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KAGOSHIMA UNIVERSITY
RESEARCH CENTER FOR THE PACIFIC ISLANDS

CONTENTS

Front: Mangrove zone of Panaitan Island, Ujung Kulon National Park, West Java. It took one hour to walk throughout the wetland with many aerial roots of *Rhizophra* and *Sonneratia* for the study of inland forest.

(Photographed by Eizi SUZUKI)

Expecting More Extensive Research Activities in Island Spheres in the Pacific and Its surroundings

Akio INOUE

Director, Kagoshima University Research Center for the Pacific Islands

Kagoshima University Research Center for the Pacific Islands started afresh with new scope of investigation and objectives in April, 1998. This institution has been established on the basis of remarkable results obtained by the research activities of the Research Center for the South Pacific for 17 years. The new Center aims to promote interdisciplinary studies on islands and island-zones in Oceania and its surroundings. An island-zone, consisting of an area that encompasses a group of islands, is a space where networks of people, things and information are formed and interaction among islands take place. An aggregation of island-zones comprises an island-sphere. To accomplish its objectives, the research center sets two research divisions and five research projects as mentioned below.

Division I, Environment of Island-Zones, consists of these two projects.

Project 1: People-Nature Interactions

On several islands of some tropical or subtropical island-zones in the Pacific Ocean that show typical characteristics of an island-zone, the Center will survey relationships between human activities and nature and human adaptation to observed changes. Using data actually obtained during such field surveys, this project aims to clarify systems of interaction within an island-zone with regard both to human and natural aspects and to pick out and reconstruct theoretically general features there of the interactions between people and nature.

Project 2: Physical Geography

A great number of islands and island-zones, after the data of local physical geography are accumulated and put in order, will be physically classified. The accumulated data will contribute greatly to the construction of the geographical information system (GIS) concerning the tropical and subtropical island-spheres of the Pacific. In addition, study of island biogeography with emphasis upon the relationship between the endemic species on respective islands and the island types classified as mentioned above and upon modeling of modes of species dispersal from one to another island are also objectives of this research project.

Division II, Social Dynamics of Island-Zones, consists of these three projects.

Project 1: Social and Cultural Changes

By collecting and analyzing official historical records as well as written and oral traditions of the island-zones of Oceania and surroundings, this project aims to examine cultural codes that regulate island-zone societies, and to explicate an island zone society's strategic adaptation to change in natural and social environments by reconstructing cultural codes.

Project 2: Medical Approach to Human Ecology

Deterioration of living conditions in the South Pacific is often intensified by population concentration in urban and favorable coastal areas, and the penetration of the world wide market economy triggers a drastic change of diet and other habits. The objective of this project is to study living and dietetic conditions and

medical standards in an island zone of the South Pacific through a socio-medical approach.

Project 3: Political and Economic Functions of Island Nations in International Communities

Island nations in the South Pacific, relatively small in size and population, located far away from centers of the global economy, share the problem of limited resources except for the ocean. This project will study the island nations' survival strategies and their interaction with the nations outside the region in international political and economic arenas.

The Center is a Kagoshima University cooperative research and educational facility. Its activities are supported by the University's researchers and by researchers from other domestic and overseas universities and institutions. Research activities are carried out by tight cooperation with scientists of the concerned regions, and the results of the studies are combined to promote comprehensive understanding of islands and island-zones.

I earnestly hope that the new center, the Kagoshima University Research Center for the Pacific Islands, can achieve its objectives, dedicated to the development of Oceania and its surrounding regions, and further the welfare of all people through its research activities.

Political and Economic Functions of Japan in International Communities of Asia-Pacific Region

Eddy MANTJORO

Visiting Professor, Kagoshima University Research Center for the Pacific Islands

The new research center of Kagoshima University which was officially established in April 1998, emphasizes study of the natural and social environments of islands in the Pacific region. One of the five research projects that will be conducted in the coming 10 years is entitled: Political and Economic Functions of Island Nations in International Communities. This project will study the island nations' survival strategies and their interaction with the nations outside the region in international political and economic arenas. Considering that the center is established in Japan and by the Japanese government, it is advisable to look first at the political and economic functions of Japan within the Asia-Pacific nations community in which Japan is expected to take the lead position.

