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**KAGOSHIMA UNIVERSITY
RESEARCH CENTER FOR THE PACIFIC ISLANDS**

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Oceanic Societies, Governance and Sustainable Development

Joeli VEITAYAKI

Kagoshima University Research Center for the Pacific Islands
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Oceanic Societies, Governance and Sustainable Development are pertinent issues that need to be better addressed in the resource management courses, programmes and research that are offered in training, education and research institutions serving island spheres such as Kagoshima University (KU) and the University of the Pacific Islands (USP). These issues are not new but require new assessments and more appropriate, innovative and logical attention if the islands people are to contribute toward the maintenance of a healthy ocean that sustains their livelihoods and aspirations.

This is no small feat because it's a responsibility that demands a great deal of resources and commitment. Small Island Developing States in the Pacific are custodians over 12 percent of the world's oceans and must be innovative and act strategically to complement their severe lack of capacity to sustainably manage their ocean space and resources. The Pacific Islands and Japan share the Pacific Ocean, the world's largest and arguably last remaining source of healthy tuna fisheries, unique habitats and the likely source of great mineral deposits.

Oceanic Societies have peculiar conditions, characteristics, needs and aspirations that need to be effectively incorporated into attempts to improve their lives in these islands. This requires good governance, which refers to how people organise themselves to realistically address the challenges associated with effective change in human behavior towards their resources, themselves and their environment. This then necessitates the pursue of sustainable development, which is the elusive goal of bringing about improvements to people's lives as well as maintaining the integrity of the ecological environment to provide the critical support services.

In this short reflection I share some ideas that I feel can be useful as we proceed in our attempts to ensure that the islands and the communities on them are safeguarded in the future when environmental, economic and social and cultural conditions change and possibly worsen.

Oceanic societies are expected to face even greater challenges to support and maintain their communities, manage their resources and use the avenues available for participation in modern living. Given their isolated locations, small resource base, and vulnerability, oceanic societies need to be innovative in the choices they make. A lot can be achieved if oceanic societies reflect on their positions today and where they may have been if events have turned out differently or if different choices were made. Will the trading relationships they have today be maintained? What about the existing regulations guarding people's use of their resources? Are the systems in place adequate? Would people do things differently and why? Can new development alternatives be pursued? What are the main problems for the people today and how can these be addressed?

Island communities have many strengths. They have traditions, knowledge and practices that allow them to survive in the islands for centuries. They are more comfortable in the water and can sustain themselves from their surroundings. They know the safe as well as the vulnerable parts of their environment. The people also have practices that ensured their survival. They have social and trading relations, conservation methods, resource management practices and even resettlement arrangements. These are some of the very ideas we are trying to perfect today. Perhaps it would be wise for current generations to study these traditional methods and proceed to improve and incorporate them.

Governance is important because for oceanic societies to have a future, changes need to be made and governance has to influence the way people carry on with their lives. It is a foregone conclusion that many islands can no longer sustain their societies given the current state of affairs. Resources are depleted, the returns from the produce are not coming back to the islands, the wastelands are getting larger and the people are getting more and more numerous. Even in instances, when policies, strategies and actions have been stylistically formulated, these have not been followed. Why aren't people changing? Why are they behaving like there is no problem to address? Why aren't people doing as they know they should? Of course, the type of governance in the past cannot be wholly tolerated. Contemporary ideals like democracy, human rights, equality, freedom, all affect the implementation of governance.

This brings in the issues of how to limit the use of resources to sustainable levels, enforcing the conventions, laws and regulations, culturing values that emphasise respect for each other and the environment, and designing good appropriate blueprint for all. Political will is important because governance require leadership at all levels. Governance must be based on the fact that development and all human activities rely on the natural environment that is beginning to show the impacts of human abuse and wasteful use.

Lastly, sustainable development is a system of change to improve local living conditions where by the exploitation of environmental resources, the focus of investments, the orientation of technological development and institutional changes are made to ensure the securing of present as well as future needs (Cicin-Sain 1993:15–6¹). Sustainable development emphasises the improvement of the quality of life of people (assuring equity in the distribution of benefits flowing from development) and development that is environmentally appropriate, making proper use (and sometimes non-use) of natural resources and protecting essential ecological processes, life support systems and biological diversity' (Cicin-Sain 1993:17). Thus, sustainable development 'entails a continuous process of decision-making in which certain questions are asked and whereby the "right" choices and decisions are made. There is never an end-state of sustainable development since the equilibrium between development and environmental protection must constantly be readjusted' (Cicin-Sain 1993:15).

Sustainable development is about decision making and is therefore a social issue. The hope is that with all the data and evidences now available, people would make logical decisions. This is not being done and we need to find the reasons. Why are some countries still using old and damaging technology when new, cheaper and safer alternatives are available? Why are exemptions powers still entertained when the ruling has been made. Why are people not making the correct decisions? It has been agreed to globally that integrated management is the way to manage marine activities, why is this not done at the national and local levels. The principles of precautionary approach, adaptive management, iterative learning and sustainability are noble but are not used in public policy and development programmes.

These are the challenges that teaching, education and research institutions like KU and USP need to address. The good thing is that it is being tried in bits and pieces here and there. The calling is for island institutions to collate these information and use them to formulate options for addressing these issues, conduct pilot studies and mainstream their findings and approaches. This is the only way to start the little changes that will be needed to ultimately create the necessary wholesome alterations to the manner in which societies, governance and sustainable development are addressed in islands and continents throughout the world.

