

Policy Proposal on
“Conservation and Management of Islands
and Their Surrounding Ocean Areas”

March 2012

Ocean Policy Research Foundation

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1. Purpose of this policy proposal

The ocean covers some 70 percent of the earth’s surface and plays a significant role in sustaining human life by supplying natural resources and stabilizing climate. Islands serve as an irreplaceable base from which to protect and develop ocean resources, and conserve the marine environment and biodiversity. Under the treaty system formed by the United Nations Convention on the Law of the Sea (UNCLOS) and other international treaties, island States have the right to develop and utilize natural resources and the responsibility to protect and preserve the marine environment, including conserving the living resources. Since many of the island States in the Pacific Ocean have vast exclusive economic zones (EEZ), they have a key role to play in the governance of the oceans.

However, these islands are faced with local environmental problems and various other problems in the conservation and management of islands, due to global climate change and variability. In addition, sea level rise threatens to submerge the islands. Island States cannot adequately respond to such diverse problems on their own and need the help of the international community. Japan too has many islands, and the remoter ones are facing similar problems; close cooperation with island States is needed to solve these problems.

This proposal focuses on island States in the Pacific Ocean, proposes directions toward solution of the problems faced by island States and surrounding areas by investigating how best to conserve and manage islands, and aims to ensure the sustainable development of island States and the sound development, utilization and conservation of the oceans through cooperation between island States and the international community.

2. Problems and issues for the management of islands and their surrounding ocean areas

Specific problems and issues for the management of islands and their surrounding ocean areas can be summarized as follows: (1) problems and issues for the conservation and management of islands, (2) problems and issues for the management of surrounding ocean areas, and (3) problems and issues concerning climate change and variability.

(1) Problems and issues for the conservation and management of islands

To enable island States to serve as a base for the development, utilization and conservation of the oceans, it is important first to appropriately conserve and manage the islands themselves. Islands and their coastlines are exposed to natural threats, such as typhoons, tsunami, and storm surge. Regional communities of islands are affected by anthropogenic factors, such as the concentration of

population on specific islands, improper coastal management, insufficient waste management which worsens the coastal environment, and the extraction of gravel.

The combination of environmental and anthropogenic pressures has caused physical changes to the coastline of islands (erosion, deposition and movement of islands), flooding of islands, salinity intrusion of the ground water system, and changes to the health of coral reefs and reef dwelling organisms. Such changes threaten the physical stability of islands, and the infrastructure and resources of the local community. These local problems have further reduced the resilience and capacity of islands and their ecosystems to recover from the impact of extreme events, global environmental changes and sea level rise.

To address these local problems, it is recommended that island States conserve and manage their islands. However, since their human, financial and organizational capacities are often limited, international cooperation is needed.

(2) Problems and issues for the management of surrounding ocean areas

Under UNCLOS, which provides an international framework for the governance of oceans, each state is supposed to manage its surrounding ocean areas including its exclusive economic zone. Since EEZs of island States in the Pacific Ocean cover a major part of the Pacific Ocean, these States play a significant role in managing the ocean. Under UNCLOS, island States have the sovereign right to develop and utilize living resources, energy and mineral resources in their vast EEZs, as well as responsibility to conserve the marine environment; they therefore need to foster efforts towards integrated management of the development, utilization and conservation of their EEZs. For this purpose, island States need to define their maritime jurisdiction, appropriately manage fisheries, maintain and secure maritime transportation, develop marine mineral and energy resources, and conserve and use sustainably the marine environment and marine biological diversity in their maritime zones.

However, due to the lack of human, financial, and organizational resources, island States face difficulties in the integrated management of their surrounding oceans. International cooperation is therefore a necessity.

(3) Problems and issues for the response to climate change and variability

Since coral reefs and other marine ecosystems of islands have been damaged by climate change and variability, some island States are facing the risk of being submerged, partly or entirely, in the long term. This threatens not only the security of the islands' physical environment but also the livelihood of inhabitants who depend on agriculture or fisheries. Climate change and variability also threaten island States in various other ways, placing greater load on coastal resources, water quality, and so on.

For island States to cope with these issues, it is important to clearly distinguish global problems (climate change and variability) from local problems, to create a system for the scientific analysis and prediction of the cause and effect of each problem, and to respond appropriately. It is also necessary to cope with problems under international law caused by the climate change-induced rise in the sea level. However, island States do not have the capacity to take such measures. Once again, international cooperation is needed.