The political and economic functions of Japan in the international community of Asia-Pacific nations after 1939 were discussed in a textbook entitled *Indonesia in den Pacific,* written by Dr. Samuel Ratulangi (1989-1949). Today the name of Samratulangi State University commemorates his status as an Indonesian national hero, a physicist, and particularly as a native of Manado, north Sulawesi province.

Briefly, his book describes three hypotheses about what would occur after the second world war ended in the Pacific islands region in 1945: (1) On the moving of political and economic roles from Atlantic basin toward Pacific basin nations, (2) Japan to be the largest economy in the world and therefore to take the lead in economic functions for the nations in the Asia-Pacific region, and (3) United States to be the

political leader not only in the Pacific region but also all over the world, say as the *world's police.* The author visualized two main eras, i.e., on Atlantic basin era and a Pacific basin era. The Atlantic era began since Colombus' voyage around the world in 1496 up until the end of the 1960s. This era was characterized by the predomination of European countries in political and economic functions in international communities all over the world. This became possible because several nations in Africa, Asia, and Latin America were their colonies. The Pacific era would begin someday soon after the decline of European predomination in the region and would occur in the early 1970s.

Originally, the book was in Dutch. It was translated into English and Indonesian in the late 1970s. Since then, scholars began to analyze and came to the conclusion that all of his three hypotheses declared in 1930s became reality after 1970. This may be because he is a physicist and mathematician with exact ways of thinking. After 1970, some independent nations on the Pacific rim such as Japan, Korea, Taiwan, Hongkong and Singapore have entered the world of developed nations. The Pacific era has become more significant after 1980 when Japan took its place as a leading nation notably in international economic functions. The United States has the same capacity in economic power but spends a lot of her national budget for the defence infrastructure which is needed for her political leadership. Thus, Japan and the United States hand in hand took position as leaders in political and economical functions for the rest of the nations in Asia-Pacific region and the world as well.

Intrinsically, political and economic functions reinforce each other. The economy will grow and develop faster in climate of political stability and the reverse, economic crisis, will create political instability as recently happened in Indonesia and other Southeast Asian countries. This means that a nation leading in economic functions will also lead in political functions. Japan was in this position and many island nations in the Asia-Pacific region expected her to play this role seriously. This expectation by Asian nations began in 1981 when Malaysian Prime Minister Mahatir Mohamad launched his *Look East Policy* which means learning from Japan for industrialization and modernization. This policy immediately was followed by other nations in the Asia-Pacific region such as Indonesia, Singapore, Philippine, Vietnam, Micronesia. Recently, some Asia-Pacific nations want to develop their economies together (APEC) in the form of a *flock of flying wild geese pattern* in which Japan takes the lead, followed by the new industrialized economies, and then by China and the economies of other developing nations in the Asia-Pacific region.

In fact, the expectation arises not only from the developing economies of Asia-Pacific region but also from the United States and United Nations. When economic crisis attacked some Asian nations and Russia, the United States asked Japan to provide financial aid for the recovery of their economic illness. Meanwhile, the United Nations also urged Japan to extend her economic functions for economic development of poor nations in Africa. According to the Japanese foreign minister, political and economic development targets in Africa are 50% reduction in the number of people living in extreme poverty by 2015 and reduction of the high infant mortality rate. If fruits of such development are to be truly sustainable, the people of every nation should actively participate in their own development. Thus, Japan attaches importance to social development, including human rights and good governance and promote cooperation for the democratic development of developing countries. Therefore Asia-Pacific nations must promote balanced relationships according to their respective capacities in the international community.

Recently, the APEC forum has drawn up a draft guideline to promote cooperation among Japan and

the United States and the 19 other member economies in industrial science and technology toward ensuring sustainable economic growth and facilitating regional trade and investment. The draft guideline's of full text enshrines four principle to be respected by the APEC economies in promoting cooperation in industrial science and technology.

The four principles are: (1) Open access: all APEC economies should have the opportunity to participate in and contribute to regional multilateral science and technology activities on an equal footing and voluntary basis in accordance with their respective capacities and needs, (2) Balanced benefits: contributions to and benefits from collaboration should be equitable, balanced and in accordance with each partner's level of contributions and needs, with appropriate consideration given to the needs of developing member economies. Collaborative projects should have industrial relevance and contribute to sustainable, (3) Private sector participation: collaborative activities should ensure, whenever possible, the active participation of private sector companies, especially small and medium size enterprises and other institutions as partners in order to ensure the activities reflect technology trends and business needs and (4) Supportive regulatory framework: the need to adopt consistent and transparent approaches to standard and standard-setting activities to facilitate technological exchange and flows, protection of intellectual property rights, as well as fair and equitable contributions to and commercial benefits from projects, dissemination of information, and access to and use of the result of collaboration.

