and Wyllie-Echeverria (2000) estimated 290,000 ha of seagrass loss globally from documented sources and projected over 1.2 million ha of seagrass have likely been lost from undocumented parts of the world.

The widespread destruction of these critical ecosystems has serious consequences to global fisheries production. Many areas are experiencing decline in fisheries

landings especially prawn and high commercial value finfish which are dependent on these ecosystems for some part of their lifecycle.

Marine pollution and dead zones

The report compiled by UNEP's Global Programme of Action for the Protection of the Marine Environment from Land-Based Sources shows that the number of "dead zones" in the world's oceans has grown from 150 in 2004 to about 200 in 2006, threatening marine fish stocks and the people who depend upon fisheries for food and livelihoods. These ocean dead zones are becoming more common in developing countries.

An estimated 80% of marine pollution originates from the land and major causes are untreated sewage discharge, industrial pollutants, and nutrient and fertilizer run-off. The sea-based marine pollution is mainly from accidental and intentional oil discharge from ship operation and offshore exploration and production facilities. The estimated average annual inputs of oil entering the marine environment is 1,245,200 tonnes per year (GESAMP 2007). These marine pollution problems is expected to rise significantly by 2050 due to rapid increased in coastal populations and development, oil and gas demands, and action to combat marine pollution is not accelerated.

Global warming and rising sea level

Climate change will affect the physical, biological and biogeochemical characteristics of the oceans and coasts at different time and space scales (IPCC 2007). The major predicted impacts are increased incidence and intensity of extreme weather (cyclones, typhoons, and storm surges), severe coastal erosion, alteration and destruction of coastal ecosystems (i.e. coral bleaching and mangrove land-ward migration patterns), decline of fish stock, saltwater intrusion, decreased freshwater availability in coastal area, flooding in low lying coastal areas, and salinization of groundwater, estuaries, freshwater and irrigation systems.

Apart from making the coastal marine ecosystems and fisheries resources more resilience to climate change and providing proper coastal protection measures, the other critical challenge is addressing the issue of water scarcity in coastal areas with mega-cities and small islands. The world is already facing a drastic decline in clean water supply, the saltwater intrusion and potential salinization of freshwater systems will make the matter worse.

Review of Japan's Role and Contribution

The promotion of active regional and international cooperation to address global environmental issues is one of the main agendas in Japan's foreign policy. Over the years, Japan has provided financial and technical assistance to many countries and organizations for addressing global marine environmental issues. This effort has been implemented through various channels including Japan's Official Development Assistance (ODA), contributions from foundations, corporate sector and non-governmental organizations (NGOs).

The ODA remains the most important source and mechanism, and Japan is one of the top contributors in the world. Much of the allocations are given to bilateral cooperation projects, regional programmes, World Bank and regional banks, Global Environment Facility (GEF), and United Nations (i.e. UNEP, UNESCO and UNDP). The bulk of the total allocation is for the infrastructure development projects and about 20% is allocated for the social and environmental projects. The allocation for the environmental projects is very small, marine environmental projects in particular.

As an aid implementing agency, Japan International Cooperation Agency (JICA) has been tasked to implement most of the ODA projects. Some of the significant marine related projects are fisheries and aquaculture programmes under the Southeast Asian Fisheries Development Center (SEAFDEC), marine conservation projects for Galapagos Islands Marine Reserve, and training course on coral reef and mangrove conservation and management. For example, Japan's contribution to SEAFDEC in terms of financial, technical and experience for 40 years is enormous. One of such project was the regionalization of FAO's Code of Conduct for Responsible Fisheries which emphasize on responsible fisheries and aquaculture and sustainable utilization of coastal resources.

From the maritime transport perspective, Japan's contribution to safety of navigation and environmental protection in the major sea routes (i.e. Straits of Malacca and Singapore) is very significant. From 1969 to 2006, Japan contributed about US\$130 million on various project and this included the donation to the Malacca Straits Revolving Fund in 1981 which has been accessed by Malaysia and Indonesia in 1992 following the *Nagasaki Spirit – Ocean Blessing* incident. Most of the funding was from the Nippon Foundation and small contribution from the Japan Shipowners' Association (JSA) to the Malacca Straits Maritime Council. More recent contributions include the provision of a training vessel to Malaysia's Maritime Enforcement Agency and the pledge by the Nippon Foundation to contribute one-third of the initial five year running cost of the Aids to Navigation Fund in the Straits valued at over US\$9 million. These contributions reflect Japan's commitment towards ensuring safety of navigation and environmental protection in the Straits and its dependence on the Straits of Malacca and Singapore which carry 90% of its fuel.