3. Directions toward solution

There are various approaches to tackling each of the issues listed in section 2. In the following descriptions, the actions to be performed mainly by island States are abbreviated as “island States”, those to be performed by the international community are abbreviated as “international community”, and those to be performed by both island States and the international community are abbreviated as “island States and the international community”.

(1) Conservation and management of islands

① Management strategy of islands and the formulation of land use plans and coastal protection plans

“Island States”

To overcome the natural threat or influence of climate change and variability, and to appropriately conserve and manage their national land while preventing environmental deterioration induced by expansion of human activities, island States need to take the following steps:

- Comprehensive strategy to manage islands

In order for a local community to co-exist with natural dynamics of islands, it is necessary to create a comprehensive management strategy to control the threats to biophysical systems of islands. Such a management strategy should aim to maintain the life-supporting capacity and natural dynamism of islands and their associated ecosystems. It should also aim to reflect the diversity of island types, to identify the complicated interaction of biophysical systems of islands (human beings, land, water and ecology), and to embrace a broad range of practical solutions consisting of land use plans and coastal protection plans, as well as hard and soft engineering tools. As for the increase in urban population and associated problems, solutions based on an overall consideration of balanced development are desirable, if possible, by considering utilization of local areas and uninhabited islands from long-term perspective.

- Appropriate land use plan

In order to realize balanced utilization of national land, it is desirable to draw up an appropriate land use plan, by taking into account the geomorphological features of each island and the situation of land use.

- Appropriate coastal protection plan

The shapes of islands are changing in various ways. In areas where land is decreasing, there may be inappropriate development of coastal protection facilities and modification of land forms, resulting in coastal erosion. To improve the situation, it is desirable to draw up a coastal conservation plan including, for example, practical use of the natural dynamism of coral reefs, with a full consideration of the mechanisms involved in formation and erosion of the coast.

“International community”

In order to investigate the status of land use, natural environment and its vulnerability to disasters and appropriate countermeasures against them, the international community needs to increase their support to island States in terms of both hard and soft measures, and support the collection of information and data for drawing up abovementioned strategies and plans. Support for capacity building for the collection and analysis of information and data is also needed, so that island States can carry out such activities autonomously and continuously in order to cope with the varying natural environment. Furthermore, it is necessary to cooperate in terms of development and implementation of strategies and plans for the conservation and management of islands, by supporting the development of robust environmental and socio-economic baselines which contribute to formulating management strategies.

② Formation of local communities which are resilient to disasters

“Island States”

Island States need to develop detailed information for predicting damage and evaluation of hazards, classified by type of disaster (such as typhoon, earthquake, storm surge, tsunami) and cause, based on scientific knowledge. It is necessary to enhance monitoring systems, prepare protection and evacuation facilities (such as tsunami shelters), strengthen education programs for residents on how to reduce natural disaster damage, examine the best ways of distributing disaster information according to the characteristics of each island, and construct an information system to convey natural disaster information quickly and effectively to residents. Such information should be provided to island States in advance or be obtained by their own measurements. It is necessary to develop comprehensive disaster preparedness plans and their implementation systems, including the abovementioned measures, in order to build resilient local communities in terms of both hard and soft measures.

In order to create local communities which are resilient to disasters, it is also desirable to draw up and promote appropriate land use plans and national land plans, including policies such as restricting use of land vulnerable to disasters, based on risk assessments. It is also necessary to develop evacuation facilities (shelters) for residents living in places that are vulnerable to damage,

especially on small islands.

“International community”

In order to cooperate with these efforts by island States, the international community needs to actively provide meteorological information and improve observation facilities as the base of each area, through studies by related international organizations. It is necessary to support scientific research and sharing of information and data regarding the disaster risk for each island, and to support the development and improvement of comprehensive disaster preparedness plans and their implementation, from technical, capacity building, and financial perspectives. Furthermore, it is necessary to support capacity building through training and scholarship programs, etc., so that island States may independently collect, analyze and update the meteorological data.

Japan has been assisting disaster countermeasure projects in Fiji, the Solomon Islands, Samoa, and elsewhere, and is expected to continue and expand such support efforts.

③ Promotion of waste management measures

“Island States”

It is recommended that island States draw up and carry out strategies or plans for waste reduction appropriate to their situations in the short-term and mid-to-long term, in line with their population, land area, and human power limitations.