The draft guideline also specifies 12 areas of technology in which the APEC economies are encouraged to participate in joint research and development and other activities to boost cooperation. Included in 12 areas are (1) exploitation of natural resources, (2) resources management technology, (3) environmental and cleaner production technologies, (4) sustainable agriculture, (5) biotechnology, (6) advanced materials, (7) electronics, (8) transportation, (9) information (10) energy, (11) communication, (12) emergency preparedness and climate prediction.

The APEC vision for the 21th century is of a dynamic and prosperous Asia-Pacific region built on the development and application of industrial science and technology which support economic growth and improve the quality of life while safeguarding the environment and the natural resources necessary for economic sustainability. Successful development, application and commercialization of industrial science and technology will depend upon the ability of APEC economies to create strong, open innovation systems and to work cooperatively to catalyze the development of strong, sustainable science and technology network and partnerships.

Facilitation of networks and partnerships is the principal vehicle through which the Asia-Pacific nations can successfully find and implement solutions, based on science and technology cooperation, to the challenges posed by rapidly changing economies. In this course, Japan is expected to lead in a *flock of flying wild geese pattern,* and it is expected also that the rest of the Asia-Pacific nations should join their contributions to Japan's in international political and economic forum. In this context, the Kagoshima University Research Center for the Pacific Islands may play a role in providing science and technology information from studies of island communities of Asia-Pacific nations.

A Report on the Fifth Islands of the World Conference, International Small Islands Studies Association

Toru AOYAMA

Kagoshima University Research Center for the Pacific Islands

KURCPI's Professor Kazutaka Nakano and the present writer visited the Republic of Mauritius, a small island state in the Indian Ocean, to attend the Islands of the World Conference, organized by the International Small Islands Studies Association (ISISA) from 1 to 5 July 1998 at the University of Mauritius. The main theme of the conference was "Small Islands in the Third Millenniu—Problems and Prospects of Islands Living". Nearly 120 people from more than twenty countries participated in this conference.

Although the Islands of the World Conference had been held four times before the Mauritius conference since 1986, this is the first time members of KURCPI attended the conference. We went to Mauritius in great expectation and excitement, because the theme of the conference is greatly relevant to the objectives of KURCPI. KURCPI is concerned about studies on an "island zone", a group of islands where networks of people, things and information are formed and interaction among the islands take place. Since KURCPI's research field is the Pacific Ocean, which comprises many small islands, we are naturally interested in the international trends in the studies on small islands. Our expectations were rightly answered by the participation in the conference.

The Islands of the World Conference is an international gathering of researchers who are interested in matters concerning small islands. It was held for the first time on the island of Victoria, Canada, in 1986, followed by the second on Tasmania, Australia in 1988, the third on the Bahamas in 1992, and the fourth on Okinawa in 1994. It is at the fourth conference that the formal foundation of the International Small Islands Studies Association took place. The Mauritius conference is therefore the second one to be organized by ISISA.

The objectives of ISISA are defined in its foundation charter as follows:

1). To advance the study of islands;

2). To encourage free discussion on small island related matters such as islandness, smallness, insularity, resource management, the environment and the culture and nature of island life;

3). To promote the active participation in the Association's affairs of members from small islands.

The objectives of the association, although known in Japan as "Kokusai Tosho Gakkai", which literary means the "International Association for the Studies on Islands", clearly indicate its main interest lies not just in islands in general but primarily in small islands.

The first president of the Association, Dr Theo Hills of McGill University, Canada, was a geologist, whereas the second president, elected in the Mauritius conference, Dr. Grant McCall, is an Australian anthropologist at the Centre for South Pacific Studies, University of New South Wales, Australia. I would like to welcome the result of the presidential election, for it is appropriate to the objectives of an association whose scope is truly a global one.

