



ISISA

Islands of the World XIII

Small is Beautiful: Island Connections and Innovations

第十三屆世界島嶼會議

小島之美：島嶼的連結與創新



2014 ISISA MEETING

PROGRAMME

Penghu Archipelago, Taiwan

September 22-27, 2014



National Penghu University of Science and Technology



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Welcome messages

Message of Congratulations from Taiwan's President, Ma Ying-Jeou

To Chen-Fa Wang, the Magistrate of Penghu County, and all participants of the 13th Islands of the World Conference :

Knowing that the 13th Islands of the World Conference will be held at National Penghu University of Science of Technology from September 23 to 27, 2014, I would like to extend a warm welcome and the most cordial greetings through this message of congratulations to all distinguished guests from various countries. At this conference, you could share your research and development experience, explore unique cultural heritage, facilitate international cooperation and exchange of experience, and promote prosperity and progress in small island developing states. All the efforts you have made will contribute to a happy land. I wish the 13th Islands of the World Conference every success and all participants a pleasant stay.

Ma Ying-Jeou



總統賀電

華總一信電：10320061840 號

澎湖縣王縣長乾發暨「第十三屆世界島嶼會議暨學術研討會」全體與會人士公鑒：

欣悉訂於本（103）年 9 月 23 日至 27 日假國立澎湖科技大學舉辦「第十三屆世界島嶼會議暨學術研討會」，特電申致賀忱，謹向遠道而來各國貴賓表達誠摯歡迎之意。至盼藉由此項盛會，分享研究發展經驗，探討獨特文化蘊藏，促進國際合作交流，推升島嶼進步繁榮，共同為營造融合自然人文之幸福樂土貢獻心力。敬祝活動圓滿成功，諸位健康愉快。

馬英九



中 華 民 國 1 0 3 年 9 月 1 8 日

Message of Congratulations from Taiwan's President, Ma Ying-Jeou



ISISA Islands of the World XIII

Small is Beautiful: Island Connections and Innovations

Penghu Archipelago, Taiwan, 22-27 September 2014



ISISA

International Small Islands Studies Association

ISISA Discussion Group: ISISA@yahoogroups.com

Website: <http://isisa.maui.hawaii.edu>

Welcome to “Islands of the World XIII”

This is going to be an exciting, interesting and informative time for all of you attending Islands of the World XIII in Taiwan from 22 to 27 September 2014. Gathered in the Taiwanese capital, Taipei, and in the beautiful Penghu Islands, located in the strait between mainland China and Taiwan, Penghu consists of some 90 islands and islets covering an area of 129 square kilometres; a series of truly small islands and, so, an appropriate place for our conference.

Penghu is known also to Europeans as the “Pescadores”, the Portuguese name given to the place when they also named Taiwan “Formosa”. “Pescadores” means fishermen whilst “Formosa” mean beautiful. Our hosts are the County of Penghu and the Penghu National University, so the community and its main educational institution. Penghu counts about 100,000 people and in that sense the place is not small at all.

During your stay on Penghu, you will have the opportunity to explore the attractions of the these islands as well as participate in challenging and information presentations about the latest research on small island life, its rewards, its challenges and its pleasures. All of this in the context of people of like mind: you will be in the midst of the whole world of islands, mostly small but also large: you will have much to tell us and you will have much to learn, in formal papers and informal encounters over the week we are to be together.

If you have not done so already, please consider joining ISISA and participating in its lively discussion list, Facebook page and conferences. You might even consider offering your own island as a venue for a future “Islands of the World” conference!

I hope so and look forward to visiting you there.

Professor Grant McCall – President – International Small Islands Studies Association
29 Thomas Street, Darlingtown NSW 2008 • Australia
g.mccall@nissology.net



Magistrate of Penghu County

Ladies and Gentlemen,

On behalf of the residents of Penghu archipelago, it is my great pleasure to welcome you all to Penghu.



Penghu County is located in the middle of Taiwan Strait. Penghu is known for not only our world-class ocean view, but also the cultural heritage. Our friendly residents, the diverse ecosystem, and the rich history are all part of the unique charm of this island county. In recent years, Penghu has completed the infrastructure, while actively promoting the development of a low-carbon island and a lifestyle of health and sustainability. As an ocean county, we also strive to protect and preserve the local marine ecosystem. Because of such effort, Penghu is selected as one of the ten world' most mysterious islands by the popular guiding book Lonely Planet Magazine. We are also proud to officially become a certified member of "The Most Beautiful Bays in the World" organization this year.

To welcome our international visitors and introduce you the beauty of Penghu, we have planned two itineraries that showcase the diverse and unique natural and cultural resources of Penghu. The itineraries take you to see Penghu's effort in the development of renewable resources, the traditional village culture and the unique basal landscape. You will also visit Chi-mei Island. It is also our hope that these tours would inspire more thoughts and insights in island development.

It's truly an honor for Penghu to host the 13th Islands of the World conference. Your being here is a big step in our effort to promote international collaboration. I believe the insights gained from the conversations that will have taken place during the conference will become important springboard of ideas for future development for not only Penghu but also many other islands in the world.

Finally, my best wish to the success of the conference and I hope all of you will enjoy Penghu during your stay here.

Magistrate of Penghu County

Chen-Fa Wang



縣長致詞

首先，我代表澎湖群島的居民，歡迎您來到澎湖群島參加第十三屆世界島嶼會議！

澎湖縣位處台灣海峽的中點。島上人民友善熱情，再加上特殊的地質景觀、多元的海洋生態與悠久的歷史人文，交織成獨一無二的美麗海灣。近年來澎湖已完成各項基礎建設，同時積極發展推動樂活低碳島以及積極維護海洋生態保育，是寂寞星球雜誌(Lonely Planet)所評選的世界十大神秘島，也於2014年正式成為「世界最美麗海灣組織」(The Most Beautiful Bays in the world)的會員。

為了歡迎各位的到來，此次主辦單位特別安排體驗澎湖群島的風貌與文化的活動行程，如介紹澎湖群島的再生能源、傳統聚落的文化以及獨特的玄武岩地貌；另外並安排澎湖七美參訪，希望能觸發您更多的島嶼發展觀點。

我們很榮幸地能夠主辦第十三屆世界島嶼會議暨學術研討會，您的到來象徵著澎湖群島國際交流的更進一步，會議中的結論也將成為澎湖群島以及世界其它島嶼未來發展的重要參考。

最後，我祝福本次會議圓滿成功，也希望大家能在這短短的旅程中，將澎湖群島的自然美景盡收眼底，在心中留下美好的回憶。

澎湖縣縣長 王乾發



Chairwoman of Penghu County Council



Ladies and gentlemen,

First of all, I'd like to welcome you all to come to Penghu for the thirteenth ISISA Island of the World conference. I believe this conference is of particular significance since this year marks the 20th years after the Declaration of Barbados. Penghu is located in the middle of the Taiwan Strait and has the unique island culture due to the influence of both the continent and marine cultures. There are also limitations because our physical environment. I believe Penghu and many of the islands you come from share some similar challenges and potentials. Over the years, Penghu has made great effort in its infrastructure, economy development and environmental protection in order to improve the quality of life for all residents. We understand we still have a long way to go. More effort is needed in terms of traffic, medical care, education, innovation in economy, a sustainable life style, and care of the elderly residents. We will strive to continue to provide a prosperous and sustainable home to all out residents.

It is a true honor to have the scholars and researchers from all over the world here. Besides being a great host and inviting you to experience the beauty and culture in Penghu, we would like to invite you to provide suggestions that hopefully would help solve the challenges we face as an island region and further strengthen the networking and collaboration among islands worldwide.

Once again, welcome to Penghu. I also would like to express my gratitude to the organizing committee and all the support staff for their tireless effort. I wish the conference great success and I also hope you will have wonderful memories from this visit. Thank you.

Chairwoman of Penghu County Council

Ms. Liu Chen, Chao Ling



President, National Penghu University of Science and Technology



Ladies and gentlemen, it is my great pleasure to welcome you to the National Penghu University of Science and Technology.

This university is a public university located on an island off Taiwan and was founded in 1991. We have about 3000 full-time students, faculty and staff. We have three schools including 12 academic departments and 5 graduate institutes. The educational goal is to inspire students to reach their full potential by connecting theory and practice in various fields. Our university strives to provide quality education. We're a relatively small and teaching-oriented university, we are proud to educate well-rounded university students.

The three main foci of our academic programs are marine resources, tourism and leisure and green energy industry. Currently we are making every effort to create a more international learning and teaching environment in order to not only further improve the quality of teaching and research to a even higher and more international level, but also to make our university more appealing to many wonderful international students who may be interested in joining Penghu University. In doing so, we believe that everyone, including the faculty and the domestic students can benefit from being a more diverse and international academic institute.

Over the years, many islands appear to have faced similar challenges and shared common developing experiences. Instead of taking on these issues alone, promoting collaboration and cooperation among islands all over the world is a critical current issue. Therefore, it is our sincere hope that through the conversations that will have taken place over the course of the conference, we can exchange ideas and share insights, and ultimately the conclusions drawn from the research presentations,



panel discussions and dialogues among participating scholars and researchers would help solve issues and problems concerning island development in this globalized world. This year, more than 100 research papers will be presented at the conference by approximately 200 international and local participants from 22 countries. I am sure this conference will increase international visibility of this university. It will also facilitate international development of this university, especially in terms of academic collaboration.

Finally, I would like to take this opportunity to express my sincere gratitude to the government organizations for their guidance, including National Development Council, Ministry of Science and Technology, and Bureau of Energy (Ministry of Economic Affairs). I also thank the following government organizations for sponsoring this event, including Penghu County Government and Penghu National Scenic Area Administration (Tourism Bureau). I am also grateful to Kinmen County Government, Lienchiang County Government, National Taiwan Normal University, and Marine National Park Headquarters for participating and support.