Especially, there is an urgent need to improve waste disposal facilities which could affect the region’s environment, and to introduce measures to reduce waste (introduction of 3R and refuse compost). It is also important to improve the understanding and awareness of the residents about waste problems.

It is desirable that island States consider using economic mechanisms for controlling the inflow of goods as sources of waste. In addition, establishing zero-waste policy ("bring it in, take it out ") should be considered.

“International community”

Regarding short-term strategies such as development of waste disposal facilities and improvement of existing facilities, and long-term strategies such as reducing waste itself, the international community should study what kind of model can be proposed. Based on such measures, the international community should also propose best practices according to the type of island, and support island States by providing materials for decision making. Possible practices include: introducing the 3R system in countries with a large land area and human resources, improving sewage treatment facilities in densely populated areas, and increasing the use of compost toilets (including training on their use) in countries and areas where it is difficult to install large-scale

sewage treatment facilities. In addition to providing best practices, it is desirable to show unsuccessful cases in the past as well as the reasons for their failure, to assist in the decision-making process.

Japan has been assisting waste management projects in Samoa, Palau, Fiji, and elsewhere, and is expected to continue and expand such support efforts.

④ Promotion of renewable energy development

“Island States”

It is important for island States which are striving towards economic independence to urge their local communities not to be too dependent on imported energy. It is desirable therefore that island states promote the utilization and development of renewable energy, such as photovoltaic power, wind power, wave power, ocean current power, and ocean thermal energy conversion, by granting incentives such as subsidies and tax benefits to entrepreneurs involved in development. It is also necessary to change attitudes on the political level, such as through a campaign for saving power and energy, as well as to promote energy saving by raising citizens’ awareness.

“International community”

Besides supporting technology development of energy industries in island States, the international community should support research on the natural conditions of each State, and the energy development suitable for the potential of natural conditions there. If the cost differential remains within permissible limits, following a comparison between fossil fuel and renewable energy, renewable energy development should be given preference. It is important that electric power supply and consumption are efficiently controlled by using smart grids. Furthermore, technology transfer to island States should be performed by promoting technical development, such as reducing costs and the need for maintenance.

Japan has been assisting projects to introduce clean energy by using solar power in Palau, the Marshall Islands, Tonga, Micronesia, and elsewhere, and is expected to continue and expand such support efforts.

⑤ Conservation of coral reefs and mangrove forests

“Island States”

Coral reefs and mangrove forests play an important role in disaster prevention and marine environment protection by, for example, preventing coastal erosion, but erosion can occasionally be caused by unsuitable coastal protection works. Therefore, a multifaceted approach to maintaining islands by using well-designed structures and beach nourishment, and a long-term approach which takes into account the ecological system consisting of coral and foraminifera, are required.

Regarding beach nourishment, which is an effective technology for land development and environment development, the environmental considerations of sand mining on the island and cost reduction by using simple sand transportation technology should be studied.

“International community”

The international community needs to support a multifaceted approach by island States based on the aforementioned utilization plan and conservation plan for conserving coral reefs and mangrove forests in consideration of the environmental and geomorphologic features of the islands.

“Island States and the international community”

Island States and the international community must recognize the urgent need to improve native habitats in oceans, not only for environmental reasons but also for disaster prevention. Furthermore, island States and the international community should promote an ecosystem-based approach such as the establishment, spread and transfer of technologies on coral nourishment, and research and enforce measures to conserve islands through the production of sand by using foraminifera.

Japan has been assisting related projects for island States in the Pacific Ocean such as Tuvalu, and at Okino-Torishima, and is expected to play a leading role in future based on its experience.

⑥ Response to marine environment degradation by industry and household drainage

“Island States”

As marine environment degradation in island States has been caused by industry and household drainage, it is recommended island States introduce legal systems, such as setting environmental standards for drainage from land, and putting in place mechanisms for monitoring compliance with the regulations. In addition, since outflow of nutrients in drainage into the ocean has also been affecting marine habitats, and materials which are brought into islands, such as imported food and fertilizer, may be related to this issue, it is desirable that these materials be controlled.

“International community”

The international community needs to support the abovementioned efforts by island States through sharing of past experiences and providing scientific knowledge.