The Mauritius conference was jointly supported by the University of Mauritius, the Mauritius Institute of Education, Mahatma Gandhi Institute and the Tertiary Education Commission, all in Mauritius, and the International Scientific Council for Island Development (INSULA) and the United Nations Environment Programme (UNEP). According to the conference committee, the number of the participants was one hundred eighteen; 33 from Mauritius, 5 from other Indo-African region, 14 from Oceania, 13 from Australia and New Zealand, 5 from Japan, Central America and Caribbean region, 11 from North America, and 28 from Europe. Among the Japanese participants was Professor Shunsuke Nagashima of Nara Women's University, a founding member of the newly formed Japan Society. of Island Studies (Nihon Tosho Gakkai).

The program of the conference was divided into eight sessions with themes as follows: Education for Sustainable Development, UNEP on Island Systems Management, Islanders and Political Economy, Islands on the Global Scene, Knowledge Assessment and Telematics, Social and Cultural Issues in Islander Living, Islanders and the Ocean, Remembering the Dodo: Small Islands and Biodiversity-The Balance Sheet in the Year 2000. Nearly eighty papers were presented and most of their arguments were incorporated in the Mauritius Declaration announced at the closing ceremony (See the attached text).

To understand the arguments, however, it seems convenient to introduce a model of island systems and island zone which I adopted, with modification, from the model that has been discussed and proposed by the Project Committee of KURCPI (See the figure). In this model, an island is divided into the Human System, Nature System and Interactive System between human and nature. Thus we see an island as a complex of the three systems. Furthermore, an island interacts with other adjoining islands, forming a space which we call island zone, and an island zone itself in turn interacts with the world outside the island zone. In this way, an island is seen not an isolated entity but a field of multi-layered human-nature interactions. Also I put the numbers in the figure indicating relevant clauses of the declaration to help understand the implication of the arguments, although this mapping is approximate only and not conclusive at all. In the following report, I will briefly touch upon main arguments in the declaration using the model as the point of reference.

In the Nature System, biodiversity, or the diversity of life forms at the levels of gene, species and environment became the central topic. This concept became widely known at the Rio De Janeiro Earth Summit in 1992. The issue is all the more urgent and important for an island environment because the biological environment on an island is highly vulnerable to environmental changes caused by human activities and to the invasion of alien species. It must be also noted that many environmental problems are practically beyond the control of island societies, as is evident in the issues of the global climate change and sea level rise caused by the greenhouse effect. In the declaration, clauses 4, 6, 8, 9, 13 and 14 are concerned mainly about the Nature System.

The keyword in the Human-Nature Interactive System is sustainable development, another concept advocated in the Earth Summit. It is a policy objective whereby environment is acknowledged as the basis of economy and balance is kept between development and the conservation of environment and natural resources. Clauses 2, 16 and 17 are related to this issue.

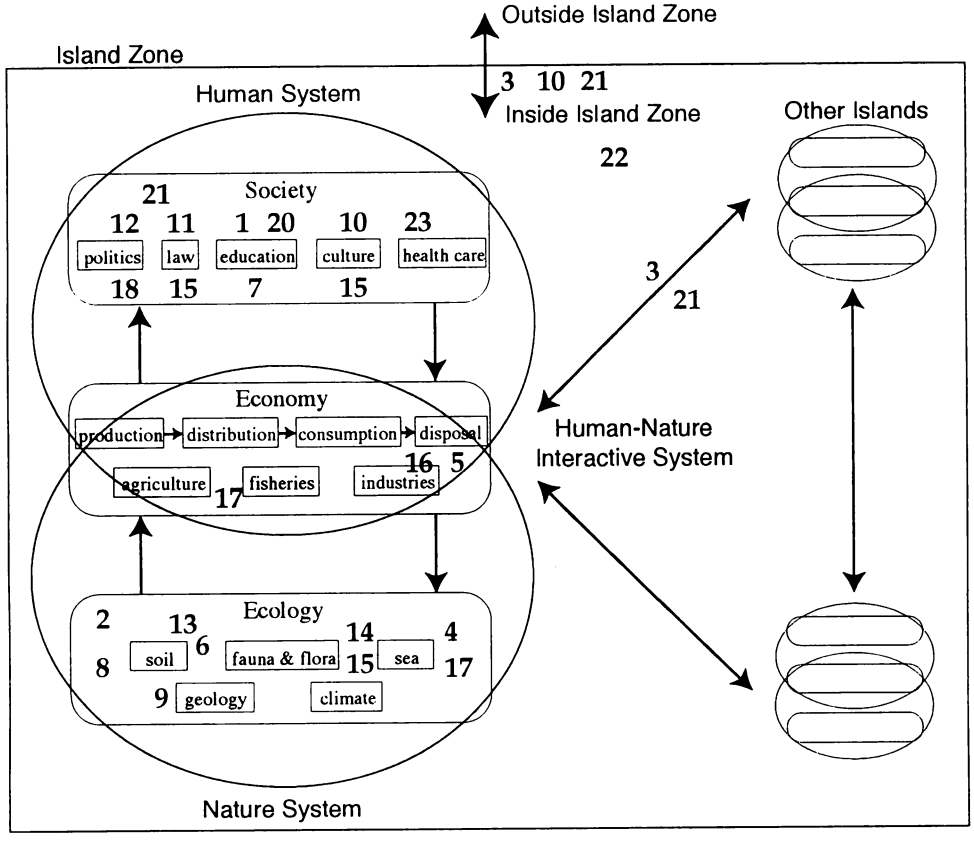
The Human System involves various issues on politics, economy and culture, all of which are interconnected with biodiversity and sustainable development. Clauses 1, 5, 7, 11, 12, 15, 18 and 23 are