In addition, I am grateful to all the students, faculty and staff at the National Penghu University of Science and Technology. They have worked tirelessly over the past several months to make this event possible. And I thank them for their hard work and contribution. I wish the conference every success and all participants an enjoyable stay in Penghu. Thank you.

President of National Penghu University of Science and Technology

Dr. Ying-Wei Wang



Deputy Minister of National Development Council

President of International Small Islands Studies Association (ISISA), Magistrate of Penghu County, Chair of Penghu County Council, President of National Penghu University of Science and Technology, Distinguished Guests, Ladies and Gentleman,



On behalf of National Development Council, it is our great honour to welcome you to Taiwan and Penghu Archipelago. This is the second time of Taiwan's islands to host the ISISA conference. 10 years ago, the 8th Islands of the World held in Kinmen Island, and the "*Kinmen Declaration*" was announced from your organization and participants. The spirit from the Kinmen Declaration have been adopted as 'The Guideline for Promoting Sustainable Island Development' in 2005 a few months after ISISA conference and as part of review principles when implement the '*Offshore Islands Development Act*'. We are grateful for the contributions from ISISA Islands of the World Conference.

Taiwan consists of main island Taiwan and various small islands, including Kinmen, Matsu, Penghu, and Little Liuchiu on Taiwan Strait; Green Island, Orchid Island and Turtle Island on the Pacific Ocean; Pratas Atoll and Taipin Island of the Spratly Islands in South China Sea, and the Diaoyutai on the East China Sea. In order to strengthen the small islands' capacity in economy and regional networks, an '*Offshore Islands Regional Collaboration Platform*' was initiated by three island governments Kinmen, Penghu and Matsu since three years ago. Moreover, a new department named "National Land, Regions and Offshore Islands" under The National Development Council was established this year. The Platform has worked intensively on the cross-boundary cooperation in environment, transportation, tourism, economic and heritages protection. However, facing to the global challenges, there are much to learn from you – the Small Island Studies experts.

I am hereby showing my deepest gratitude to all the colleagues in Penghu for their hard work to host the conference and thank you very much for your attendance and contributions that make this conference possible. We wish all of you a very successful conference in the coming days, and please enjoy your stay in Penghu.

Deputy Minister of National Development Council

Dr. HWANG Wang-Hsiang,



ISISA and Islands of the World Conferences

I. Introduction to ISISA

The International Small Islands Studies Association (ISISA) is an important research organization by scholars who are interested in research and development of small islands. The members of ISISA include island countries, regional representatives, island research institutes, and scholars from Europe, the Mediterranean Sea, the Baltic Sea, the North Sea, the Atlantic Ocean, the Caribbean Ocean, the Indian Ocean, the Pacific Ocean etc. The Association encourages scholars to explore various issues and problems concerning resource management and development, nature and culture, and to form a network by linking island communities in different regions to look for sustainable development policy of island countries or regions. The Islands of the World Conference is a biennial international conference held by the ISISA, and its objectives are to explore and resolve issues concerning ecology and environmental protection, island community and economic development, island resources use and planning, and island sustainability.

II. Introduction to Islands of the World Conferences

The first Islands of the World Conference was held in Victoria, Canada in 1986, and subsequent conferences are held every two years in different oceanic regions. At the “Islands of the World III” Bahamas meetings in 1992, it was decided to form a continuing organization that would hold its first meeting in Okinawa in 1994. In 2002, the *Global Islands Network* was established and the *Island Studies Journal* has been published since 2006, both leading to a significant influence on global island development network and island studies. Brief information about previous Islands of the World Conferences is listed below:

Islands of the World I	(1986)	Victoria Island, Canada
Islands of the World II	(1988)	Tasmania, Australia
Islands of the World III	(1992)	Bahamas
Islands of the World IV	(1994)	Okinawa, Japan
Islands of the World V	(1998)	Mauritius
Islands of the World VI	(2000)	Isle of Skye, Scotland



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Islands of the World VII	(2002)	Prince Edward Island, Canada
Islands of the World VIII	(2004)	Kinmen Islands, Taiwan
Islands of the World IX	(2006)	Maui, Hawaii, USA
Islands of the World X	(2008)	Jeju, South Korea
Islands of the World XI	(2010)	Bornholm, Denmark
Islands of the World XII	(2012)	British Virgin Islands
Islands of the World XIII	(2014)	Penghu Archipelago, Taiwan

The XIIIth Islands of the World Conference, 2014, held in the Penghu Archipelago, is hosted by the Penghu County Government and co-hosted by National Penghu University of Science and Technology. This event is made possible through the support of the President of ISISA, Grant McCall, Vice President Godfrey Baldacchino, Co-secretary Beate Ratter, several ISISA executive committee members, and a group of scholars, researchers, and other interested persons. In addition, the year of 2014 is the UN International Year of Small Island Developing States. This year is also the 20th anniversary since the establishment of ISISA, and the 20th year of BPop+20 of Agenda 21 adopted during the UN conference (Chapter 17: Small Island Developing States and Sustainable Development in 1994 Barbados Declaration on achieving sustainable development). Important meetings and conferences held by the UN Small Island Developing States (SIDS) or major research institutes on island studies are available throughout this year to promote the importance of issues concerning development of island states located in the ocean that covers 70% of the earth's surface. The 2014 Islands of the World Conference held in Penghu together with the UN International Year of Small Island Developing States and Barbados+20 will make an important and meaningful impact on Penghu's future and will also set a record in world history.

III. Objectives of the 13th Islands of the World Conference

Current issues around island development often focus on economic and industrial development, improvement on life quality of small islanders, and ecological development and environmental protection. These issues are also included in this conference. With regards to issues of economic and industrial development, some related topics are island tourism and leisure industry, fishery



industry, sustainable and innovative development of green energy and industries (including digital communication industry). Concerning issues about improvement of life quality for small islanders, related topics are community development on islands (including health care development in Penghu), historic preservation and maintenance, education and skills training. Last but not the least, topics related to the issue of ecological development and environmental protection include planning and development on Penghu islands, combination of ocean and territory, challenges of island industrial development on ecology and environment, and policies and reflections of island sustainability in the current globalized society. After the conference, valuable suggestions and strategies proposed by scholars and researchers will be collected and published in the conference proceedings to provide a reference guide for the Penghu County Government.

The conference aims to provide a platform for sharing and exchanging information and experiences of island sustainability by scholars from around the world, and to foster long-term partnerships between Taiwan and other international island states in an effort to make Penghu known to the world and to share the low carbon-emission experiences in Penghu. Other main objectives of the conference are to allow Penghu to learn about the island development policies of other participating island states to develop industries unique to the Penghu area by sustainably utilizing invaluable island natural resources, and to strengthen the connection between Penghu and other island countries for an innovative and sustainable development of islands.



Islands of the World XIII

Small is Beautiful: Island Connections and Innovations

This is a special year. The UN announced 2014 as the Year of Small Island Developing States and ISISA is celebrating its 20th anniversary. That's already two good reasons to come to the 13th *Islands of the World* conference on Penghu Archipelago, Taiwan, September 22 to 27 this year.

The topic of the conference was chosen as: ***Small is Beautiful: Island Connections and Innovations***. It is 40 years since Fritz Schumacher's epoch-making book was discussing development from a standpoint of smallness and with a perspective of a post-growth society and an ethical approach to economic development. The once posed critique of growth as the single solution to progress, and the return to humanitarian principles, both remain valid. What can small islands learn from, and contribute to, this discussion?

Islands networks through migration have ever since been a contributing factor for island development, and especially so in a more globalised world. Meanwhile, innovations in green technology, alternative development strategies and sustainable development approaches have a special importance for an adapted future on small islands.

Are islands special or just smaller versions of larger places? Can we learn from exceptional island situations? Is studying islands on their own terms an academic endeavour? And is nissology a scientific paradigm?

In two central panel discussions with invited experts in their field, we hopefully create room for discussion and exchange on these salient themes during the conference. And a special day out on the Island of Chi-Mei includes a gathering with the local population and a panel discussion on green technology and sustainability: lessons learned from other island experiences.

Apart from the academic programme, an important element of the Penghu event will be the 20th anniversary celebration of ISISA as the single trans-disciplinary, global and integrated organisation for the study of small islands. Since the foundation of the organisation on Okinawa in 1994, we have met every second year to discuss and to learn from each other. All former ISISA conference convenors are expected to be present and will share their experiences of, and their insights about, island studies issues.

We think that the meeting in Penghu could be a once-in-a-lifetime experience, not one of the usual academic conference meetings.

We welcome you all on Penghu!