Symposium

Islands Forum • International Symposium, 16th December

"Strategy on the Asian-Pacific islands and Kagoshima Region Outskirts, Interdisciplinary and International Contribution- "

In Kagoshima pref., there is a NGO which plays role initiative grass roots exchanges in the Asia region. There is a lot of research materials accumulated at Kagoshima University. These are not only independent research but also the result of interdisciplinary team research/practical research, indirect or direct technical cooperation, understanding for international exchanges (that is effect derived from investigate and research activity), or concrete examples on bringing up talent/community development. Of course, there are so many examples contributed by Kagoshima prefecture office, local public organizations, NGOs and corporations.

Recently, businesses and government related organizations, for example, Japan International Cooperation Agency (JICA), local public organizations, NGOs; universities are working in close cooperation with one another. For strategy on international and local contribution in Kagoshima, it is so important that we look back at those past achievements, connect them and consider those prospects deeply. So, we do consider the Asian-Pacific islands as a target of this symposium. The Asian-Pacific islands are from Kagoshima, which is located at the outskirts of Japan, to islands partly toward the south through the Ryukyu Islands Arc, and also the sea area next to wide Asia region and the Pacific.

Resources and Prospects of Kagoshima University Development History in ASEAN Region, and Possibility of Present and Cooperative Development

TAKAMA Hidetoshi (Center for International Planning, Kagoshima university)

Since early 1980s, I have been involved in Development in Asia and South Pacific areas. I moved to this position at KU last May. Before then I had worked for technical cooperation among ASEAN countries and Japan. This time I would like to discuss this title with my view which I have conceived through my carrier in Asia.

KU is characterized as a best study/research place of ocean/island sciences throughout Japan because of its blessed location. Although KU has made much collaboration with ASEAN countries either through receiving students from that area or through sending our personnel to that area, KU managed a large scale project at Malaysia University of Agriculture (UPM) with JICA early 80s. In the project KU sent 9 experts and received several Malaysian young counterparts. KU sent back those students with higher education and degrees to UPM. Today, those ex-KU students actively worked for various universities throughout of Malaysia. Following this project, Phase 2 project at UPM started in 1998 for 5 years and again KU sent its teaching staff as experts.

However, now not many people know about this project among KU despite its good old day. This is probably because 1) there may be no continuity after its termination such as lack of a proper follow up system, and 2) there may not have been enough information shared in KU.

Turning our eyes to ASEAN, its socio-economic integration has today been accelerated greatly. Especially GMS, in shorten Greater Mekong Subregion, initiated by ADB is expected to be one of the most prosperous areas in ASEAN. Moreover, BIMP-EAGE Initiative area including Brunei, North/East Indonesia, Eastern Malaysia and Southern Philippines, is also expected to be a possible target of regional development after GMS. That area has a plenty of resources with bio-diversity. However this kind of regional integration

borne various problems crossing borders but in other words they are development issues.

Kagoshima University is one of large scaled national universities with 8 faculties and it is serving to its region i.e. Kagoshima Prefecture as well ASEAN region. It is sure that KU can challenge the development issues in ASEAN through its integrated approach. Research Center for the Pacific Islands should have its initiative to promote integrated projects. I am sure that it is able to do so.

Grass Roots Exchanges in Asia Region and Kagoshima

KUWAHARA Sueo and OZAKI Takahiro (Faculty of Law, Economics and Humanities Kagoshima University)

A year ago we started a collaborated research on bullfighting. From our research we found that such peripheral prefectures as Okinawa, Kagoshima, Ehime, Shimane, Niigata and Iwate have been directly connected with each other through bullfighting both in individual and small municipality levels, and actively promoting grassroots exchange by holding National Bullfight Summit Meeting every year. Furthermore this grassroots exchange through bullfighting looks to have an edge of going around the world by being connected to the Korean municipalities which have been regularly holding bullfighting. This is a totally new perspective against the vertical perspective of Center-Periphery, which has long been a dominant perspective of City and Rural Area. Thus we got the perspective of Periphery-Periphery Network. If we take a look at Kagoshima with this analytical framework, we could realize anew that Kagoshima was a pioneering prefecture for developing this Periphery-Periphery Network by initiating Karaimo exchange program in 1980s and Karamojia project in 1990s. That is, Kagoshima was a far front runner in grassroots exchange in Japan. In this presentation we try to discuss on the possibility of the grassroots exchange in Kagoshima in relation to Asia in global age by reevaluating Karamojia project from the viewpoint of Periphery-Periphery Network and the examination of the grassroots exchange by Bullfighting Culture among the peripheral areas.

International Contribution by Practical Use of Community-Based Island Medicine of Kagoshima

TAKEZAKI Toshiro (Graduate School of Medical and Dental Sciences, Kagoshima University)

Kagoshima University has contributed to community medicine in islands of Kagoshima, and conducted field study there. Department of International Island and Community Medicine is conducting a JICA training course, Community-based Island Medicine that provides opportunities to improve quality of medical service by development of human resources who will engage community medicine in island and remote area through utilizing various experiences in such community health service and research that Kagoshima has conducted so far under cooperation of administration and university. This 2-month course has been annually conducted since 2002, and seven doctors of the Philippines and Indonesia have participated it.

Development and Prospects Through Research of the Tropical Rain Forest Zone

YONEDA Tsuyoshi (Faculty of Agriculture, Kagoshima University)

A long-term research project on nature study has been conducted in Sumatra since 1980. The study aims to clarify the ecological structure in this area under a tropical rainforest climate. Major research area is West Sumatra being Andalas University as a counterpart. It is

an interdisciplinary project covering not only biology but also soil and social sciences. Around two hundred Japanese scientists were dispatched and fifty Indonesian scientists were invited in total during the period. Our experience about promoting the long-term research will be introduced first, and then perspectives of the international research project under Kagoshima University will be addressed through introducing the pilot project at the South-west Islands of Japan under the sub-tropical climate.