mostly concerned about these issues.

Finally, the relation between an island zone and the outside world is dealt with in clauses 3, 10, 19, 20 and 21.

The declaration was originally meant to be an outcome of the eighth session dedicated to the issues on biodiversity, which was sponsored by UNEP and independent from the conference itself. Naturally the original draft exclusively focused on the conservation of biodiversity. It only became more comprehensive toward the announcement of the final version at the closing ceremony, including the topics of other sessions. This process made the declaration truly representative of the whole conference, though at the same time undoubtedly made it less focused.

I found the issues discussed in the conference are greatly relevant to the objectives of KURCPI and stimulating for us in deciding on our research activities. Naturally there should be more interaction between KURCPI and other members of ISISA. In his inaugural speech in July 1998, the president of the Japanese Society of Island Studies, Professor Yoshimasa Yamashina, stated that the studies of islands must advance from the phase of description to that of comparison and then to that of understanding what an island really is. I am convinced that far as we continues our academic endeavor with this statement in mind, there will be much more we can contribute to the studies of islands.



Model of Island System and Island Zone

INTERNATIONAL SMALL ISLANDS STUDIES ASSOCIATION (ISISA)
ISLANDS V INTERNATIONAL MEETING JULY 1998

THE MAURITIUS DECLARATION

The participants at the ISLANDS V Conference held in Mauritius July 1-5, 1998 note that small islands face special challenges in view of their relatively small size, limited natural resources, peripherality to centres of decision making, degree of exposure to forces outside of their control such as globalization and climate change and sea level rise, their small open economies, fragile ecosystems and vulnerability to natural disasters. These issues were discussed during the conference.

In order to help small islands meet the challenges of the new millennium and achieve sustainability.

We recommend:

1) that education systems in small islands must have social, cultural, environmental and economic sustainability and equality of opportunity as major objectives.

2) that small islands adopt the Island Systems Management Strategy (ISM) to take into account the interactions of all the components such as the various eco-systems, development plans and available resources to achieve sustainability.

3) that ISISA and the stakeholders in small islands promote the use of the Internet and the World Wide Web as well as more traditional forms of communication to facilitate access to information to support the sustainable development of small islands.

4) that as a matter of urgency, islands adopt an Integrated Coastal Zone Management Strategy for the sustainable use of coastal zone resources because the fragile coastal zone forms such an important ecosystem in delicate equilibrium. These zones include the coral reefs which must be protected not only for the benefit of tourists but also for their inherent biological worth which includes their value as habitat for a variety of marine fauna.

5) that small islands diversify their economies to reduce their high dependence on one dominant product or industry, their vulnerability to decisions made off-island and to maximize islanders' real influence on their own economic development.

6) that programmes aimed at both the protection and improvement of biodiversity which include efforts not only to protect all existing flora fauna and ecosystems in general but also improving public awareness of biodiversity.

7) that governments make it a priority to promote gender equality in sustainable development planning to ensure the full use of the human resources of small islands.

