

RESPONSIBLE ACTION FOR MANGROVE DEFORESTATION

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ABSTRACT

Since proposing “Sustainable development” defined by World Commission on Environment and Development, many organizations (governments, industries and NGOs) have sought and tried sustainable way of shrimp aquaculture. As the mangrove was destroyed on a large scale, they have tackled to mangrove reforestation around the same time. Destruction of the coast ecosystem by shrimp culture pond reclamation, especially mangrove deforestation is pointed out. Shrimp aquaculture industry; especially intensive style has led to immense environmental and social problems, because mangrove has the role of free public goods for a local resident. In addition, the drainage and sludge from a shrimp culture pond polluted coastal marine environment, and have caused the environmental damage as the degradation and loss of natural coastal resources. Moreover, the abandoned shrimp culture pond which lost production capacity of shrimp by pollution and plague problems is becoming a big problem in resent years. Considering what are responsible shrimp aquacultures, we survey mangrove deforestation and reforestation of Southeast Asia. Furthermore, taking up the example of a Thailand in detail, we introduce the actions which various organizations (government, industry, NGO) are performing towards environmental regeneration and conservation of coast marine natural resources. By the above survey and research, we want to obtain a political hint; toward the issue and method to carrying out revitalization of local communities by environmental regeneration and sustainable coastal natural resources management.

Keywords: Shrimp aquaculture, Mangrove deforestation and reforestation, Environmental regeneration, Sustainable development

BODY OF PAPER

This paper introduces various organizations (government, industry, NGO) and their actions which are performing towards environmental regeneration and conservation of coast marine natural resources.

After 1980's, shrimp hauls are decreasing in number of the countries in Southeast Asia. At the same time, establishing of aquaculture technology, the quantity of production of a culture shrimp increased. Reclamation of the culture pond in Southeast Asia became the big factor of mangrove deforestation. Shrimp aquaculture industry; especially intensive style has led to immense environmental and social problems, because mangrove has the role of free public goods for a local resident. In addition, the drainage and sludge from a shrimp culture pond polluted coastal marine environment, and have caused the environmental damage as the degradation and loss of

natural coastal resources. Moreover, the abandoned shrimp culture pond which lost production capacity of shrimp by pollution and plague problems is actualizing as a big issue in recent years.

Some organizations are tackling about this problem. What kind of organization exists and what activity is carried out in the world? This paper researches about this point by using google, internet reference site. In “mangrove reforestation” and “shrimp farming”, 170 pages are searched and 118 pages are displayedⁱ. In “mangrove reforestation” and “shrimp aquaculture”, 89 pages are searched and 63 pages are displayed. In “マングローブ植林” and “エビ養殖”ⁱⁱ, 102 pages are searched and 67 pages are displayed.

24 organizations are found by these pagesⁱⁱⁱ. With characterizing about actor and activity, this paper introduce these organizations from these pages. Classifications of feature are as follows:

- Organization
 - 1) Governmental Organization
 - 2) NGO
 - 3) Educational Institution
 - 4) Company
- Main (or Original) Activity
 - A) Mangrove Conservation and Research
 - B) Mangrove Reforestation
 - C) Research about shrimp farming
 - as a) international activity, b) local activity

1) Governmental Organization

A)-a) Mangrove Conservation and Research as international activity

- Japan International Cooperation Agency
 - “The Development of Sustainable Mangrove Management Project”

This project intends to find out a sustainable system for mangrove forest management which suites both surrounding conditions and management purposes, and to find out the possibilities of investment which carry out re-forestation activities alongside profitable economic activities for the people as well as the private sectors in Indonesia.

A)-b) Mangrove Conservation and Research as local activity

- Ranong mangrove forest research center (Thailand)
 - The Royal Forest Department established the Ranong Mangrove Forest Research Center in 1983. Its main objectives are:
 1. To conduct research and support the research projects of other research organizations both within Thailand and overseas
 2. Disseminate information about mangrove forest ecology to the general public
 3. Encourage mangrove forest conservation.

B)-b) Mangrove Reforestation as local activity

- The Foundation of King Rama IX, the Great (Thailand)

“Implementing His Majesty's Initiative on Conservation and Development of Mangrove Forests”

This project develops and rehabilitates mangrove forests with target areas in Songkhla and Pattani Provinces. Determined to rehabilitate the environment and to ensure the sustainability of natural resources, they initiated together a reforestation project as a gift to the people on the occasion of the Fiftieth Anniversary of His Majesty's Accession to the Throne.