The Organising Committee of the Conference

Beate Ratter, Huei-Min Tsai, Wen-Cheng Wang, Shi-Liang Yu, Jiawei Tang and Daniel Tung-Lin Hung for the Penghu County Government, Taiwan



Programme

Day 1 (Taipei)

Monday, 22 September 2014	
(all day)	Delegate arrivals in Taipei (or earlier), hotel check-in and optional Taipei city tour
17:30 - 21:00	Reception – Taipei – Songs of Islands Venue: NTU Guest Hotel - 'Just Sleep' - at 2nd Floor- Just Italian Restaurant. http://www.justsleep.com.tw/NTU/en/intro Greetings & Dinner Reception - Organizing Committee (President of NPU Prof. Ying-Wei Wang, Prof. Grant McCall, Representative of Penghu County Mr. Kuo-Ching Yeh (葉國清副處長)) Songs of Islands – Songs about island life and their lyrics (Facilitated by Anna & Godfrey Baldacchino, Malta) Oryu, Yoko (Kobe University, Japan). Contemporary Elegy of <i>Adieu Foulard</i>, <i>Adieu Madras</i> and French diaspora from the French Overseas Departments in the Caribbean. Persoon, Gerard A. (Leiden University, The Netherlands). Frightened by the Eagle: Songs from the Island of Siberut (Indonesia). Royle, Stephen A. (Queen's University Belfast, Northern Ireland, UK). 'Oh the Empire, it is finished' – 'England's got Rockall'. Syaman Rapongan (Orchid Island, Taiwan). The Songs of Orchid Island - Flying fish and the Ballad of Tau- <i>Praise the Ocean</i> Music and Songs in various languages

Day 2

Tuesday, 23 September 2014	
10:35 - 11:10	Check-in at Taipei Songshan Airport (domestic airport) Flight from Taipei to Magong City, Penghu Archipelago
11:20 - 12:00	Visiting Penghu National Scenic Area Administration
12:15 - 13:40	Hotel check-in, lunch, move to conference venue at NPU
14:00 - 14:30	• Opening Ceremony Grant McCall, Daniel TL Hung (洪棟霖處長) - Greetings from President of ISISA Prof. Grant McCall, Deputy Minister of National Development Council Dr. Wan-Hsian Huang (黃萬翔副主委), Deputy Magistrate of Penghu County Mr. Yung-Tai Lu (呂永泰副縣長), Chairwoman of Penghu County Council Ms. Liu Chen, Chao Ling (劉陳昭玲議長), and President of Penghu University of Science & Technology Prof. Ying-Wei Wang (王瑩瑋校長) - Student Scholarship Awards - Greetings to the 20th Anniversary ISISA
14:30 - 16:00	<i>Keynote Speeches Chairs: Beate Ratter, David Chang-Yi Chang (張長義教授)</i> • Keynote: Prem Saddul, Mauritius - Barbados+20 – Island connections and the UN Year of Small Island Developing States • Keynote: Mark Bynoe, CCCCC, Belize - Small Islands and Climate Change –



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	adaptation and innovation • <i>Keynote: Eric Clark, Lund University, Sweden - Small is Beautiful - Island development as if people matter</i>
16:00- 16:30	Venue tea break
16:30 - 17:40	20th Anniversary ISISA – Islands of the World conferences 1994-2014 <i>Grant McCall and Beate Ratter - ISISA past and future – Sharing Experiences: From Okinawa to Penghu</i> Special Guests: Hiroshi Kakazu (Okinawa 1994), Prem Saddul (Mauritius 1998), Graeme Robertson (Isle of Skye 2000), Godfrey Baldacchino & Laurie Brinklow (Prince Edward Island 2002), Kuo-Chung Lee, Chao-Jin Chen & Huei-Min Tsai (Kinmen Island 2004), Clyde Sakamoto (Maui 2006), Ko Chang Hoon (Jeju 2008), Karin Topsø Larsen (Bornholm 2010), Dana Lewis-Ambrose (Tortola 2012), Daniel TL Hung (Penghu Archipelago 2014) • Exhibition Opening and get-together
18:30 - 20:30	Welcome Banquet (Pescadores Resort, Magong City)

Day 3

Wednesday, 24 September 2014

09:00 - 10:30	<i>Concurrent Sessions 1.</i> A-1, B-1, C-1, D-1, E-1, F-1
10:30 - 11:00	Refreshment break
11:00 - 12:30	<i>Concurrent Sessions 2.</i> A-2, B-2, C-2, D-2, E-2, F-2
12:30 - 13:30	Lunch
13:30 - 15:00	<i>Plenary Session, Panel A: Innovation and Island future – Green technology, tourism and sustainability</i> (Chair: Robert Y.S. Chen 陳永森) Facilitator: Karin Topsø Larsen, Bornholm, Denmark • <i>Keynote: Godfrey Baldacchino, Malta – The Future and Islands</i> Panelists: Clyde Sakamoto, Hiroshi Kakazu, John Liu, Godfrey Baldacchino
15:00 - 18:00	Penghu Main Island Culture & Nature Site Visits Continued by a beach party and social events
18:00 - 21:00	Beach party and social events (return to hotel 21:00)

Day 4

Thursday, 25 September 2014

09:00 - 10:30	<i>Concurrent Sessions 3.</i> A-3, B-3, C-3, D-3, E-3, F-3
10:30 - 11:00	Refreshment break
11:00 - 12:30	<i>Concurrent Sessions 4.</i> A-4, B-4, C-4, D-4, F-4
12:30 - 13:30	Lunch



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13:30 - 15:00	Plenary Session, Panel B: Journey across home – Migration as solution? Facilitator: Arlene Holmes-Henderson, UK • Keynote: Jonathan Pugh, UK – Being in exile at home: what is ‘Caribbean’ development? Panelists: Elaine Stratford, Dana Lewis-Ambrose, Jonathan Pugh, Bo-Wei Chiang
15:00 - 15:30	<i>Refreshment break</i>
15:30 - 17:00	<i>Concurrent Sessions 5.</i> A-5, B-5, C-5, F-5
17:30 - 20:30	<i>Free time (Visiting Magong main street: Zhong Jheng Rd.)</i>

Day 5 (Chi-Mei Island, Penghu)

Friday, 26 September 2014

08:30 - 10:00	<i>Boat trip to Chi-Mei Island</i>
10:00 - 12:00	Greetings from island communities and schools Refreshment break Island at a glance: Prehistoric site, coastal geological formations
12:00 - 13:00	Lunch – island food
13:00 - 14:30	Island Community Forum: ‘Small is beautiful’ – nature-culture interactions, community-based visions & innovation (Prof. Hiroshi Kakazu, Huei-Min Tsai) • Keynote: Clyde Sakamoto, Maui, U.S.A. – Progress in sustainability: the impact of ISISA on our campus, island and state since 2006 • Presenters: Huei-Min Tsai, Horigome Kenji, Chung-Twn Kuo, Amy Latva-Kokko, Kenneth Kao - Toward Island Sustainability: Satoyama-Satoumi nature-culture interactions and the sustainability plans on Chi-Mei Island
14:30 - 16:00	Site visits: <i>Adaptation and innovation on small islands:</i> stone-walled vegetable gardens, arid resistant crops, stone fish weirs on the tidal zone, wind resistant traditional houses, renewable energy, traditional fishery vs. aqua-culture farm, issues of coastal management, the harbor and tourism
16:00 – 17:30	Boat trip back to main island of Penghu
18:30 – 20:30	Farewell Banquet

Day 6

Saturday, 27 September 2014

09:00 - 11:00	INTERNATIONAL SMALL ISLANDS STUDIES ASSOCIATION • General Meeting – Election of new ISISA Executives, future sites etc. Facilitators: Graeme Robertson, UK, and Stephen Royle, Northern Ireland
11:00- 11:30	Refreshment break
11:30 - 12:30	• <i>Conference Conclusion</i> Closing Ceremony
12:30 - 14:00	Lunch
15:00 -	Flights from Penghu Island to Taipei



Concurrent Sessions

	Room A	Room B	Room C	Room D	Room E	Room F
Wednesday, September 24						
09:00 - 10:30	A-1	B-1	C-1	D-1	E-1	F-1
11:00 - 12:30	A-2	B-2	C-2	D-2	E-2	F-2
Thursday, September 25						
09:00 - 10:30	A-3	B-3	C-3	D-3	E-3	F-3
11:00 - 12:30	A-4	B-4	C-4	D-4		F-4
15:30 - 17:00	A-5	B-5	C-5			F-5

Concurrent Sessions (90 minutes each session = 4 presentations at 15 minutes each plus 5 minutes questions, introduction/conclusion by chair)

A sessions: *Small is beautiful – Island studies and cultures*

B sessions: *Small is dangerous – Island natures and ecology*

C sessions: *Small is challenging – Island economies and management*

D sessions: *New waves in the ocean – Island communities and livelihoods*

E sessions: *New winds for islands – Island technology and innovation*

F sessions: *Taiwan Perspectives – Island futures and planning* (in Chinese, 中文場次)

Room A

A sessions: “Small is beautiful” – Island studies and cultures

A-1 Literature and poetics (Chair: Hui-Mei Yao, NPU., 姚慧美副教授)

Brinklow, Laurie (University of Tasmania, Australia). My island is the house I sleep in at night: The poetics of island space.

Graziadei, Daniel, Hartmann, Britta, & Riquet, Johannes (University of Munich, Germany; University of Vechta, Germany; University of Zurich, Switzerland). The Politics of Islands in the Literary Imagination.

Hartmann, Britta (University of Vechta, Germany). Pursuing an Island Fiction: The Poetics Surrounding Robinson Crusoe.

Riquet, Johannes (University of Zurich, Switzerland). Caught Between Water and Land: The Politics and Poetics of Angel Island.



A-2 Language, culture, and history (Chair: Su-Hsin Lee, National Quemoy U., 李素馨教授)

Currie, Mark (University of Prince Edward Island, Canada). Those who repeat history are not always doomed: The preservation of culture and nature to bolster Dominica.

Stratford, Elaine (University of Tasmania, Australia). The body, the island, the water: critical reflections on the geopolitics of forms of drowning.

Hopkins, Mark (Hong Kong University of Science and Technology, Hong Kong). A parochial lost cause? The micro-politics of language revitalization initiatives in Jersey (British Channel Islands).

Mitchell, Edward S. (School of Languages and Translation, Macao Polytechnic Institute Macau). Chabacano Ternateño: the perseverance of a minority language on a small island. Language choice and attitudes among the Chabacano speakers of Ternate, Luzon Island, Philippines.

A-3 Traditions and practices (Chair: Min-Hua Wu, NPU., 吳敏華助理教授)

Baldacchino, Anna (Malta College of Arts, Science & Technology, Malta). Traditional Dishes or Fusion Cuisine? An Island Journey.

Hsieh, Kai H, Hsu, Kuang-Tsung, & Wang, Chung-Ming (Matsu National Scenic Area Administration, Taiwan). Traditional Eastern Fujian Style Stone House Preserving Project in Matsu Islands.