Collaboration on Marine Botany in Kagoshima University with Asian and Pacific Countries

NORO Tadahide and TERADA Ryuta (Faculty of Fisheries, Kagoshima University)

Since the 1960s, academic collaboration on marine botany has been conducted in Kagoshima University. Emeritus Prof. Tsuyoshi Tanaka did taxonomic studies with Vietnamese marine botanists in the 1960s and reported several new species from South Vietnam. Former Director of R.C.S.P. in Kagoshima University, Prof. Inoue Akio, studied fish poisoning, so called Cigatera, in Tahiti, French Polynesia and found that the dinoflagellate *Gambiediscus* produced the toxin. Afterwards, this dinoflagellate was also reported in many Pacific countries. In the 1980s, Prof. Noro started the taxonomic and ecological studies on brown algae genus *Sargassum* in the Philippines and extended his study in Australia, Indonesia, Thailand, Vietnam, Malaysia and Micronesia. Dr. Terada also collected many specimen of *Gracilaria* in Hawaii, Vietnam, Thailand and Indonesia and now revising the taxonomy of the genus. In the Pacific countries, *Gracilaria* and *Eucheuma* are economically important algal fishery products. For example, *Eucheuma* is exported as a source of the marine colloid named carrageenan. Culture of *Eucheuma* is one of the important fishery industry in these countries. The Indonesian Ministry of Education nominated Kagoshima University as the counterpart for the training programme of the marine botany and other fishery sciences for the vocational high school teachers in their country.

Islands Forum • International Symposium, 3rd February

"Climate Changes and Globalization -Environment and People's Life in Pacific Islands- "

Many observers have pointed out the dangers of future, that the Earth's surface temperature has risen about 0.5 °C in the past century and the phenomenon was accelerated during the past two decades. There is stronger evidence that the most of the warming during the last half century was attributed to human activities. The Pacific island countries are subjected to the impacts of the global warming caused by excessive fossil fuel usage and deforestation of the Earth. In addition, the economic globalization might exacerbate natural resource depletion and depreciate Pacific island environments. In this international symposium, we will focus peoples life and environment from the view point of the climate changes and globalization.

- 13:30 Welcomes: YOSHIDA Hiroki (Kagoshima University)
- 13:35 Symposium introduction: KUWAHARA Sueo (Kagoshima University)
- 13:45 Addressing Climate Change and Sea Level Rise in the Pacific islands
Joeli VEITAYAKI (University of South Pacific, Fiji • Kagoshima University)
- 14:10 Tropical Cyclone Behavior in a Warmer World:
Mark A. LANDER (University of Guam, USA)
- 14:35 Small Island Sustainability Risks in Chuuk Atoll -Climate Change and Globalization-

- Syunsuke NAGASHIMA (Kagoshima University)
- 15:00 Seeking Safety from the Storm: The Impact of Climate Change on Inter-Island Relations and Human Migration in Micronesia.
Donald RUBINSTEIN (University of Guam, USA)
- 15:25 Korea South Pacific Ocean Research Center and its Effect on Local Community
Heung Sik PARK (Korea Ocean Research and Development Institute)
- 15:50 Coffee
- 16:05 Panel discussion: Chair, KUWAHARA Sueo·HIDAKA Tetsushi (Kagoshima University)
- 16:50 Closing: TOMINAGA Shigeto (Kagoshima University)

Addressing Climate Change and Sea Level Rise in the Pacific Islands

Joeli VEITAYAKI (University of the South Pacific, Fiji·Kagoshima University)

Climate change and sea level rise are no longer a future phenomenon, they are taking place now and require more concerted effort. The situation in the Pacific Islands is even more serious because even though these small islands have done little to cause the problem and can do little to address it, they will be the first victims. Furthermore, the options for these islands are restricted by their small sizes and lack of resources.

However, Pacific Islanders have extensive experience living in these small islands for generations and can offer worthwhile lessons on how to address climate change and sea level rise. In this presentation, I will examine some options for addressing the phenomenon in the Pacific Islands.

A strategy for addressing the challenges of living in a world affected by climate change and sea level rise will be unveiled. As always, innovation and good plans and strategies will influence in the ability of Pacific Islands to address this problem. Addressing climate change and sea level rise in the Pacific Islands, has to be appropriate for these islands, which means that the solution has to be found from within the small islands. Some areas where changes can be considered include appropriate coastal protection, adaptation in land use and living practices and new options such as aquaculture, sustainable living at community level and new crops and varieties.

Tropical Cyclone Behavior in a Warmer World

Mark A. LANDER (University of Guam, USA)

The surfaces of most tropical oceans have warmed by 0.25 – 0.5 degrees Celsius during the past several decades. The Intergovernmental Panel on Climate Change (IPCC) considers that the likely primary cause of the rise in global mean surface temperature in the past 50 years is the increase in greenhouse gas concentrations. The global community of tropical cyclone researchers and forecasters as represented at the 6th International Workshop on Tropical Cyclones of the World Meteorological Organization recently released a statement on the links between climate change and tropical cyclones.