- Ministry of Agriculture and Rural Development, Vietnam
“Coastal Wetland Protection and Development Project”

This project is intended to restore and protect coastal mangrove belts and coastal wetland reserves, covers the Southern Mekong Delta provinces of Ca Mau, Bac Lieu, Soc Trang and Tra Vinh province.

C)-a) Research about shrimp farming as international activity

- The Aquaculture Department of the Southeast Asian Fisheries Development Center (Philippines)

“Mangrove-friendly shrimp culture”

SEAFDEC/AQD is one of the four departments of SEAFDEC, a regional treaty organization established in December 1967 for the purpose of promoting fisheries development in Southeast Asia. The Aquaculture Department of the Southeast Asian Fisheries Development Center (SEAFDEC/AQD) is based in Tigbauan, Iloilo, Philippines.

SEAFDEC/AQD's missions are:

1. Promote and undertake aquaculture research that is relevant and appropriate for the region
2. Develop human resources for the region
3. Disseminate and exchange information on aquaculture

- Fishery division, Japan International Research Center for Agricultural Sciences (Japan)

The Division analyzes the effectiveness of improving the water quality of wastewater using mangrove stands and the mangrove ecological system prior to the discharge of wastewater into the environment.

2) NGO

A)-a) Mangrove Conservation and Research as international activity

- Mangrove Action Project (U.S.A)

Partnering with mangrove forest communities, grassroots NGOs, researchers and local governments to conserve and restore mangrove forests and related coastal ecosystems, while promoting community-based, sustainable management of coastal resources. MAP's international network has grown to include over 400 NGOs and over 250 scientists and academics from 60 nations. Through its wide network, MAP is stimulating the exchange of ideas and information for mangrove forest protection and restoration. Also, MAP promotes effective regulations and enforcement to ensure sustainable shrimp aquaculture practices.

- Greenpeace (International)

Greenpeace works with the local activist or NGO in the country where has destroyed coast environment by shrimp farming. Greenpeace calls for a ban shrimp culture which cause environmental destruction to the United Nations. Over the past several years, Greenpeace dispatches a campaign ship to various parts of Central America as performing support of the community action for environmental restoration.

- ACTMANG (Japan)

ACTMANG is offering technical and financial support for preservation and reforestation of mangrove by the local residents. ACTMANG is mainly conducting dispatch of a specialist and research investigation in Vietnam, Myanmar, Ecuador, etc.

- International Society for Mangrove Ecosystems (ISME) (Japan)

ISME which is based in Okinawa promote research and surveys and to associate with other scientists and organizations with the purpose of promoting the conservation, rational and sustainable management of mangroves; to serve as an international data-bank on mangrove ecosystems.

B)-a) Mangrove Reforestation as international activity

- Sustainable Development Green Field (SDGF) (Japan)

This organization is made from Japan Macro-Engineers Society and The Japanese Association for Arid Land Studies. They perform mangrove volunteer reforestation in south Thailand, mangrove watching tour at Iriomote island, Okinawa, research activities of the mangrove in southern Izu.

- Research Association for Global Mangrove (Japan)

They perform the natural environmental preservation by reforestation of a mangrove wood. For this reason, investigation research also is performed. They have mangrove reforesting site on Krabi, Phuket, Trang and Nakhon Sri Thammarat in southern Thailand.

- BREATH OF MANGROVE (BM) (Japan)

With IMES cooperation, BM has performed Study tour which aim to consider earth environment and the North South problem through mangrove reforestation once a year in Southeast Asia since 1993.

- OISCA (Japan)

OISCA contributes to Humanity's environmentally sustainable development through a holistic approach emphasizing the interconnectedness of agriculture, ecological integrity, and the human spirit. About Mangrove reforestation, OISCA is carrying out “culture and the forest project” with Bangladesh, Philippines. OISCA reforest mangrove in southern Thailand with cooperating company.

- Asia Volunteer Center (AVC) (Japan)

“South-South cooperative mangrove reforestation project”

AVC reforests mangrove in Sarawak, Malaysia with local NGO and Indian NGO. AVC ties up two NGOs which base on developing countries and advance technical cooperation between them.

B)-b) Mangrove Reforestation as local activity

- The Congal Biological Research Station (Ecuador)

This center is seeking to develop alternative production projects that are socially acceptable and provide income for coastal inhabitants along Ecuador's western coastline. The Congal Station is now developing organic shrimp farming activities, native fish species production, as well as production of Iguana and other faunal species. Reforestation in degraded areas with native species-many of which are threatened-is an ongoing activity. Mangrove reforestation has been carried out on a large scale with communities during the last two years. Volunteers participate in all the above-mentioned activities, while supporting the presence of Ecuadorian university students.