Koike, Haruko, Oleson, Kirsten, Friedlander, Alan, & Golbuu, Yimnang (University of Hawaii, USA). Creating a Common Ground for Discussion: New Fishery Management Model that Considers Fishers, Ecotourism, and Cultural Subsistence Use.

Lee, Ming-Ju, & Lu, Cheng-Hao (National Penghu University of Science and Technology, Taiwan). The distribution and characteristic of Penghu fish weirs: An investigative review.

A-4 Nissology I – Studying Islands on their own terms (Chairs: Grant McCall; Chun-Chieh Chi, National Dong-Hwa University, 紀駿傑教授)

Depraetere, Christian (Institut de Recherche pour le Développement, Montpellier, France). A general outlook on Nissology as the science of islands.

Bernardie-Tahir, Nathalie (Université de Limoges, France). French geographers and islands: From the idealization of the field to the denial of the object - Epistemological approaches.

Baldacchino, Godfrey (University of Malta, Malta). Notes from the Sicilian Archipelago.

Grydehøj, Adam (Island Dynamics, Copenhagen, Denmark). The Other Kind of Island: Putting the Urban into Nissology, and Why Big Can Be Beautiful Too.

A-5 Nissology Studies II– Studying Islands on their own terms (Chair: Chun-Chieh Chi, National Dong-Hwa University, 紀駿傑教授)

Graziadei, Daniel (Ludwig-Maximilians-Universität München, Germany). Nissopoiesis: the creation of islands through words.

Nagashima, Shunsuke (Japan Society of Island Studies & Kagoshima University, Japan). From Nissology to Nissology: Progress of Japan Society of Island Studies and Future Prospects.

Nakachi, K. (Osaka University, Japan). Okinawa Islands: Geographical Superiority and



Inferiority in International Relations.

Wu, Min-Hua, Lee, Chung-Han, Chen, You-Hsuan, Chu, Yi-Chi, Lin, Chia-Hao, Chung, Hsin, Huang, Li-Ting (National Penghu University of Science and Technology, Taiwan). A Study on the English Translation of the Praise Ballads in Penghu.

Room B

B sessions: Small is dangerous - Island natures and ecology

B-1 Ecology and resource use (Chair: Bing-Huang Chen, Tunghai U., 陳炳煌教授)

Kawai K, Kobari T, Manabe H, Torii T, Nishimura Satoru, & Veitayaki Joeli (Kagoshima University, Japan). Resource Use and Human Disturbance in Coastal Ecosystems: A Case Study of Viti Levu Island, Fiji.

Cheng, I-Jiunn (National Taiwan Ocean University, Taiwan). Ecological study of nesting green sea turtles at Wan-an Island, Penghu Archipelago.

Nishimura, Satoru, Yamamoto, Sota & Kawanishi, Motohiro (Kagoshima University, Japan). A scenario for more efficient use of giant swam taro plantation under socio- economic change: A case study of Pingelap Island, Federated States of Micronesia.

Kawanishi, Motohiro, Yamamoto, Sota & Nishimura, Satoru (Kagoshima University, Japan). Diversity and distribution patterns of useful plants in inhabited area of Pingelap Island, Federated States of Micronesia.

B-2 Islands at risk (Chair: Shih-Chian Lin, National Quemoy U., 林世強教授)

Nagashima, Shunsuke (Kagoshima University, Japan). Restoration of Small Island Societies after the East Japan Great Earthquake.

Hartle, Jeffery A. (University of Central Missouri, USA). Challenges of Island Emergency Response: Comparing Socio-technical Systems.

Siedschlag, Daniela (Helmholtz-Zentrum Geesthacht, Germany). Endangered by smallness: the concept of emotional vulnerability.

Takahashi, Minori (Hokkaido University, Japan). Self-government and climate change: 'Autonomy in External and Internal Relations' in Greenland.

B-3 Climate change policy and adaptation (Chair: Shih-Chian Lin, National Quemoy U. 林世強教授)

Holdschlag, Arnd (University of Hamburg, Germany). SIDS in Climate Diplomacy: Strategies and Priorities.

Papoutsaki, Evangelia & Kailahi, Sandra (Unitec, Auckland, New Zealand). Communicating Climate Change, Disaster and Crisis in the Pacific: A Regional Appraisal.

Kliot, Nurit (University of Haifa, Israel). Management and Mismanagement of Water Resources on Small, Warm Water SIDS - with Emphasis on Climate Change Effects.

Petzold, Jan (University of Hamburg, Germany). Social capital and adaptation to sea-level rise on the Isles of Scilly, UK.



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B-4 Managing natural resources (Chair: Su-Bng Chang, National Taiwan Normal U., 張素玢教授)

Torii T, Kitolelei K, Nishimura Satoru, Kawai K & Kobai T. (Kagoshima University, Japan). The Current Situation and Challenges of Fisheries Resource Management System in Fiji: A Case Study of Nakorokura Village.

Wu, Yung-Lin (Chinese Culture University, Taiwan). A Lohas Perspective Study of Marine Ranch in Penghu Archipelago, Taiwan.

Yu, Shyi-Liang, Chu, Ying-Chien, & Tsai, Chia-Wen (National Penghu University, Taiwan). A Study of the Sustainable Development of Recreational Fishery in Penghu Bay

Chen, Benkang, Yen, Yichi, Huang, Ginren, Zhou, Lizou, Guo, Licho, Wang, Fonren & Lin, Tsaichun (Geology Association, Taiwan). The Strategies of Development for Penghu Geo-park.

B-5 Island resilience (Chair: Min-Hwang Liang, National Dong-Hwa U., 梁明煌教授)

Bates, Jayne & Roberts, Kristina (Mayor, Kangaroo Island Council, Government of South Australia). The Kangaroo Island Story: Survive, Adapt, Thrive.

Krishnapillai, Murukesan (College of Micronesia, Yap Campus, Federated States of Micronesia). Climate-Smart Family Farming for Food Security in Small Islands.

Marto, Ricardo, Alvarez, Lourdes & Suarez, David (Inter-American Development Bank). Big impacts, small territories: Building resilience in the Caribbean, while moving towards a low-carbon economy.

Wu, Chia-Chi & Tsai, Huei-Min (University of Bonn, Germany; National Taiwan Normal University, Taiwan). Tourism development and social resilience in marine protected area: a case study of Four Islands of Southern Penghu.

Room C

C sessions: Small is challenging – Island economics and management

C-1 Cross jurisdictional challenges (Chair: John Liu, National Taiwan U., 劉可強教授)

Sammler, Katherine (University of Arizona, USA). New waves in the ocean: cross-jurisdictional challenges and collaborations.

Carmichael, Cheryl (University of Prince Edward Island, Canada). Benefits of Preferential Trade Agreements for the Small Island Developing State: A Case Study on Economic Growth within the SPARTECA and PICTA Trade Agreements.

Grydehøj, Adam (Director of Island Dynamics, Denmark). Moving the Centre to the Periphery: Autonomy, Technology, and Societal Change in Greenland.

Li, Zhi-Jun (Xiamen University, China). The Location of Marine Political Geography and the Governance of Qing Dynasty for the Penghu Sub-prefecture: Based Mainly on state bailout of storm damage.



C-2 Economic development and challenges (Chair: John Liu, National Taiwan U., 劉可強教授)

Karides, Marina (University of Hawaii at Hilo, USA). Convivial Economics and the Subaltern Island.

Preston, Nathaniel (University of Prince Edward Island, Canada). Lost Mermaids.

Lay, Suhjen (National Penghu University of Science and Technology, Taiwan). Penghu Economic Development: Green Gold - Seaweed Value Chain Analysis.

Juang, Yih-Ching (National Penghu University of Science and Technology, Taiwan). Sustainable Development for Port Systems in Penghu.

C-3 Development policies and strategies (Chair: Bowei Chiang, National Taiwan Normal U. 江柏煒教授)

Lourens Broersma, Nora Mehnen & Jouke van Dijk (University of Groningen, The Netherlands). Socio-economic developments in the Wadden area, Netherlands.

Tsai, Fuchang, Lee, Peijean, Wu, Chialing & Lee, Yenju (National Taiwan University, Taiwan). Trans-island cooperation platform for Kinmen, Penghu and Matzu.

Mukhopadhyay, Malay, Sarkar, Manisha Deb & Roy, Saswati (Visva-Bharati Central University, Santiniketan, West Bengal, India). Induced developmental policies in two islands of Andaman and Nicobar Archipelago, India: A dilemma in prognostication.

C-4 Economy of smallness (Chair: Huei-Min Tsai, National Taiwan Normal U., 蔡慧敏教授)

Fahie, Derek (Long Look-Tortola, the Virgin Islands). To what extent could an intangible concept be transformed as a tangible product on the commercial market? A case study of the Deputy Governor's History Research Programme in the Virgin Islands.

Li, Sui-Ling (National Penghu University of Science and Technology, Taiwan). Estimating and Forecasting Air Trip Distributions of Off-shore Island Residents in the Busy/Off-Seasons.

Spilanis, Ioannis (University of the Aegean, Greece). The attraction of small islands to business and residents: a European perspective.

Kao, Shao-Yuan (National Penghu University of Science and Technology, Taiwan). The Effect of Image and Travel Satisfaction upon Siyu Township Tourism of Penghu.

C-5 Island Tourism (Chair: Shyi-Liang Yu, NPU., 于錫亮教授)

Rolle, Sophia A., Minnis, Jessica & Bennett, Ian Bethell (The College of the Bahamas). The Impact of Tourism on Bahamian Society, Economy and Culture: A study of Bimini, Abaco and Mayaguana.

Fricke, Jörn (NHTV Breda, Academy of Hospitality and Facility Management, The Netherlands). Authenticity in commercializing culture tourism destinations on islands: the Case of Georgetown (Penang).