During the past decade, there have been a number of high-impact tropical cyclone events around the globe. These include 10 landfalling tropical cyclones in Japan in 2004, five tropical cyclones affecting the Cook Islands in a five-week period in 2005, Cyclone Gafilo in Madagascar in 2004, Cyclone Larry in Australia in 2006, the first-ever documented hurricane in the South Atlantic Ocean in 2004, and the extremely active 2004 and 2005 North Atlantic tropical cyclone seasons – including the catastrophic socio-economic impact of Hurricane Katrina.

The participants of the IWTC 6 worked out a comprehensive statement providing the

latest guidance and consensus views of the tropical cyclone community on the effects of climate change on the behavior of tropical cyclones. Common questions asked by the media and the public (and addressed in the statement) include:

Will the basin and global numbers of tropical cyclones go up in a warmer world?

Will the intensity of tropical cyclones increase in a warmer world?

Will the formation regions of tropical cyclones expand in a warmer world?

Will tropical cyclones retain their destructive potential further into the midlatitudes in a warmer world?

Are we already seeing the effects of climate change in the behavior of tropical cyclones?

This talk will provide a detailed description of the observed behavior of tropical cyclones over the past 30 or 40 years, and will address the possible changes to tropical cyclone behavior that may occur in a warmer world. The consensus statements concerning tropical cyclones and climate change made by participants of the 6th International Workshop on Tropical Cyclones (IWTC-VI) are presented and critically analyzed in this talk from the perspective of an active participant in the drafting of those statements.

Small Island Sustainability Risks in Chuuk Atoll - Climate Change and Globalization - NAGASHIMA Shunsuke (Kagoshima University)

Pacific Atolls are under the threat of environmental changes -globalization and climate change. After Micronesia concluded the Compact of Free Association with the United States in the 1970s, cash transactions accelerated and the consumption economic society, which is separated from the production structure, expanded. This consumption economic society gradually came to stay, laying out a critical situation for maintaining the community life economy. Rice, wheat, imported processed meat and canned fish, which spread into people's lives a long time ago, still rock the foundations of their economic structures for life. In addition, they are in the crucible of competition in the globalizing economy. In this area, where cheaper goods are imported and high value-added products are not made, the separated structure between production and consumption is accelerating. The local economy is inclined toward a MIRAB (Migration, Remittance income, foreign Aid, Bureaucracy) economic structure, but it is becoming even more critical as the Compact Fund is reduced.

Even if their future vision should be on the conquering Insularity Economic Problem under Island Complex, global economic competitions present them super hard challenges. "Conquering the problem of Distances": hardships caused by the big ocean which occupies one third of the earth, and by high fuel cost, Information links by satellite or line should be revolution. However digital divide and high cost requirement problem occur to the islanders from now on. Someone may insist bioengineered products are the best methods for bridging the gap!! However they can produce in other competitive place near market. "Conquering the problem of Smallness": their competitive commercial products are limited. "Small is beautiful" and "Slow Life" strategy need well trained high touch services and promotion of original culture. However these not always lead to high value adding economy, directly. "Conquering the problem of Marine": their hardness to prevent natural hazard is increasing. Endogenous marine industry is not strong enough to the world market. Charges for fishing in other piscatorial for EEZ are exogenous developmental method. Marine tourism needs harmony with local fishing and nature reservation, and they have to pay respect for vernacular culture. They have to establish local and global (GLOCAL in Japanese English) rule. However these paths are on the way of Industrial and Post-Industrial Civilization.

They and we have to prepare and add alternative path to the next civilization: Life-nomic Civilization. The development path to promote "Life economy (by Hazel Henderson)" is the

royal road based on traditional and subsistence economy for the Pacific Islander and us. Subsistence economy for everyday life and sustainability is substance for their future. This is the crisis for their future and society; recognition and awareness of these issues have to be revealed and be discussed each other beyond generation. However dominant structures of cash economy prevent their Turn Pike Path. We have to establish Fair Trade Structure with Pacific Islanders beyond low cost competition in the World Market.

Climate change is advancing more and more the collapse of subsistence/production foundations. The rise in ocean levels caused by global warming, understood only as an average sea level, is only one of these problems. As real problems, the killing of creatures on the shore and at the surface of the sea by El Nino which causes coral destruction damage, "sea burning" by both continuous drought damage caused by high temperatures and temporary drops in the sea levels. Land damage from salt water by La Nina which causes temporary sea level rises, powerful typhoon increases with serious damage by rainstorms and flood-tides, ocean sand movement and lost in deep sea by seaside infrastructure by urbanization. The thinning of fresh water lens by rising sea levels cause not only vegetation decline, but also cause the catastrophic risk of human living sustainability through trotting step destruction of ecology. These problems of huge risks give them social unrest, and anthropological spoil from other Advanced Industrial and Civilized Society. Anthropological climate change require us new Global Wisdom.

To check the situation, we investigated the actual situation of small islands in the Chuuk Atoll area. The outline of the results shows individual and concrete examples of these issues mentioned above. Life changes towards a United States lifestyle strongly influence not only a filtering into the culture base but also a consumption economy structure. The need for cash transaction and the lack of business chances advances immigration to Hawaii, Guam, and the continental United States. They have to get over the collapse of production foundations and have to establish new paradigm and method toward sustainability.

International economic change is realized as the sensitive adjustment reaction to a lifestyle of importation. For example, in the case of a jump in oil prices, we can consider control of fishing and some drifting with high-risk without enough fuel. Extremely low-cost imported rice is sold as Guam-rice, and it cause change in family budget aspects, and production structure aspects, and health keeping aspects. They want to buy rice if money. Their nutrition had been well kept under the control of life culture of potato stomach and full body consumption, however now their imported food with high calories and partial body consumption lead them health keeping problem. Can we see any future plan under such changes? The only prospect is that a sense of impending crises exists in this generation. We have to show alternative methods and future passes which are appropriate to meet Pacific islanders' benefits to the next generations, and to avoid such big risk matters.