We further recommend:

8) that the problem of capture, distribution and conservation of fresh water resources be given far more serious attention than it has in the past.

9) that the Kyoto Protocol be implemented as a matter of urgency because islands are increasingly threatened by cyclones, hurricanes and sea level rise due to climate change resulting from greenhouse gas

emissions.

10) that islanders speak and others hear the unique and positive cultural experiences of island living through literature and other forms of creative expression.

11) that legislation to support sustainable development be enacted and enforced by the governments of small islands.

12) that nation states with islands consider the special features of those jurisdictions in the formation of national and regional policies.

13) that small island states complete comprehensive national Biodiversity Strategy Action Plans.

14) that national Alien Species Action Plans (ASAP) to prevent the introduction, eradication and control the spread of alien plants, animals and micro-organisms in the fragile small island environments to be developed.

15) that comprehensive easily accessible databases be developed and maintained to provide information to support sustainable development. Examples include:

15.1) state of biodiversity identifying vulnerable and endangered ecosystems and species

15.2) traditional ethnobiological knowledge

15.3) land use

16) that small islands promote the development of the smaller scale technologies required to increase their ability to recycle waste such as water and paper.

17) that the appropriate international bodies assist the small island states in monitoring and protecting their Exclusive Economic Zones (EEZ).

18) that the human dimension be included in the formulation of plans policies and legislation.

19) that study groups be established so that work can continue during the interval before the next conference.

20) hat governments and teacher training institutions of small islands develop teacher training programmes which assist and encourage teachers in using appropriate new technologies such as the Internet for teaching and learning.

21) that governments encourage the use of the Internet by private individuals for self-directed learning and the sharing of information.

22) that small islands explore alternatives such as regional groupings to develop appropriate, island friendly economic development policies to cope with pressures to open their economies to globalization, flows of capital and liberalized free market systems.

23) that efforts be made to raise awareness of the impact of modernization on health in small islands and to encourage governments and communities to take an integrated approach to improving health.

Mauritius 4 July, 1998

Note: The clauses in the original declaration are not numbered to avoid a false impression that they are arranged according to priority. In this reprint, however, they are numbered in ordered to facilitate the reference to the clauses.

Research Seminars

October 26, 1998

A Report on the Fifth Islands of the World Conference, International Small Islands Studies Association

Toru AOYAMA

Kagoshima University Research Center for the Pacific Islands

December 7, 1998

Socio-economic life of Island Communities in Eastern Indonesia:With Particular References of Sangihe Islands

Eddy MANTJORO

Visiting Professor, Kagoshima University Research Center for the Pacific Islands

Sangihe regency or prefecture is composed of 77 islands of which 5 islands are small in size and 72 are tiny islands. It is located in eastern Indonesia about 5° North of the equator on the western Pacific rim and connects the north Sulawesi peninsula to the southern part of the Philippine islands. Their socio-economic life can be traced through the practice of marine tenure system, capitalization of production, fish marketing, catch sharing and consumption patterns.

Historical notes indicate that since the 1520s up to the end of 1960 the Sangihe islanders recognized only the island and the surrounding sea as belonging to the community living on the island (*Communal property*). After 1970 some communal property was divided into individual household property (*Private property*). Sea water outside these two types of property was considered to belong to nobody (*Open access*). However, legally, all land and waters within Indonesian territory is state property in status but some island communities continued to practice a communal property system. This was managed, based on the traditional sea tenure system with the *seke* fishery as its pivot organization.

The capitalization of production in terms of providing fishing gear and technology remains predominantly by communal practice, i.e., group mutual providing (55%), self made (30%), patron-client basis (15%), and bank credit (0%). Capital borrowing from banking institutions remains strange to the islanders in this region.

Fish marketing on a barter basis with other agricultural foodstuffs and other goods is still common. Before 1990, most of the catch was sold on consignment basis to the nearest town fish market by fishers themselves but the fishers always lost money. Therefore, later they trusted the fish traders to sell on the behalf.

There are four types of catch share system found in Sangihe island communities. These are: (1) Equal share on communal basis: catch is not shared only among the fishers who participate in the fishing operation but embraces also some community members such as thevillage head, teachers, priests, widowers, orphans, and aged people, (2) Equal share on a household basis: catch is distributed to all household members of fisher groups irrespective of their participation in fishing operations, (3) Equal share on capital ownership basis: only fishers who participated in fishing operations will get a share, (4) No share: valid for individual fishers who operate their own fishing gear such as angling and trap.