Fahie, Marsel (Long Look-Tortola, the Virgin Islands). To What Extent Could the Virgin Islands Cruise Tourism Industry Reduce the Risk to Business Continuity in the Event of a Natural Disaster or Man-Made Crisis?



Room D

D sessions: New waves in the ocean – Island communities & livelihood

D-1 Sustainability on islands (Chair: Ju Chou, National Taiwan Normal U., 周儒教授)

Lewis-Ambrose, Dana & Hodge, Derry (H. Lavity Stouff Community College, Tortola, British Virgin Islands). Responding to the Needs of a Small Island Community: Developing a Renewable Energy Training Programme in the Virgin Islands.

Hatayama, Yuki (Kagoshima University, Japan). How to counterbalance diverse issues of industrial development and nature protection in Kikai, the Amami Islands, Japan.

Huang, Wen-Hua & Lee, Su-Hsin (National Taiwan Normal University, Taiwan). Analysis of Lieyu Governance from Perspective of Place.

Tsai, Liang & Lin, Cheng-Shih (National Taiwan University, Taiwan; National Quemoy University, Taiwan). The Negative Impacts of State Subsidies on the Sustainability of Islands.

D-2 Local knowledge and economy (Chair: Ju Chou, National Taiwan Normal U., 周儒教授)

Breckwoldt, Annette (Leibnitz Centre for Tropical Marine Ecology, Bremen, Germany). The importance of local perceptions for small island marine resource use systems, with examples from Gau Island (Lomaiviti, Fiji).

Yamamoto, Sota, Kawanishi, Motohiro & Nishimura, Satoru (Kagoshima University, Japan). Food Security on Pingelap Island, Pohnpei State, Federated States of Micronesia.

Du, Yu-Han & Yu, Shyi-Liang (National Penghu University of Science and Technology, Taiwan). From the mountain to the island: Cross cultural adaptation and cultural reconstruction of indigenous migration in Penghu, Taiwan.

Hung, Pei-Hsun, Chen, Wei-Lin, Hsu, Pei-Hsin & Chao, Chih-Liang (Providence University, Taiwan). Spatial Evidences on Residential Perceptions toward Island Sustainable Development.

D-3 Island futures and connections (Chair: Su-Bing Chang, National Taiwan Normal University, 張素玢教授)

Larsen Topsø, Karin (Centre for Regional and Tourism Research & Aalborg University, Denmark). From Guilt to Engagement: out-migrated youth and their engagement in their home communities.

Austin, Linda (Australia). Paddling a balanced canoe: Voice and listening in advancing women's rights in the Pacific Islands.

Leijssen, Channa van & Tsai, Huei-Min (Leiden University, Netherlands; National Taiwan Normal University, Taiwan). Youth Island visions: Future dreams versus reality voiced by indigenous youngsters on Lanyu.

Holmes-Henderson, Arlene (University of Glasgow, UK). Heritage language stabilization and revitalization: what can Scotland learn from Hawaii?



D-4 Community communication and management (Chair: Chen-Hong Li, NPU., 李陳鴻副教授)

Lewis-Ambrose, Dana, Hodge, Derry & Dawson, Karl (H. Lavity Stoutt Community College, Tortola, British Virgin Islands). Financing within Small Island Community Colleges: Evaluating a Programme and Training Development Fund as a viable Alternative Model.

Kanayama, Tomoko (Institute of Advanced Media Arts and Sciences, Japan). Community Radio as Cultural Function for the Amami Islands of Japan.

Kang, Youngpil, Lee, Hanyoung, Kim, Daejoon & Kim, Jihee (Jeju National University, Korea). Role of Jeju Documentary films as Communicating means around MPAs.

Roy, Saswati (Visva Bharati Central University, Santiniketan, West Bengal, India). Extinction of a Pristine Livelihood in Response to Development: A Reciprocation from the Onge Community of Little Andaman Island, India.

Room E

E sessions: New Winds for Islands - Island technology and innovation

E-1 Small island technological fitness (Chair: Shyi-Liang Yu, NPU., 于錫亮教授)

Kakazu, Hiroshi (University of the Ryukyus, Japan). Okinawa's Green Technologies and Sustainable Development.

Uehara, Hideki (Meisei University). Seizing Opportunities and Challenges for Sustainable Small Island Economies: A Case of Development and Innovation in Okinawa

Matsumura, Yuko. (Osaka University, Japan). An overall research about energy development in remote islands in Japan: Case studies in islands without interconnection to mainland.

Wang, Ying-Wei, Fang, Shyang-Chyuan, Han, Tzeu-Chen, Kang, Huan-Chen & Lu, Cheng-Hao (National Penghu University, Taiwan). A hour-based electric-scooter rental model for island residents and tourists: The test case of NPUST.

E-2 Technical Innovations (Chair: Yueh-Chiu Wang, NPU., 王月秋副教授)

Ku, Fu-Neng (National Penghu University of Science and Technology, Taiwan). Model of Gravity blades.

Liao, Yi-Hung, Hsu, Chia-Chuan & Jhu, Jia-Yi (National Penghu University of Science and Technology, Taiwan). Development and Analysis of a Contactless Electrical Energy Transmission System for Island Power.

Lin, Wun-Hao, Wu, Hao-Ming, Wu, Wun-Chin & Wu, Hao-Chuan (National Penghu University of Science and Technology, Taiwan). Problems and Countermeasures of Small Wind Turbine Systems.

Tan, Paul Juinn Bing, Hsu, Ming-Tai & Hsu, Ming-Hung (National Penghu University of Science and Technology, Taiwan). Fault diagnosis of wind power generation systems.

E-3 Transport and energy (Chair: Yueh-Chiu Wang, NPU., 王月秋副教授)

Li, Sui-Ling, Hung, Fu-Jung Chris & Lin, Jing-Zhen (National Penghu University of Science and Technology, Taiwan). Measuring and Evaluating Route Selections of Off-shore Island Tourism Bus.



Wang, Yu-Jie & Han, Tzeu-Chen (National Penghu University of Science and Technology, Taiwan). Non-radial DEA measure for sustainability evaluation of small islands: Considering on inefficiency of undesirable outputs for electric vehicle.

Wu, Wun-Chin, Liao, Yi-Hung & Shya, Ming-Horng (National Penghu University of Science and Technology, Taiwan). Effect of National Penghu University of Science and Technology Windmill Park on the Domestic Small Wind Turbine Development.

Room F

F sessions: Taiwan Perspectives – Island futures and planning (in Chinese)

台灣觀點：島嶼未來的展望與規劃（中文發表）

F-1 Planning for Sustainability (Chair: Chyuan Yuan Shiau, National Ocean U., 蕭泉源教授)

Daniel TL Hung (Economic Affairs Department, Penghu County Government), Sustainable Development Planning of Penghu Island. (洪棟霖, 澎湖島嶼永續發展規劃, 澎湖縣政府建設處處長)

Chang, Lung-Cheng & Chen, Robert Y.S. (Penghu National Scenic Area Administration, Tourism Bureau; National Kaohsiung Normal University, Taiwan). The Analysis of Development Strategies of 'Alternative Tourism' in Penghu Archipelago. (張隆城、陳永森, 澎湖群島「替代觀光」發展策略分析, 澎湖國家風景區管理處處長、高雄師範大學地理系)

Jung-Fu Huang, Chia-Fa Li & Pao-Jen Chang (Kinmen County Government), Ecological and Conservation of The Horseshoe Crab in Kinmen. (黃榮富、李佳發、張寶仁, 三棘蟹在金門的生態與保育, 國立高雄海洋科技大學、金門縣政府建設處)

Alex Ya-Ning Yen (China University of Technology), The preparation for World Heritage nomination in Kinmen. (閻亞寧, 金門申請登錄世界遺產的整備工作, 中國科技大學建築系)

F-2 Connections and influences (Chair: Hsuan-Shih Lee, National Ocean U., 李選士副校長)

Hsu-Fu Yang & Cheng-Chi Chung (Dept. of Shipping and Transportation Management, National Taiwan Ocean University), High Speed Craft Service Market and Its Influence in Taiwan. (楊許虎、鍾政棋, 福建海峽高速客滾航運有限公司臺灣分公司、國立臺灣海洋大學航管系)

Tzeu-Chen Han, Arthur Sung & Chien-Chang Chou (Department of Shipping Technology, National Kaohsiung Marine University), Small Island Logistics Connection. (韓子健、周建張, 小島物流連結, 國立澎湖科技大學、國立高雄海洋科技大學)

Li-Hui Chang, Cheng-Shih Lin & Tsui-Wen Wang (Department of Tourism Administration, National Quemoy University), A Study on the Consumer Behavior's Characteristics of Tourists in Kinmen: Trend Analysis Orientation. (張梨慧、林正士、王翠雯, 離島觀光旅遊消費行為模式之研究：趨勢研究取向, 國立金門大學觀光管理學系)

Shiyi Bei (Department of Taiwanese Literature, National Cheng Kung University), The original culture and natural ecosystems of island's food and species literature. (石宜蓓, 島嶼食物和物種書寫的在地文化與生態, 國立成功大學台灣文學系)



F-3 Environmental education and resource management (Chair: Sho-Yuan Kao, NPU., 高紹源助理教授)

Min-Hwang Liang (Department of Nature Resources and Environment, National Donghua University), Facilitation and Mentoring for Environmental Education of Islands of Taiwan. (梁明煌, 台灣島嶼的環境教育促進與輔導, 東華大學自然資源與環境學系)

Chi-Chang Liu (Department of Ecological Humanities, Providence University), Immersing environmental education into ecotourism: stepping stone for Kinmen toward to sustainable development. (劉奇璋, 環境教育融入生態旅遊: 金門邁向永續發展的踏腳石, 靜宜大學生態人文學系)