Our scholarly interests are as follows:

1) Can we propose, define, establish standards and take measures regarding the crisis critical point of sustainability for each scholarly area? And can we put these in a general order? For reference, Professor Lino Briguglio in Malta has ever proposed Vulnerability, but we can not know the measures by only extrinsic guidelines. We have to establish integrated intra island sustainability model of small island base and islander's life level, cooperated with integrated observation challenges by GEO (Group on Earth Observations) SS(System of Systems). It must be suitable to realize sound development and future plan for inhabitants of islands themselves. The problem is examining "5 Ware-5 Hierarchy, 3 Life Mode and Social Risk Management Procedure"and "whether it can be countermeasure against Globalization + Climate Change or not".

2) Keeping the balance of "not traditional recurrent but future-oriented Life Economy", which is "the first layer Ecology Economy, the second layer Inter-personal Activity

Economy, the third layer Market/Government Economy “ , we can establish the global model through Pacific small islands, especially isolated islands? Of course, we check the proposal of the model and its concrete contents.

3) On consumer education and environmental education, for man-made factor regarding “Sea level rise crisis” and “Global abnormal weather“, we have to introduce anthropological climate change and spoil risk. Then how does our understanding ‘Island Area in Tropical Pacific/Polar Region’ bring its force into play? We need to consider whether and how it can be the third pillar for the problem; the first pillar should be scientific technique -monitoring, prediction and simulation -, the second pillar is international regulation method by United Nations/International cooperation.

4) In addition to that, as national policy vision for Islands Area, can “Re-consideration of post-MIRAB strategy” is sufficient condition of “Traditional + Modernization + Globalization + Sustainability + Collaboration +Empowerment”? It must include concrete contents.

5) Especially, “the scenario for sea level +88cm rise at the end of 21 century” leaves problems unsettling those measures. We need to discuss study problem and forecast regarding those anxiety/measure social model. The key is social decision-making. We consider wisdom/concept/ method to add traditional Pacific Way.

Seeking Safety from the Storm: The Impact of Climate Change on Inter-Island Relations and Human Migration in Micronesia

Donald RUBINSTEIN (University of Guam, USA)

Pacific Islanders are well aware of the intimate relationship between climate change and people’s life within island environments. For many Micronesian islanders, especially those living on coral atolls only one or two meters above sea level, cultural adaptations to climate changes such as droughts, typhoons, and changes in sea level have been necessary for survival from the earliest times of settlement, over a thousand years ago. One important strategy for cultural adaptation to climate change in Micronesia has involved the ability of small island communities to draw together through larger inter-island relationships of mutual assistance. Because low coral islands are especially vulnerable to these sudden or gradual changes in climate, throughout Micronesia low island communities have developed inter-island networks among themselves, and special political linkages to neighboring high volcanic islands that are less vulnerable and can provide emergency refuge and assistance after devastating storms or floods on the small coral islands.

Within Micronesia, Yap and the Outer Islands have developed the most extensive network of inter-island relations between a high island complex and a group of far-flung low coral islands. Lying along the track of the most frequent and destructive typhoons of the western Pacific, the Yap Outer Islands have always been the most vulnerable islands in Micronesia to storm damage and to the impact of climate change. Centuries ago the “Yapese Empire” developed, linking all the Outer Islands under the authority of one high-ranking group of villages on the main high island complex of Yap. Traditionally the Outer Islanders have paid tribute to their Yapese chiefs, and relied upon the Yapese for protection and assistance after storms.

In very recent years a unique new phenomenon has been occurring, as Outer Islanders, using their traditional linkages to Yapese chiefs, are establishing stable migrant settlements in various parts of Yap. Within the past five years, three major new settlements have taken shape, with Outer Islanders constructing homes and planting gardens in Yap. Many factors are contributing to this new migration movement, which is part of a globalizing and urbanizing trend throughout the Pacific. One factor is certainly islanders’ concerns about the

impact of climate change on their low coral atoll home islands. Although climate change is not yet well understood in the general population of Islanders, educated community leaders are aware of the longterm threat of climate change, and such leaders have played a significant role in spearheading efforts to secure land in Yap for the growing number of Outer Island migrants.

The Korea-South Pacific Ocean Research Center and its Effect on the Local Community

Charity M. LEE, Jae Hoon NOH, Moon Sang KWON, and Heung Sik PARK
(Korea Ocean Research and Development Institute, Republic of Korea)

The Korea–South Pacific Ocean Research Center (KSORC) was established on 30 May 2000 on a small island located within the Chuuk Lagoon of the Federated States of Micronesia according to a Memorandum of Understanding signed between the Chuuk State government and the Korea Ocean Research and Development Institute (KORDI). Establishing a research station in an unfamiliar research territory of a tropical region, in which KORDI had to begin under very difficult economic and institutional circumstances, was a great challenge. However, with full support from the Chuuk State government and the local community, and with great enthusiasm and sacrifices from several KORDI researchers, KSORC currently has 20 local employees involved in various research and maintenance activities. Locally, both the government and the general public expect to gain economic assistance, as well as scientific knowledge, from KSORC activities. KSORC is responding to such expectations by conducting ocean research projects that may help the local economy, such as the development of full life-cycle black pearl production and other bio-resources development projects. Also, to respond to immediate concerns of island nations, oceanographic studies and a monitoring system have been initiated as KSORC’s first and foremost objective since its establishment to understand the process of tropical ecosystems and provide essential scientific knowledge and baseline data needed to understand regional effects of climate change. Such continuous monitoring of ecosystems, as well as biodiversity



Welcome speech by Kagoshima University President

surveys and coral monitoring, will eventually help to better understand the changes observed in Korean waters. Although the monitoring and periodic oceanographic process studies are still conducted on a small and infrequent scale due to funding issues, we are optimistic regarding the development of more active future global change studies on topics such as ocean acidification, sea level rise, coral monitoring, nitrogen cycling, new production and primary production, mangrove and seagrass eco-environmental processes, remote sensing, and tropical ecosystem studies.