- Philippine Rural Reconstruction Movement (PRRM),

PRRM is the largest development/environment NGO in the Philippines with over 500 staff and 20 provincial offices, and has a long history of work with local communities. PRRM works directly with mangrove reforestation, preservation and issues concerning shrimp aquaculture.

C)-a) Research about shrimp farming as international activity

- Industrial Shrimp Action Network (ISA-Net) (U.S.A)

ISA-Net is a global network of NGOs, grassroots organizations and policy advocates working to halt the adverse environmental and social impacts of shrimp farming around the world.

Composed of member NGOs from Asia, Africa, Latin America, North America, Europe and Australia, the network focuses on the production, trade and consumption of shrimp produced by aquaculture in tropical nations.

C)-b) Research about shrimp farming as local activity

- Program for Community Organization (India)

Liaising closely with community leaders and environmental activists networks, Nayak who establish P.C.O. has worked with for years. Nayak developed programs to restore on a small scale the balance between Kerala's land and ocean ecosystems about shrimp farming. Chief among these are mangrove reforestation and chemical-free shrimp aquaculture projects, managed

by community groups and located at sites throughout southern Kerala, India. The community groups become Program for Community Organization.

3) Educational Institution

B)-a) Mangrove Reforestation as international activity

- Tokyo university of Agriculture and technology (forest ecology laboratory) (Japan)

This laboratory is doing fundamental research of mangrove vegetation and soil at the abandoned shrimp culture pond site in the Philippines for reforestation.

4) Company

B)-a) Mangrove Reforestation as international activity

- Kansai Environmental Engineering Center Co.,(Japan)

This company is studying mangrove reforestation the abandoned shrimp culture pond site in southern Thailand with Thailand government and Kansai Electric Power Co., Inc. (Japan). The purpose is development of reforestation technology and silvofishery technology and measurement of the amount of CO₂ fixation.

- Tokio marine & Fire Insurance Company, LTD^{iv} (Japan)
“Uminomori (Marin Forest) project”^v

Celebrating the 120th anniversary of foundation on August 1, 1999, this company is carrying out the mangrove reforestation project which amounts to 3,000ha for by 2003 in Southeast Asia (five nations, the Philippines, a tie, Indonesia, Vietnam, and Myanmar, are planned) with OISCA and ACTMANG. Now, this company determined to continue this project for more five years. The reforestation area of the 2nd term is planning 2,000ha, and carries it out by six nations which added Fiji.

C)-a) Research about shrimp farming as international activity

- AQUACULTURE CERTIFICATION COUNCIL, INC.(U.S.A)

Aquaculture Certification Council, Inc. (ACC) is to certify aquaculture facilities that apply best management practices to ensure social and environmental responsibility, food safety and traceability throughout the production chain. ACC will also educate the aquaculture public regarding the benefits of these best management practices and the science-based technology that directs them.

C)-b) Research about shrimp farming as international activity

- EXPALSA (Ecuador)

Expalsa Corporation has specialized in the production and export of agricultural and aquaculture products of conventional, as well as organic lines. This company has been awarded with the BioSuisse(r) label, one of Europe's most demanding quality standards. Expalsa is unique in the sense that - from reproduction to expedition. All its reproduction centers, farms, feeding laboratories and export facilities are certified organic. There is 100 % traceability before and after shipment. This company is working environmental Programs at all the shrimp farm.

Conclusion

The main organizations involved in responsible action to prevent mangrove deforestation are NGO's and governments. Japanese NGO's have become increasingly specialized in mangrove reforestation and are also becoming involved in silvofishery in recent years. Foreign NGO's have been more involved in fisheries and the dissemination of information. Local NGO's are performing both mangrove reforestation and sustainable fishery. On top of this, some commercial companies have become involved with environmental responsibility in recent years. It is likely that this trend will continue and fishing or trading companies can have considerable impact on ecological and sustainable aquaculture.

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ENDNOTES

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- ⁱ Google deletes some comparable pages automatically from searching result.
- ⁱⁱ “mangrove reforestation” and “shrimp farming” in Japanese
- ⁱⁱⁱ Searching limited only for actor which has English or Japanese site.
- ^{iv} The name will change to Tokio Marine & Nichido Fire Insurance Co., Ltd.(Oct, 2004)
- ^v This is a social action project.