(2) Management of the ocean areas surrounding islands

① Establishment of maritime jurisdiction

“Island States”

In order to fully implement integrated ocean management, it is necessary for island states to determine their maritime jurisdiction. For this purpose, it is important that island States survey their

baselines, and, when a boundary in an overlapping area with a neighboring State is not fixed, negotiate with it and fix the boundary. Such a negotiation should be based on pertinent regulations of UNCLOS, taking into account international precedents. Where applicable, island States need to follow procedures for extending their continental shelf, making submission to the United Nations Commission on the Limits of the Continental Shelf in accordance with UNCLOS. In addition, island States need to strive to ensure that the low-water line is indicated on large-scale charts and that the range of maritime zones is officially announced.

“International community”

The international community needs to provide ongoing support to island States for necessary surveys for setting up their baselines and maritime zones, and for updating existing ocean-related legislation and charts.

② Practical fishery management policy

“Island States”

It is desirable that island States seek to manage fishery resources, including controlling destructive fishing by small-scale fisheries in coastal areas. It is also desirable to manage the catch quota in EEZ.

“Island States and the international community”

Island States and their distant water fishing state partners should strengthen monitoring, control, and surveillance (MCS) at the national and regional levels to better combat IUU (illegal, unreported and unregulated) fishing.

The establishment and enhancement of law enforcement agencies such as coastguards or national MCS committees to coordinate and maintain law and order at sea will be effective. The possibility of establishing joint coastguards and multi-lateral surveillance enforcement agreements among some island States should also be considered.

“International community”

The international community needs to support the implementation of fishery management measures based on socio-economic research on fisheries, indigenous knowledge, and community benefits, by fully utilizing scientific data. If the fishery management ability of island States is limited, the international community should help them establish and strengthen their fishery management system, including human resource development.

The international community should, through regional fisheries management organizations, promote sustainable fishing by ensuring an equitable distribution of the conservation burden, by

removing excessive fishing capacity, by tackling IUU fishing problems, and by preventing overexploitation of fishery resources. The development of a new system to ensure the equitable distribution of the conservation burden should also be examined. As for establishment of coastguards, the international community should support human resource development, and provide ships and communications systems, and so forth. Furthermore, the international community needs to support value-added processing and export of fishery products, resulting in job creation and economic development of island States.

Japan has been assisting in areas such as regional fishing promotions in Fiji, Kiribati, the Marshall Islands, Micronesia, Nauru, Palau, Papua New Guinea, the Solomon Islands, Tuvalu, and elsewhere, and is expected to continue and expand such support efforts.

③ Maintenance and securing of shipping services

“Island state”

Island States need to maintain and secure shipping services which are essential for transportation among islands, by taking advantage of the knowledge of traditional navigation accumulated so far. It is desirable that Island States also seek to introduce and use ships which are easy to operate, manage, and maintain.

“Island States and the international community”

It is desirable for island States and flag states of ships to make efforts to ensure safe and secure maritime transportation, and to prevent marine pollution and ecological damage caused by ships.

“International community”

The international community needs to offer financial support to secure maritime transportation and technical support for human resource development as follow-up after the introduction of ships, maintenance of maritime transportation, and environmental conservation measures.

Japan has been assisting the improvement in maritime security, and supporting cooperation and exchange between island countries for the safety and management of oceans in the Marshall Islands, Micronesia, Palau, and elsewhere on a private-sector basis, and is expected to continue and expand such support efforts.

④ Exploitation of marine mineral and energy resources

“Island States”

Island States need to enact effective regulatory measures based on the precautionary approach and environmental impact assessment in order to exploit marine mineral and energy resources in their territorial waters and EEZ, as well as fulfill their duty to conserve the environment. It is

desirable that island States also improve their legal system regarding each stage of exploration, development, and production (mining) of marine mineral and energy resources, in order to protect public health, living resources, safety in the operation of facilities and appropriate control of social and financial benefits.

“International community”

The international community needs to offer suitable support for compiling manuals for predicting and evaluating environmental damages caused by investigation, trial digging, and mining, and support for establishing special guidelines and policies to guide all exploitation processes appropriately, and to protect the benefits and environment of island States. The international community needs to support workshops and other activities that facilitate the smooth sharing of technical knowledge related to environmental impact assessments of seabed mining of minerals and energy resources, particularly for the benefit of developing countries.

Japan has been assisting surveys of resources, such as marine minerals, in the Pacific island States, and is expected to continue and expand such support efforts.