Si-Min Lin (Department of Life Science, National Taiwan Normal University), The fertile biodiversity in the demilitarized zone: wildlife management on Kinmen Islands. (林思民, 豐饒的生物多樣性: 戰後金門的野地資源與管理, 國立台灣師範大學生命科學系)

Weng Tzu-Pao (Director-General of the Economic Affairs Department, Kinmen County Government), Sustainable Development Measures and Reflection on Island Globalization – The Example of Kinmen County Conceptual Master Plan. (翁自保, 島嶼全球化之永續發展對策與省思-以金門縣概念性總體規劃案為例, 金門縣政府建設處處長)

F-4 Heritages and development (Chair: Bowei Chiang, National Taiwan Normal U. 江柏煒教授)

Zhi-Jun Li (College of Humanities, Xiamen University), The Location of Marine Political Geography And the Governance of Qing Dynasty for the Penghu Sub-prefecture: Based Mainly on State Bailout of Storm Damage. (李智君, 海洋政治地理區位與清政府對澎湖廳的經略: 以風災的政府救助為中心, 廈門大學人文學院歷史系)

Chung-yu Chen (Institute of History and Philology), The prehistory of Matsu archipelago and Liangdao Man. (陳仲玉, 馬祖列島的史前文化與『亮島人』, 中央研究院歷史語言研究所教授)

Chao-Ching Fu (Department of Architecture, National Cheng Kung University), The Sustainable Strategy of Matsu's Military Cultural Landscapes as Creative Spotlight Sites for Cultural Tourism. (傅朝卿, 馬祖戰地文化景觀作為文化觀光創意亮點之永續策略, 國立成功大學建築系特聘教授)

Chaur-Giun Chen (Director-General of the General Affairs Department, Kinmen County Government) From Cold War to Change – Kinmen's Past, Present and Future. (陳朝金, 從冷戰到蛻變: 金門的過去、現在與未來, 金門縣政府行政處處長)

F-5 Ocean and coastal monitoring models (Chair: Jia Wei Tang, NPU., 唐嘉偉助理教授)

Shyang-Chyuan Fang (Dept. of Tourism and Leisure, National Penghu University of Science and Technology), Application of Structural Equation Modeling to Predict the Impacts on Ecosystem for Bridge Reconstruction Across Islands in Penghu, Taiwan. (方祥權, 以結構方程模式進行澎湖海域長期資料的生態系模式建構與預測, 國立澎湖科技大學)

Shyang-Chyuan Fang, I-Cheng Chang, Tai-Yi Yu (Dept. of Risk Management and Insurance, Ming Chuan University), Analysis of Spatial Features of Coastal Oil Pollution using Multivariate Methods. (方祥權、張益誠、余泰毅, 運用多變量方法分析海岸油脂污染的空間特徵, 國立澎湖科技大學、宜蘭大學環境工程系、銘傳大學風險管理與保險系)

Yu-Jie Wang, Tzeu-Chen Han (Department of Shipping Management, Penghu University of Science and Technology), Developing sustainability evaluation model of Penghu: Considering inefficiency of undesirable factors by no-radial DEA. (王昱傑、韓子健, 國立澎湖科技大學物流管理系)

Su-Chang Chen, Sin-Ting Jeng, Kuang-Hui Li, Ji-Rong Huang, Yu-Tong Chen & Pei-Jyun Lu (Dept. Marketing & Logistics Management, National Penghu University of Science



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and Technology), The Influence Factors on Students to Choose University of Penghu Islands in Taiwan. (陳甦彰、鄭心婷、李光惠、黃己容、陳昱同、盧佩君，影響學生選擇位於澎湖島嶼上之大學就讀因素研究，國立澎湖科技大學物管系系主任兼教務長)



Reception Session

Songs of Islands – Songs about island life and their lyrics

Facilitated by Anna & Godfrey Baldacchino, Malta

Oryu, Yoko (Kobe University, Japan). Contemporary Elegy of *Adieu Foulard, Adieu Madras* and French diaspora from the French Overseas Departments in the Caribbean.

Persoon, Gerard A. (Leiden University, The Netherlands). Frightened by the Eagle: Songs from the Island of Siberut (Indonesia).

Royle, Stephen A. (Queen's University Belfast, Northern Ireland, UK). 'Oh the Empire, it is finished' – 'England's got Rockall'.

Syaman Rapongan (Orchid Island, Taiwan). The Songs of Orchid Island - Flying fish and the Ballad of Tau.

R1

Contemporary Elegy of Adieu Foulard, Adieu Madras and French diaspora from Overseas departement of Caraïbe

Yoko Oryu, Kobe University, Japan Email: yoko.oryu@port.kobe-u.ac.jp

Adieu foulard, adieu madras is an old air of French West Indies. The farewell love song of Antilles in the days of steamers attracted islands visitors as well. In Metropolis, it has been spread through tremendous adaptations brought by for example Henri Salvador. However, it has not been well known that the histories of the Antilleans have been inscribed and have implemented décor on the air. They had sung it to bid farewell for over a half century, today rare Antilleans living both side of Atlantic Ocean break hush its exact notion up.

Guadeloupe and Martinique were taken as possession of France in 1635, were colonized for the use of Sugar cane plantation. It had been maintained by slave trade and slavery under Black Code. By the second decision of abolition of slavery on 27 April 1848, status of full-fledged French citizen was brought to the enslaved people. Guadeloupe and Martinique, with Guyana and Reunion as "vieilles colonies", become Overseas department by the law of 19 March 1946. In 1962 when French Government had come up with a new policy, Antilleans were called to immigrate to Hexagon -- Metropolitan France—in response to the recruitments of cheap labor. The issue of the slavery system in the past and the responsibility of the state over the system as popular interrogations have their root in the political movements of Caribbean African in Diaspora. Why has such a conscience been crystallized in the dawn of 21st Century?



This paper aims to explore the relation of contemporary Antillean with their histories through the song *Adieu foulard, adieu Madras*. Why today after 400 years ago, they don't stop talking about slavery and their heritage? To what extent was making of their identity correlated with evolution of an institutional framework "département d'outre-mer"? Finally this paper will give views to their collective reject of a concept "the diversity" to designate the French society.

To examine these questions the method used is interview. To focus on their experiences and their memories about the past and the present, the research invites them to talk their experiences through the impression about a song they shared, *Adieu Foulard, Adieu Madras*. It should be underlined that their different experiences with groups, generations of the immigration movement and their positioning in the contexte of social mutation are gravured alongside of the collective perception of the song. The paper discusses about the case with "womens movement", from the perception of the song, a long processus of the transformation of mind and social norms, which definitively turned in 1983, and the importance of the song as unique patrimony.

R2

Frightened by the Eagle: Songs from the Island of Siberut (Indonesia)

Gerard A. Persoon

Leiden University, the Netherlands. Email: persoonga@fsw.leidenuniv.nl

Singing is the most important element of the music culture on Siberut, the largest of the Mentawai Islands (West Sumatra, Indonesia). There are various types of songs on the island. Some of them are related to the world of spirits and ancestors. These are mainly sung by the medicine men during healing ceremonies and rituals. Other songs can be made by men and women during their daily activities, when they are fishing at sea or when they take a rest while collecting products from the forest. Various animals (birds, primates, reptiles) or natural forces (wind, thunder) can inspire people to think of lyrics and melodies. The same counts for special events such as the arrival of a logging company on the island. People also sing while mourning after the death of a relative. Songs and lyrics are learned through imitation and so-called cueing. In this way songs can spread all over the island. In recent years



young islanders also transform some of the traditional songs into what they love to call 'Pop Mentawai', by adding modern instruments and new rhythms.

In this paper I will discuss the songs and lyrics that were compiled and recorded over an extended period of fieldwork on Siberut. This production of a CD with traditional music, and its presentation in the community also led to a discussion about how music is actually defined.

Oh the Empire, it is finished' – 'England's got Rockall'

Stephen A. Royle, Queen's University Belfast, Northern Ireland, s.royle@qub.ac.uk

Rockall is a granitic knoll of 784 sq m in the North Atlantic, 370 km from inhabited land. It has no economic value but was a prize when it was thought possession could command an exclusive economic zone. Iceland, Ireland and Denmark laid claim, whilst the UK annexed Rockall in 1955 and in 1972 declared it to be part of Scotland. However, the United Nations Convention on the Laws of the Sea (1982) precluded rocks incapable of supporting life to be awarded economic zones. Interest in Rockall then reverted to symbolism, especially its occupation by Greenpeace in 1997 when the global state of Waveland was declared from its 21m summit.

Disputes over island sovereignty can be serious, especially in Asia, with sabre rattling between nations battling for island territories. Regarding Rockall, the saga resembled more comic opera than high politics with people competing to see how long they could 'live' strapped to the rock to boost various national and micronational claims. It was not all Ruritanian; ownership of Rockall got entangled with the Cold War when its possession was deemed necessary to secure the UK's missile testing site on the Western Isles, Rockall's distant if nearest neighbour.

An element in the sovereignty dispute was song. Two were especially significant. The 1950s was an era of post-war decline in the UK: the empire was fading; the Suez Crisis happened; Prime Minister Macmillan was to speak of the 'winds of change'. However, in 1955 in its last imperial act the UK annexed Rockall, an action parodied by the comedic duo (Michael) Flanders and (Donald) Swann in Rockall (1956):

Though we're thrown out of Malta,
Though Spain should take Gibraltar,
Why should we flinch or falter



When England's got Rockall.

There was another target to the satire for 'Rockall' was pronounced in the last line to sound like a rude way of saying England had nothing, a line which passed the censors then still operating. As Swann put it, "the lyric looked innocent enough written down..."