Research Seminars

Research Seminar No.66, 6th March

The mystery of Mercury Pollution of Fish in the Kagoshima Bay
SAKAMOTO Hayao (Faculty of Science, Kagoshima University)

In November 1973, mercury (total mercury 2.55 ppm) exceeding the mercurial provisional regulation value (0.4 ppm) for seafood was detected in cutlass fish caught in the northern Kagoshima Bay.

To investigate the cause of this, research group of university and Kagoshima prefecture was formed, environmental research was conducted on the levels of mercury in the river water flowing into the bay, sea water, sediments (mud) and all fish in the bay. The result showed that pesticides, industrial waste water and geothermal water etc. were not the cause. Thus it was difficult to investigate the cause without also recognizing the abnormal mercury concentration in the sea water in the Kagoshima Bay.

The search was then continued for the origin of the mercury generation and blowout of gas " boil " observed in the northern area of the bay was doubted as a probable source. A detailed investigation on spouting gas, sediments, chemical composition of sea water and biological samples of the sea area in which " boil" occurred was conducted and the results reported. However, this only succeeded in revealing the limitations of conducting the investigation on the sea surface using a ship.

Therefore, collection and analysis of samples of submarine fumarole using the submarine-boat "HAKUYO" [crew members: 3persons (control:2 persons), displacement: 6.6 Tons, maximum depth: 300 M] was conducted for the study.]

This lecture introduces part of the research result incorporating elucidation of the problem of mercury pollution of fish.

Congenital Defects of Cattle

HAMANA Katsumi (Faculty of Agriculture, Kagoshima University)

Congenital defects were defined as abnormalities of structure or function present at birth. This classic definition is now modified as non-reversible disorder caused by prenatal origin. Congenital defects are caused by hereditary and environmental factors and their interactions. Congenital defects of cattle have many types caused by many agents. Their frequency of occurrence is rather high in Japan.

These bring a big economic damage to farmer due to not only the loss of affected calves but also the reduced value of relatives or hard mates, increased reproductive failure such as abortion, immature birth, dystocia and infertility and the change of management or breeding program.

For veterinary practitioners, the number of clinics for abortion, dystocia or infertility increase, and they are asked the accurate diagnosis and prognosis. Practitioners should be

familiar with the more common defects and help farmers to conduct the preventive measures. By means of reporting each defect to congress or journals instead of not reporting it as a personal experience, the exchange of findings will be a key to access an accurate diagnosis.

Research Seminar No.67, 13th March

“Soil Disinfection by Microorganism”

KUSIGEMATI Kanetosi (Faculty of Agriculture Kagoshima University)

Research Seminar No.68, 22th May

"Experimental Study on Recent Migration Movement in the Pastoral Area of Eastern Mongolia"

OZAKI Takahiro (Kagoshima University)

In Mongolia, the population growth of Ulaanbaatar, which is the capital city of Mongolia, was 43.8% from 1995 to 2004, whereas the national total population growth was only 12.5% in this period. Such a urban concentration of population was usually refereed as “exodus” in Mongolia which was one of the recent severe social problems. But as of pastoral (=rural) area, diversity in the overall trend of population decline was noticeable even in a smaller area than provincial level. To explain this kind of phenomenon, we should investigate the pull factors of emigration as well as the push factors such as zud, which means snow disaster that attacked whole Mongolia severely in 2000 winter. This presentation will be taking up case studies of Darkhan sum and Ihhet sum in the eastern part of Mongolia, where fluoric mines are scattered, as materials to discuss pull factors of migration, to describe the today’s survival strategy of people living in Mongolian pasture, and to rethink nuudel, a Mongolian word which means “movement” or “migration”.

Research Seminar No.69, 27th May

"Island Road" Project meeting

16:30-, The Interdivisional Education and Research Building, 5th Floor

Research Seminar No.70, 26th June

"Origin of Terrestrial Vertebrates Faunas of the Ryukyu Islands from the Viewpoint of the Paleontology"

OHTSUKA Hiroyuki (Professor Emeritus of the Kagoshima University)

Result of study on the pale ontological analysis of terrestrial vertebrate fossils in the Ryukyu islands furnish valuable clues and considerations as to the history and age of animal migration from the continent to its neighboring islands. Geological and pale ontological data suggest that the area of the Ryukyu Islands has been repeatedly connected to the Asiatic Continent and each land connection has been followed by migration of characteristic terrestrial vertebrates from the continent. So long as result of excavations done in past five years in the Ryukyu Islands, five diagnostically different stratigraphic levels containing Late Miocene to latest Pleistocene vertebrate fossils have been delineated in the islands. Among the fossil assemblages found in these five different stratigraphic levels, those from Level 2 (Early Pleistocene) are known to occur in shallow marine deposits underlying the Early to Middle Pleistocene Ryukyu Group. They are named Imadomari-Akagimata assemblage and are considered to be immigrants from the latest Pliocene Renzidong fauna in Anhui Province located in Central China, during the second land connection. This assemblage may be regarded as the oldest post-Miocene fauna and might include the Ancestors of the Pleistocene fossil and living endemic terrestrial vertebrate faunas of the Ryukyu Islands. Among the

vertebrates in the Imadomari-Akagimata assemblage, the archetypal deer(=Cervus (Metacervulus), new species) arrived to the islands from the continent as a progenitor and its descendants were flourished in the islands during the Pleistocene together with another cervid and large terrestrial tortoise(=Manouria). These taxa became completely extinct at the end of Pleistocene (ca.15,000years B.P.), after the formation of many morphotypes. It can be said that other animal in this assemblage may serve as the progenitors of the present mammals, reptiles, and amphibians living in the Ryukyu Islands.