In general, consumption patterns polarized into two main patterns, (1) *eat for life* and (2) *life for eat.* The first embraced those households that think of foods as basic necessities for life. The second is those households familiar with exaggregate consumption. Ultimately, both of these patterns lead to the same

result, i.e., to lower level of living conditions and poverty. The difference is that the former tends to preserve islands' natural resources and the latter prone to exhaust.

January 11, 1999

Filariasis in Samoa—Backgrounds of Endemicity—

Eisaku KIMURA

Aichi Medical University

Filariasis is a parasitic disease transmitted by mosquitoes. The adult parasites live in the lymphatic system, and reproduce microfilariae (mf hereafter) which are circulating in the blood. Mosquito vectors suck mf and spread the disease. Not a few of the infected persons will experience high fever attacks repeatedly and eventually suffer from misery of disfiguring symptom, elephantiasis. There are 120 million people infected in the world, of which 43 million suffer from clinical symptoms. The importance of filariasis is due not only to the severity of disease but to the enormous size of economic loss.

The filarial parasite in Samoa, Fiji, Tonga, etc. is slightly different from that found in the other areas in the world, though they are all under the same species, *Wuchereria bancrofti.* Generally, mf appear in the blood only at night, but in Samoa and some islands, mf are seen anytime in the day, implying that the transmission will occur 24 hours a day. In Japan, the transmission was limited only at night in the summer, whereas in Samoa, it is anytime all through the year.

The 24-hour transmission in Samoa is maintained by two species of mosquito vectors, *Aedes samoanus,* night biter, and *Aedes polynesiensis,* day biter. The former breeds in a water pool made in leaf axils of *Pandanus* and *Freycinetia.* The leaves of *Pandanus* are essential commodity to make a floor mat and people plant it around their residence, increasing unknowingly the sites for mosquito breeding. *Ae. polynesiensis* breeds in coconut shells, crab holes, bottles, tin cans, etc. Untreated rubbish which is increasing as the life style in Samoa changes will provide countless sites for breeding. In Samoa and many other islands, proper garbage disposal is an urgent and very serious subject.

Supported with subsidies by the Government, the construction of water-sealed toilets became accelerated in 1970s. However, water supply system was not developed at the same time. In order to flush toilet, people had to keep a 44-gallon drum to collect rain water, which is an ideal breeding site for *Ae. polynesiensis.* In some study villages, about 70% of the total mosquitoes were estimated to breed in such drums.

There are two approaches to control filariasis. One is the treatment of infected persons who are the source of infection; the other is the control of vector mosquitoes. Chemotherapy with diethylcarbamazine (DEC) is reported to be particularly effective. DEC is given at 6mg per kg of body weight, and in Samoa, mass treatments of the whole population (160,000) were repeated once yearly or once per two/three years. So far, 8 such mass treatments have been completed and filariasis is now under control.

Recent Publications of Kagoshima University Research Center for the Pacific Islands

South Pacific Study

Vol. 19, No. 1-2 (1999)

Articles:

Tiru K. JAYARAMAN. Private Sector Development and Competition in the South Pacific: A Case Study of Vanuatu.

Muhammad ASHFAQ. Further Studies on Pest-host Interaction in Imp of *Mythimina separata* (Walk.).

Naohiko WATANUKI and Gunzo KAWAMURA. A Review of Cuttlefish Basket Trap Fishery.

Mariappan PREMANATHAN, Kandasamy KATHIRESAN and Hideki NAKASHIMA. Mangrove Halopytes: A Source of Antiviral Substance.

KAGOSHIMA UNIVERSITY RESEARCH CENTER
FOR THE PACIFIC ISLANDS
1-21-24, Korimoto, Kagoshima 890-8580, JAPAN
TEL: +81-99-285-7394
FAX: +81-99-285-6197
E-mail: tatoken@kuasmail.kuas.kagoshima-u.ac.jp
WWW Homepage URL: http://bio.sci.kagoshima-u.ac.jp/kurcsp/

鹿児島大学多島圏研究センター
郵便番号 890-8580
鹿児島市郡元1丁目21番24号
電 話 099-285-7394
ファクシミリ 099-285-6197