In addition to satire, songs can also convey political messages as with Rock On Rockall (1973) by the Irish band, The Wolfe Tones. Their name commemorates Wolfe Tone, leader of the 1798 rebellion against English involvement in Ireland and the band is an Irish institution after decades of performing in the nationalist tradition. They sang that although the British Empire was finished, the 'greedy eye of England' was turning to Rockall, only for the band to warn 'keep your hands of Rockall; it's Irish to the core'.

These may not be 'island songs' being about rather than from Rockall and they have other messages: loss of empire, Irish nationalism, even a swipe at censorship, but the story they illustrate sings to the situation of other disputed islands, populated and otherwise.

MacDonald, F (2006) 'The last outpost of Empire: Rockall and the Cold War', *Journal of Historical Geography*, 32.

Royle, S.A. (forthcoming, 2014) "'This mere speck on the surface of the waters": Rockall a.k.a. Waveland', *Shima*.



The Songs of Orchid Island - Praise the ocean / Syaman Rapongan

海洋的禮讚

Praise the Ocean

夏曼·藍波安

Syaman Rapongan

Raodan ko pala o icakalamat na l malowaji

讓我們為廣袤汪洋歌唱

Let's praise and sing to the vast ocean

a iloyib do minalowalovang rana

以及為多樣豐腴的魚類歌唱

As well as to the diverse and abundance fish

o sominayisayi Jilangaraen na

從淺灘到無垠的海平線

From the shallows to the expanse of the sea horizon

iya lovalovang no analasan no valay

讓我們民族世世代代繁衍

Let our people grow sustainably

a jita tomilavoyi do pozo ya

讓我民族的韌性如巨岩般的結實

Let our islanders' resilience become as strong as rock

jita l yavavakogi a asa minijid

我們如此歌頌海洋之魂

We praise the spirits of the ocean.



Abstracts

Keynotes

Keynote 1

Barbados +10 and the Significance of the 2014 UN International Year of Small Island States.

Prem Saddul, Chairman, Central Water Authority of Mauritius & Member of the National Strategic Committee on “Maurice Ile Durable, Mauritius.”

In 1994, the International Community gathered in Barbados to agree on a broad-based plan of action for the Sustainable Development of vulnerable Small Island Developing States. The Barbados Plan of Action (BPoA), which translated the Rio 1992 Agenda 21 into specific policies, actions and measures to be taken at national, regional and international level was globally agreed upon. The Programme of Action was a prescription, based on specific priority areas to integrate the Small Islands Developing States into the world economy. Since then each Small Island State has been working based on their own agenda.

Ten years later, in January 2005, soon after the devastating and deadly Indian Ocean tsunami, the International Community met in Mauritius to make a critical assessment and review of the efforts made by SIDS towards achieving the goals of sustainable development. The assessment was that much of the BPoA had remained unimplemented.

Another boost was given to the BPoA which was reflected in the Mauritius Strategy and Mauritius Declaration. A call for drawing a road map which would serve as a guideline for implementation of the Mauritius Strategy, networking and a better system of monitoring were among the objectives of the Mauritius Declaration.

Twenty years later, the United Nations have declared 2014 as the International Year of Small Island States. The keynote presentation addresses the significance of the 2014 UN International Year of Small Islands and makes a critical assessment of the BPoA with focus on programmes and actions taken by Islands of the South West Indian Ocean under the Indian Ocean Commission group. The case of Mauritius will also be presented as a model of a “ Sustainable Island”. This could be a mirror for other Small Island States. The hour is becoming late and without a redoubling of political will, commitments, efforts and actions, many Small Island States will miss the train of sustainable development.

Key words: Barbados+10, Small Islands, Sensitivity and vulnerability, Sustainable Development, International Year of Small Islands, Indian Ocean Commission, Maurice “Ile Durable”



Keynote 2

Small Island and Climate Change: Adaptation and Innovation

Mark Bynoe, CCCCC, Senior Resource Economist and Head, Programme Development and Management, Caribbean Community Climate Change Centre, Belmopan, BELIZE

Small Island Developing States (SIDS) are a distinct group of developing countries confronted with specific economic, environmental and social vulnerabilities and risks. They are often characterised by, inter alia, narrow resource base depriving them of the benefits of economies of scale; significant debts that reduces the fiscal space within which they operate, small domestic markets, extreme openness of their economies and heavy dependence on a few external and remote markets; high costs for energy, infrastructure, transportation, communication and servicing; long distances from export markets and import resources; low and irregular international traffic volumes; little resilience to natural disasters and climate extremes; growing populations; high volatility of economic growth; limited opportunities for the private sector and a proportionately large reliance of their economies on their public sector; and fragile natural environments with low adaptive capacity that exacerbate their vulnerabilities while simultaneously reducing their resilience to growing global challenges, such as climate variability and change. They are, therefore, identified as being highly disadvantaged in their development process, hence requiring special support from the international community and development partners.

In fact, the Commonwealth Expert Group on Climate Finance indicated that climate variability and change are reversing some of the gains made on poverty alleviation, economic growth and stability across the world under the Millennium Development Goals (MDGs). The challenges posed by climate variability and change are existential for many small Islands like Grenada in the Caribbean where a low category 3 hurricane destroyed 200% of the Island's gross domestic product (GDP) in 2004, or Kiribati in the Pacific where the government has put in place a relocation strategy based on the concept of migration with dignity – stating that climate change threatens the survival of the country; or in Seychelles in the Indian Ocean in 2013 where a tropical cyclone caused damages in excess of 77% of the Island's GDP. As such, strategies adopted for SIDS can no more be predicated on the “business as usual” (BAU) scenario and contentions that have lost their usefulness, but on transformative, innovative, proactive, sensible, and practical measures seeking to respond to the real and existential threats of global climate change while simultaneously exploiting the opportunities they present. This presentation seeks to highlight some of the opportunities posed by climate variability and change and how these are being exploited by SIDS. It seeks neither to be prescriptive nor to argue that we can necessarily adapt our way out of the current spate of challenges presented. It rather aims at outlining some positive and innovative measures being pursued by SIDS to combat the threats posed by climate variability and change.



Adaptation to climate variability is not new, but climate change is presenting heightened challenges, exposing certain vulnerabilities locally and nationally, and increasing the combination of risks with potentially grave consequences. But SIDS are not sitting around waiting for a global automated teller machine (ATM) to turn up as it is clear that navigating the labyrinth to access climate financing remains arduous and complex. Rather, they have been taking action, in the devising strategies and action plans, reforming policies in the energy and water sectors, establishing partnerships and pursuing cost-effective adaptation measures in energy sector such as SIDS DOCK in 21 SIDS, ocean thermal energy conversion (OTEC) in Aruba, and wind turbines in Cape Verde and striving for energy independence; embracing ecosystem-based adaptation approaches through mangrove reforestation in Guyana and Suriname; striving for water security through OTEC, water harvesting and saltwater reverse osmosis (SWRO) utilising renewable energy sources; engaging communities in managing marine protected areas; encouraging SMART agricultural practices for greater agricultural, food and nutritional security; and putting in place risk transfers mechanisms and tools such as in the Caribbean Catastrophe Risk Insurance Facility (CCRIF), Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) and the Caribbean Climate Online Risk and Adaptation Tool (CCORAL). These are just a few of the many innovative and technology advances the SIDS are pursuing. We cannot wait we have to act because the cost of inaction far outweighs the price of acting today!

The presentation outlines some the positive, transformative and proactive measures being pursued and sets out some messages that we need to keep promoting. These are: (i) SIDS are taking the lead, it is time for others to follow, (ii) we can do this together as indicated through the SIDS Island Partnership framework, and (iii) keep challenging the world to get on board and to commit as the SIDS have through, inter alia, converting long term debt into investments, improve energy efficiency, and fulfill the pledges made.

In concluding, it is important to make the following points: (i) adaptation to climate change should start with the adoption of measures that tackle the weather risks that SIDS already face, for example, more investment in water storage in drought-prone basins or protection against storms and flooding in coastal zones and/or urban areas. Climate change will exacerbate these risks, thus the need to keep promoting a risk ethic, (ii) beware of creating incentives that encourage mal-adaptation, (iii) hard and soft approaches to adaptation are two sides of the same coin. Good policies, planning, and institutions are essential to ensure that more capital-intensive measures are used in the right circumstances and yield the expected benefits, and (iv) calculate an adaptation business case, including an investment plan for greater private sector involvement. It is clear, Mr. Chairman, that climate has change, will continue to change and therefore demands change in thinking, attitudes and approaches from us all. I thank you.



Keynote 3

Small is Beautiful – Island Development as if People Matter

Eric Clark, Department of Human Geography and Lund University Centre of Excellence for the Integration of Social and Natural Dimensions of Sustainability (LUCID), SWEDEN

E. F. Schumacher's *Small is Beautiful – Economics as if People Matter* (1973) rapidly became highly influential, not least in circles of environmental and social movements and countercultures. And yet it has not had so much impact on mainstream economics, culture and politics. 1973 saw also the Pentagon-designed 9/11 coup d'état in Chile, initiating the first major experiment in neoliberalization, orchestrated by Milton Friedman and 'the Chicago boys', and signalling the ascent of neoliberalism as globally hegemonic ideological project. Neoliberalism – economics as if people do not matter – swept the planet. *Small is Beautiful* did not.

Emblematically, Theodore Roszak (author of *Where the Wasteland Ends*, also 1973) wrote the introduction. In addressing the role of economics, peace and permanence, Buddhist economics, the proper use of land, nuclear energy, socialism, and ownership, among other issues, Schumacher delivered radical critique of dominant economic ideology/rationality, as well as solid arguments for developing alternative ways forward, toward smaller more beautiful solutions to pressing societal problems, based on an economics as if people matter. The 2010 edition includes a new foreword by influential environmentalist Bill McKibben (co-founder of 350.org), the front cover claiming status of a "classic that taught us to value communities over corporations".