Research Seminar No.71, 3rd July

"Culture and Cultural Identities in Contemporary Island Societies "
Philip HAYWARD (Macquarie University)

In the late 20th and early 21st Centuries island cultures have been affected in various ways by the spread of global (and inter-local) economies and media operations. The global nature of this phenomenon marks it out from preceding local incidents of change occasioned by external and internal factors.

Drawing on the speakers research in the Whitsunday archipelago (off mid-north coast Queensland, Australia), south eastern Pacific islands such as Lord Howe and Norfolk; New Britain and Mioko island (Papua New Guinea), Ogasawara and Pitcairn Island, the presentation will examine aspects of the relationship between natural and cultural heritages in Small Island Cultures.

Discussion will identify the simultaneously fragile and tenacious nature of island cultures and how this balance affects cultural survival and mobility. The paper will go on to develop assertions based on a reading of Jared Diamond's 2005 book Collapse: How Societies chose to fail or succeed. After identifying the relevance of Diamond's work to small island cultures, the paper will propose a set of related factors to explain and typify the development and re-stabilisation of small island cultures during periods of change. An understanding of the role of periods of cultural turbulence will be proposed, with particular regard to migration patterns across islands. Discussion of various facets of migration to island communities will focus on the nature of change occasioned by new settlers.

Following on this discussion, the paper will then address parallels between ecology and Green politics in understanding culture. Drawing on the work of geographers such as Eric Carter and his approaches to biocultural geography the paper will explore this notion and its complexities. Through a brief critique, the paper will propose an agenda for engaged and supportive island research with regard to the founding principles of SICRI (as identified at www.sicri.org and in Hayward [2005]).

In conclusion , the paper will address the role that imagination plays in societies and the manner in which heritage forms can be understood to embody social imagination.

Research Seminar No.72, 25th September

"Environmental Quality and Economic Growth: The Case of Pacific Island Countries"
John ASAFU-ADJAYE (RCPI Kagoshima University)

Does environmental quality improve as a country develops? This question has been the source of intense debate since Grossman and Krueger's landmark paper in 1991 on the environmental impacts of the North American Free Trade Agreement. In that study, the authors concluded that there is an inverted U-shaped relationship between pollution levels and income. That is, there is an increasing level of pollution for people living in lower income countries. However, as incomes rise, pollution levels decline. This phenomenon has now come to be known as the environmental Kuznets curve (EKC) after the nobel prize

winner Simon Kuznets who proposed a similar relationship between income inequality and income level in 1955. The existence (or non-existence) of an EKC has significant policy implications. For example, if it is true, it provides justification for the view that pollution is a necessary evil for countries at an early stage of development and that economic growth is the key to solving environmental problems.

Although the EKC debate has generated a considerable number of empirical studies, none so far have specifically considered the case of the Pacific Island countries (PICs). At this seminar, the speaker will present the results of his research on the relationship between environmental quality and economic growth, with specific attention to the PICs. It will be argued that the PICs are diverse in terms of land area, population, resources, ecosystems and levels of economic development. Therefore, the results of studies conducted elsewhere may not be applicable to these countries. Following presentation and discussion of the results, the policy implications for improving environmental quality in the PICs will be addressed.

Research Seminar No.73, 16th October

“History of Gajya Island, Tokara”

MINAMURA Takeichi (Kagoshima University)

Research Seminar No.74, 13th November

"The Pediatric Medical Care System in Kagoshima Prefecture and the Role of Supportive Work for Children in the Islands Area by Non-profit Organization (NPO: Kodomo-iryō network) "

KAWANO Yoshifumi (Department of Pediatrics, Kagoshima University)

The number of pediatricians per 100,000 children in Kagoshima Prefecture is only 59.2, which is a ranking of 45th in the 47 prefectures in Japan. Since there are many islands with residents, Kagoshima Prefecture would be the last one in respect to supplying medical care for children. About 30,000 children are living on 28 islands, where general practitioners are responsible for child health. Once those children suffer from serious disease, they are required to have advanced medical care by the specialists in the Hospitals in Kagoshima city, separated from other family members. The hospitalization often takes more than half a year and they are obliged to stay in the hospital with their mothers. It creates incredibly heavy stress on both physical and psychological conditions.

Our non-profit organization (NPO: Kodomo-iryō network) was established in August 2005 by pediatricians, nurses, or co-medical staff in Kagoshima. The main purposes of this NPO are economical and psychological support for children with serious diseases and informing general practitioners of current medical care in pediatrics. We aim at the establishment of a network for sick children with a mission of Appropriate medical care and comfortable hospitalization for all sick children.

Research Seminar No.75, 22nd January.