⑤ Conservation and sustainable use of marine environment and marine biodiversity

“Island States”

Island States should consider utilizing a range of management tools, including Marine Protected Areas (MPA), and other tools to achieve integrated ocean management and Ecosystem-based Management (EBM), to conserve and use the marine environment and marine biodiversity in a sustainable manner while taking into account local conditions and circumstances. In the establishment and operation of MPAs, residents who have traditionally utilized the oceans need to play a major part to ensure continuity of activity and desired effects. Other resource control measures, such as reduction in fish catch pressure and banning of destructive fishing methods, should also be considered.

To be effective, it is necessary that MPAs are designed around clear objectives, developed and implemented in harmony with other objectives for use of marine space and resources. In addition, marine conservation is about stewardship, and much more than no-take areas. Accordingly, not only MPAs that strictly prohibit fishing but also MPAs that may allow sustainable utilization of fishery resources should be examined. The broader approach to EBM is important for addressing the complex issues already facing island States, such as sustainable development, the human environment and maintenance of ecosystem processes and biodiversity. In order to control Marine Protected Areas appropriately, networks between MPA administrators and working level members should also be formed, to develop human resources.

“International community”

With a view to the installation of new MPAs, the international community needs to strengthen the accumulation of scientific data on the marine environment and examine proper environment assessments. It is also required to provide technical and financial support, if necessary, toward the development of the guidelines for proper establishment of MPAs.

(3) Response to climate change and variability

① Adaptation to climate change and variability by island State societies

“Island States and the international community”

Because of their small area and vulnerability to natural threats, islands may be greatly affected by climate change and variability. It is preferable to promote understanding of the regional influences of global warming and associated climatic changes such as the rise in the sea level and the ocean temperature. For this purpose, island States and the international community need to study the regional influences based on surveys of past records archived in coral or sediment. Studies on new weather phenomena such as the El Nino-Modoki is also desired, regarding the climate variations induced by climate systems of internal origin such as the El Nino-Southern Oscillation and Indian Ocean Dipole. For this purpose, integrated studies on sea level rise, such as the improvement of prediction technology, establishment of continuous observation system for necessary data, and promotion of technology transfer, are required. In order to proceed with such studies, it is important that island States and the international community conduct scientific investigation with clear targets and take practical measures for climate problems based on data, as well as establish an international observation system at the most appropriate observation sites.

In order to cope with environmental changes which island States suffer, it is necessary to make a clear distinction between global problems (climate change and variability) and local problems. For this purpose, it is required to prepare a system to analyze and predict the cause and effect of each problem scientifically, and to tackle problems appropriately.

It is desirable that, among global issues, climate change, which may cause a rise in the sea level and the ocean temperature, be addressed on a systematic basis from a long-term perspective by island States and the international community; that is, by taking necessary measures such as improving the observation systems for vulnerable ecosystems and resources (such as coral reefs, fish, mangroves, and coastal ecosystems), and by planned experimental research and seashore protection measures. It is also necessary to strengthen the fundamental climate observation capabilities of small islands so that fundamental data on climate irregularities such as the 10-year climatic cycle caused by the El Nino-Southern Oscillation and El Nino-Modoki, may be extensively researched.

Japan has been assisting, for instance, in the enhancement of weather forecasting capabilities, in Fiji, and elsewhere, and is expected to continue and expand such support efforts.

Among local issues, coastal marine environment deterioration induced by anthropogenic factors needs to be addressed appropriately based on 3(1) of this proposal.

In order to examine and enforce drastic measures on a long-term basis in islands where severe influences are expected from climate change and variability, it is desirable that island States and the international community classify islands according to their geo-scientific and ecological features, and then plan and enforce systematic and effective measures depending on such classification. For this purpose, it is important to classify islands topographically and ecologically, to clarify problems for each classification, and to share successful measures taken in each classification. As for islands consisting of atolls, a separate examination of measures is desirable, since they are most vulnerable to climate change and variability. In this case, it is also desirable to take measures against local problems simultaneously.

② Response to international law issues

“International community”

The low water lines of islands are important, as they constitute the normal baseline for measuring the breadth of the territorial sea, EEZs and the continental shelves. The sea level rise due to climate change may cause shifts in the low water lines or submergence of part or the whole of the island territory, but such situations are not considered in existing international rules.

Under such circumstances, it is desirable for the international community to clarify the problems in relevant provisions of UNCLOS, and promote the adoption of new rules to cope with the effects of climate change. If related provisions of UNCLOS need to be changed, it is necessary to examine specific methods, such as adopting a supplementary document of UNCLOS at meetings among the countries concerned or at the United Nations General Assembly.



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