Japan has a very high standard of corporate social responsibility (CSR) and is ranked 19th in the Global Responsible Competitiveness Index 2007, and has the most companies participating in the Global CSR Reporting Initiative. Most of the multinational companies do produce annual communication, sustainability, social and environmental reports. Over the years, many companies have contributed the land-based environmental improvement projects or "green projects". The involvement in coastal marine conservation projects is rather limited presumably due to low awareness of the marine environment. The increased of intensity of typhoons and storm surges in western Pacific Ocean and the recent Indian Ocean Tsunami did provide the opportunity for these companies to contribute in coastal marine ecosystem rehabilitation projects. Many multinational companies have made donation and some even involved actively in the rehabilitation projects, such as AEON, Toshiba, Ricoh, Epson, Hitachi, and Fujitsu.

Some NGOs based in Japan also play an active role in various capacities in promoting sustainable utilization and rehabilitation of coastal marine ecosystems and their resources. They are the International Society for Mangrove ecosystems (ISME), RAMSAR Japan, WWF-Japan, ACTMANG, and Japanese Red Cross (JRC). For example, ISME was established in 1990 as an international non-profit and non-governmental society and based in Okinawa for the conservation, rational management, and sustainable utilization of mangrove ecosystems. ISME has over 950 members from 86 countries and is presently working on various mangrove related projects, such as rehabilitation of mangroves aftermath the Indian Ocean tsunami. One of the critical problems facing by the NGOs is securing constant funding from the governments, relevant organizations and corporate sector.

In addition to the above mentioned organizations and their efforts, there are many other organizations and institutions involve significantly in various capacities in addressing the marine environmental issues, from promoting science, conducting research, providing funding to policy analysis. They are the International Center for Environmental Management of Enclosed Coastal Seas (EMECS), Japan International Research Center for Agricultural Sciences (JIRCAS), Japan Society for Promoting Science (JSPS), Japan Fund for Global Environment (JFGE), Ocean Policy Research Foundation (OPRF), local universities, and Japan-based UN organizations (i.e. UNU and UNITAR).

From the climate change perspective, the ratifying of Kyoto Protocol on 16 February 2005 represents a major achievement for Japan. The Kyoto Protocol is an international agreement setting targets for industrialized countries to cut their greenhouse gas emissions to 5% below 1990 levels by 2008 - 2012. Japan is committed to reduce the greenhouse gases by 2012 under the Kyoto Protocol.

Future Directions and Challenges

Japan has in the past contributed significantly in addressing some of the marine resource exploitation and other environmental issues. In view of future new challenges and uncertainties, Japan may wish to consider several approaches and policy changes to enhance its responsibility and commitments towards marine resource exploitation and other environmental issues. This is also in line with the global shift of focus to the environment and sustainable development, and the fact environment means business.

Ocean policy on a global scale

With limited and decreasing ocean resources, and the very importance of fisheries resources and maritime sea routes to Japan's food and economy security, Japan will need a comprehensive ocean policy on a global scale. The ocean policy will not only address issues within the 200-mile Exclusive Economic Zone (EEZ), but also highlight the need to sustain and secure strategic resources beyond the EEZ deems critical to Japan in a responsible manner. From environmental perspective, the policy should basically provide strategies for harvesting fisheries resources in sustainable and responsible ways, domestic and global fish species recovery plan, securing the bilateral and regional fisheries agreements, enhancing sustainable production of

coastal and marine aquaculture, promoting rehabilitation of critical coastal marine ecosystems, promoting marine research and use of science for sound decision making, reducing marine pollution, and not least, further enhancing regional and global cooperation on environmental issues.