"Construction of Cinta Laut and Prospects on Maritime World Studies in Wallacea "

OSOZAWA K. (Faculty of Agriculture, Ehime University)

Research Vessel , Cinta Laut, was constructed for the project setting up a base for maritime world study with research vessel in Wallacea on May in 2003. We have operated eighteen research voyages with Cinta laut since then.

As a research ship, we thought the ship should be Pinisi, the traditional wooden sailing boat of Sulawesi. It is a symbol of Sulawesi culture. Although it was the first trial to maritime research, we thought Pinisi research boat will symbolized the objectives of our

project and will gain the support from people in Sulawesi.

On July 7 in 2002, one year before construction of Cinta Laut, Lembaga Perahu was established in Makassar. The objectives of this NGO are

- 1) to develop of new methods in maritime world studies.
- 2) to vitalize of maritime world studies.
- 3) to build human resources for maritime world studies
- 4) to convey of enthusiasm for marine environment to young generations.

Cinta Laut has already built. It is important to develop research plans that fully utilize the ship. We will consider developing environmental / natural education programs. There are possibilities of conducting eco-tourism and shipping business in order to obtain research aids for Indonesian graduate students. In the future, it will be necessary to raise self-sustaining funds. It will ensure that we can conduct research of our interests, without being influenced by outside funding agencies.

At same time, we will operate the ship to raise fund, to protect the sea by coordination with fishermen, to protect forest, and to cultivate human resources. We would like to realize those objectives and establish a new axis in area studies.

Recent Publication

South Pacific Studies Vol.27, No.1 2006 (November 2006)

Research Papers

MATSUI Tomoaki, KINOSHITA Kisei, MACHIDA Shoichi, TAKAHARA Hiroyuki,
YAMAMOTO Masashi and KANAGAKI Chikara: Automatic Long-Time
Observation of the Volcanic Clouds at Satsuma-Iojima, Kyushu, Japan

Siddhartha Kumar ROY, Md. Abdul KARIM, K. M. Aminul ISLAM A,
Md. Nasimul BARI, M. A. Khaleque MIAN and HIDAKA Tetshushi: Relationship
between Yield and Its Component Characters of Bush Bean (*Phaseolus vulgaris* L.)

Md. Abdullahil BAQUE, Md. Abdul KARIM, Abdul HAMID and HIDAKA Tetshushi:
Effects of Fertilizer Potassium on Growth, Yield and Nutrient Uptake of Wheat
(*Triticum aestivum*) under Water Stress Conditions

Patrick D. NUNN, Tony HEORAKE, Esther TEGU, Bronwyn OLONI,
Kellington SIMEON, Lysa WINI, Sereana USURAMO and Paul GERAGHTY:
Geohazards Revealed by Myths in the Pacific: a Study of Islands That Have
Disappeared in Solomon Islands

Research Notes

Chandra Subhash Ajay, and Jayaraman Tiru K.: Feasibility Study of a Single
Currency for Pacific Islands: A Principal Components Approach

South Pacific Studies Vol.27, No.2 2007 (March 2007)

Research Papers

James Davis REIMER, ONO Shusuke, FURUSHIMA Yasuo, TSUKAHARA Junzo :
Seasonal Changes in Morphological Condition of Symbiotic Dinoflagellates
(*Symbiodinium* spp.) in *Zoanthus sansibaricus* (Anthozoa: Hexacorallia) in Southern
Japan

Patrick D. NUNN : Space and place in an ocean of islands: thoughts on the attitudes of
the Lapita people towards islands and their colonization

OGAWA Ryoichi : Project Management for Rural Infrastructure Development by Community
Participatory

KUWAHARA Sueo, OZAKI Takahiro, NISHIMURA Akira : Bullfighting and the

Formation of 'Periphery-Periphery' Network in East Asia
ITO H Mami, SAKAMAKI Yosataka, TSUDA Katsuo and KUSIGEMATI Kanetosi :
Comparison of developmental rates and reproductive traits of the common cutworm,
Spodoptera litura (Fabricius) feeding on some host plants

Occasional Papers No. 43 (February 2006)

Islam in Contemporary Southeast Asia. AOYAMA T., ed

Occasional Papers No. 44 (February 2006)

The Future of Shimauta. YANAGAWA H., ed

Occasional Papers No. 45 (March 2006)

Innovation of Education in Remote Islands to Affect a Request of the Present Age
NAKAYAMA Y. & HATTA A. eds

Occasional Papers No. 46 (March 2006)

A Research Project for Sensor Zone Setting on Kagoshima Chain Islands from
South to North for Cultural & Environmental Transition. TSUKAHARA J. &
NAGASHIMA S., eds

Occasional Papers No. 47 (March 2007)

Global Warming and Pacific Islands. MORIWAKI H. & KAWAI K., eds

**KAGOSHIMA UNIVERSITY
RESEARCH CENTER FOR THE PACIFIC ISLANDS**

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VISITING RESEARCHER

The Research Center for the Pacific Islands aims to promote interdisciplinary studies on islands and islands zones in Oceania and its surroundings. The Center will host one visiting researcher with a distinguished record of publications on some aspect of regional studies of above-stated areas. Once selected, the candidate will be appointed as a visiting professor or associate professor and take the position for three months to one year.

The candidate should undertake, during the term of their appointment, collaborative research with the staff concerning one of the following themes;

Terrestrial environments,
Organisms and resources in marine environments,
Conditions of health, and
History and/or culture studies

As a rule, the applicant should hold a Ph.D. or M.D. degree.

An appointee can be granted a salary and research expenses equivalent to a corresponding staff member of Kagoshima University and round-trip traveling expenses as well as the right to use an office, equipment, library, and other facilities and services.

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