Delivering the promise of aquaculture

Tuna culture is definitely a main agenda for Japan to address the issue of decline of global tuna resources. At the same time, the demand of tuna is expected to grow along with the increased popularity of tuna-based sushi and sashimi worldwide. Tuna culture has emerged as a significant industry over the last ten year (Lundgren et al. 2006; FAO 2007) and is presently practiced in Australia, Japan, United States, Mexico and the Mediterranean Sea. However, most of present tuna culture involves tuna fattening and relies on wild juvenile stocks. The ability of tuna hatcheries to produce high quantity of high quality tuna fry to meet the market demands remains a challenge. Many areas especially in Indonesia and the Philippines have been identified as potential areas for tuna farming. The future of investment is good provided we can supply enough quality tuna fry and there is a further advancement of culture technology

Shifting the focus of the ODA to marine environmental issues

Over the last 15 years, the ODA has emphasized on infrastructure and energy sector. Some of these projects also caused environmental problems to the recipient countries. It is high time to focus more on environmental issues. This is also to fulfill the commitments by development countries to achieve the objectives of the Millennium Development Goals. Besides the restructuring of the ODA's sector allocation, more funding should be allocated to NGOs as they have a very limited fund to commit to various environmental projects. This is also to recognize and reward their significant contribution in various environmental projects and marine conservation.

CSR as the next driver

As the ODA is limited and decreasing, the contribution from the corporate sector through CSR is very crucial in the future. Apart from compensating the decline of the ODA, the contribution from the corporate sector will compliment, or even enhance the objectives of the foreign policy. Unlike the ODA, gaining public support for CSR's contribution is easy as most of the projects are small and targeted at local community level. The benefit of such projects is also tangible especially at local level and always received more attention and publicity from the media. In addition, the communication and sustainability reports published by companies also deliver the message not only to shareholders, but to people all over the world. Besides tax rebate, all these advantages give free advertisement to the product brand and enhance the green image of the companies. Potentially, their investment projects and products are also more acceptable by foreign governments and their local people. Generally, investing in environmental improvement project is good for business and enhances global presence in a responsible manner.

To encourage the contribution of corporate sector in marine conservation projects, the government can play a greater by promoting maritime awareness to the

corporate sector. The fact coastal marine ecosystems are more valuable than terrestrial ecosystems deserves more attention from the governments as well as corporate sector. Due to limited knowledge about coastal marine environment and to ensure the successful implementation of projects, the corporate sector should be encouraged to work together with Japanese and local NGOs, and in some cases, with UN organizations.

Sharing the experience and technology

Japan has learned by experience the lesson of coastal and marine environmental degradation due to rapid economic and industrial development. Perhaps the bitterest lesson is the tragedy of Minamata Bay known as “Minamata Disease”. On the other hand, Japan also made advancements in marine technology, including sustainable aquaculture system, disaster warning system, coastal protection system, water treatment technology, seawater desalination system, etc.

Japan can offer these valuable experience and lesson to the developing countries, especially to avoid or minimize environmental and social costs while pursuing economic development. Some of the technologies will be urgently needed to tackle the impacts of rising sea level. For example, good coastal protection system and seawater desalination system will be in high demand to address the issues of coastal erosion and serious water shortage in the coastal areas, respectively. This also provides business opportunity for Japanese companies. Of course, the commitment is to make this technology available to poor developing countries at an affordable cost. In future, there will be more coastal marine rehabilitation projects to make the ecosystems more resilience to the climate change. The experience of various coastal rehabilitation projects implemented by JICA and NGOs (i.e. ISME, ACTMANG and JRC) will be very useful.

Setting the next target for the Kyoto Protocol

The recent IPCC’s report has confirmed that the climate change is real and urges all countries to take responsibility to address this issue seriously. It is anticipated that more effort should be done on the reduction of greenhouse gases. Japan is committed to provide further contribution to the future framework after 2013. The challenge for Japan is to engage with United States, China, India and some other developing countries and encourage these countries to join effort in reducing greenhouse gas emissions. Of course, to play this leading role, Japan must fulfill its own responsibility to reduce greenhouse gas emissions by 6% from the 1990 level.

Conclusions

The global marine environment and its resources are in crisis. Global warming and rising sea level will not only further worsening the existing problems, but create new problems and challenges. Japan has in the past contributed significantly in addressing some of the issues especially fisheries and maritime transport sectors, and lately on climate change initiative. To further enhance Japan’s role as responsible maritime nation in the global level, Japan may wish to consider several approaches and policy changes, including of having an ocean policy on the global

scale, increasing ODA's allocation for marine environmental projects, promoting CSR in marine environmental projects, sharing experience and technology with developing countries, and increasing commitments on tackling the climate change issues.

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