This paper reflects upon the influence Schumacher's ideas have had in mainstream economics, culture and politics, and how *Small is Beautiful* remains highly relevant for island development. Not just any island development: island development as if people matter.



ISISA Islands of the World XIII *Small is Beautiful: Island Connections and Innovations* Penghu Archipelago, Taiwan, 22-27 September 2014

20th Anniversary ISISA – Islands of the World conferences 1994-2014 ISISA past and future – Sharing Experiences: From Okinawa to Penghu

Grant McCall, Beate Ratter, opening the exhibition

International Island Studies Association (ISISA)

1994 - 2014

ISISA Conferences Islands of the World III (1992) – XIII (2014)

General Data

Type: non-profit and non-governmental organisation
 Founded: 1994
 Existence: 20 years
 Executives: 25
 President: Grant McCall

Honorary Member

Theo L. Hills
 Founding president of ISISA

ISISA Executive Committee

PRESIDENT: Grant McCall
 Department of Anthropology
 The University of Sydney

VICE PRESIDENT: Godfrey Baldacchino
 Canada Research Chair in Island Studies
 University of Prince Edward Island

SECRETARY: Graeme Robertson
 Habitat Scotland
 Loch Innoch

TREASURER: Stephen A. Royce, MRIA
 School of Geography, Archaeology and Palaeoecology
 Queen's University Belfast

COMMUNICATIONS OFFICER: Clyde M. Sakamoto
 Chancellor Maui College

Committee Members

Laurie Brinklow
 Institute of Island Studies
 University of Prince Edward Island

Ray Burnett
 Scottish Centre for Island Studies
 University of the West of Scotland

Beate M.W. Ratter
 Institute of Geography
 University of Hamburg

Elaine Stratford
 Head of School
 School of Geography and Environmental Studies
 University of Tasmania

ISISA
 International Small Islands Studies Association
 Foundation Charter

Preamble
 A group of scholars, researchers and other interested persons from around the world concerned with small islands first organised an international conference in Victoria BC, Canada, in 1986 to discuss their common interests. The first 'Islands of the World' conference was followed by further meetings in Tasmania (1988) and the Bahamas (1992). At the 'Islands of the World III' Bahamas meeting, it was decided to form a continuing organisation and that this body would hold its first meeting at the 'Islands of the World IV' Conference in Okinawa, in June 1994. Subsequent conferences have been held in Mauritius (1998), Isle of Skye (2000), Prince Edward Island (2002), Kinmen, Taiwan (2004), Maui, Hawaii (2006), and Jeju, South Korea (2008). At the 11th Islands of the World Conference held in 2010 in Bornholm, Denmark, it was agreed to limit the size of the Executive Committee, and introduce an Advisory Council.

Article I. Name
 A) The name shall be the International Small Islands Studies Association (hereinafter known simply by its acronym in English, ISISA).

Article II. Objectives of ISISA
 A) To advance the study of islands;
 B) 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;
 C) To promote the active participation in the Association's affairs of members from small islands.

Article III. Activities
 A) ISISA shall aim to link people interested in small island matters through international communication, such as newsletters, journals and periodic conferences.
 B) ISISA shall be independent, non-profit and educational.

[...]

Media used by ISISA

Newsletter
 • regularly sent since 2007
 • 2 newsletters per year
 • Editor: Anna Baldacchino

ISISA Website
 • launched in 2006
 • URL: <http://isisa.maui.hawaii.edu/>
 • Web Master: John Franks

Yahoo Groups
 • since 2006
 • 523 members
 • URL: <https://groups.yahoo.com/neo/groups/ISISA/info>

Facebook
 • since 2011
 • Contact person: Grant McCall
 • URL: <https://www.facebook.com/isisa-international-small-islands-studies-association>

Logo designed by: Beate Ratter (2014)

ISISA Website designed by: Beate Ratter (2014)

ISISA Newsletter designed by: Beate Ratter (2014)



Plenary Panel Session A

Innovation and Island Futures – green energy, tourism and sustainability

This session addresses pertinent and very timely questions facing most island policy-makers and development actors on how to bridge the dual demands of continuous economic performance and development whilst taking measures to ensure sustainable futures for islands and their inhabitants. What are the island-specific challenges when dealing with sustainable development? Which development scenarios are most likely? Can green technologies and innovations drive economic development? What are the challenges facing sustainable island tourism? And which concrete measures as well as approaches should island communities take when addressing here-and-now challenges as well as future challenges?

Professor Godfrey Baldacchino commences this session with a keynote giving a broad overview of island development up to the 21st century; explaining current island development by looking at the main models of island economic performance; and discussing the possible evolution of these forms into other, futuristic ones, using different scenarios along a green/blue - hi-tech scenario spectrum.

Distinguished panelists Professor John K.C. Liu, Professor Kakazu Hiroshi and Dr. Clyde Sakamoto will respond and provide debate by supplying with rich knowledge on green technologies, tourism and sustainable development issues as well as concrete experiences based on three diverse island perspectives: Okinawa, Japan's only small island prefecture; three Taiwan Strait islands sandwiched between mainland China and Taiwan: Penghu, Kinmen and Matsu; and the remote US Hawaiian islands.

Panelists:

Godfrey Baldacchino, Professor of Sociology, Department of Sociology, University of Malta.

John K.C. Liu, Institute of Building and Planning, National Taiwan University, Taiwan (Professor Emeritus).

Kakazu Hiroshi, University of the Ryukyus, Japan (Professor Emeritus)

Clyde Sakamoto, Chancellor of Maui College, University of Hawai'i. U.S. A.

Karin Topsoe Larsen, Centre for Regional and Tourism Research, Bornholm and Institute of Planning, University of Aalborg, Denmark (Facilitator).



Plenary Panel Session B

“Journey across home” – Migration as solution?

The topic of migration has long been a pressing issue for island communities. Whether for employment, for study or under duress, islanders have left their homes and set up new lives elsewhere. The question which this panel considers is whether migration represents a solution or a threat to the island community. Migration between islands, towards islands and from islands has always been, and still is, a mainstay of island communities. However it has been exacerbated in recent years by the effects of climate change: sea level rise, droughts, heavy storms and rainfall. Under these threatening conditions, many individuals and families have been forced to migrate for safety.

The panelists will bring perspectives from the Pacific, the Caribbean, Europe and Southeast Asia. They will individually, and collectively, consider the social, environmental, economic, linguistic and political effects of migration, both inward and outward, for island communities.

Keynote Abstract

Dr Jonathan Pugh ‘Being in exile at home: what is Caribbean development?’

Dr Pugh will not be speaking on migration per se, but, rather, wider issues of how ideas and cultures travel and become settled within the Caribbean. He will tell the story of Caribbean government officials who do not seek freedom by leaving or migrating from Caribbean islands, but, rather, struggle to create freedom on their island because they have yet to discover what 'Caribbean' development would mean. The 'journey across home' to freedom could, therefore, be construed as a journey against the Caribbean person's own self; their inherited and imported frameworks of reasoning. In this regard, the themes of movement, migration and exile are considered from the perspective of those who stay on the island. In particular, he will consider how Caribbean institutions can therefore both feel like (and yet also not feel like) their own; hence, the title 'in exile at home'. Building on the panel discussion of migration, traditionally understood, he will address the themes of movement and creolisation in new and different ways.

Panelists:

Elaine Stratford, University of Tasmania, Australia

Dana Lewis-Ambrose, H. Lavity Stoutt Community College, Tortola, British Virgin Islands

Jonathan Pugh, Newcastle University, UK

Bo-Wei Chiang, National Taiwan Normal University, Taiwan



Island Community Forum

Progress in Sustainability- the impact of ISISA on our Campus, Islands and State since 2006

Keynote

Clyde M. Sakamoto, Chancellor, University of Hawai'i Maui College

Since the IXth Islands of the World Conference was held on our Maui in 2006, the International Small Islands Studies Association (ISISA) has had a continual and positive impact on “sustainability” at University of Hawai'i Maui College (UHMC). This presentation will present a UHMC overview of recent, current, and future developments that will spur education – related degrees as well as industry – related renewable energy, electric vehicle, geographic information systems, food innovation and security, and other initiatives. Additionally, progress on the island of Lanai's aspiration to become a global example of island sustainability will be introduced with a prospective invitation to request the 2018 or 2020 ISISA Conference to be held on this island. Finally, an introduction of a joint proposal to include ISISA, the Pacific Postsecondary Education Council and the Lanai island leadership (Pulama Lanai) to explore a collaboration on island sustainability will be described.



Island Community Forum

Island Community Report:

Toward Island Sustainability: Satoyama-Satoumi nature-culture interactions as the basis for a low-carbon future at Chi-Mei Island

Huei-Min Tsai¹, Horigomei Kenji², Chung-Twn Kuo³, Amy Sheehan Latva-Kokko⁴, Kenneth Martin Kao⁴

¹Graduate Institute of Environmental Education, National Taiwan Normal University

²Department of Architecture, Chung Yung Christine University

³Principle, LEF- Laboratory for Environment & Form

⁴Kao Design Group, Inc.,

The Japanese concepts of 'Satoyama' and 'Satoumi' form a conceptual foundation for collaboration and innovation on Chi-Mei Island. 'Satoyama' describes sustainable interactions between humans and terrestrial ecosystems whilst 'Satoumi' illustrates stewardship of marine and coastal ecosystems. The concepts establish a framework for the island's livelihood and establish the basis for planning a low-carbon sustainable future.

This road map toward a low carbon future proposes to engage the community and foster dialogue amongst key stakeholders. Life-long residents, recent immigrants, experts from Penghu and Taiwan, and global consultants have begun to identify and inform holistic synergies. Opportunities, constraints, strategies, and tactics are evaluated within the sectors of quality of life, invigorating economy, environment, land and sea, and energy.

Quality of life is linked with the island's economy. An important step is to change the tourism paradigm to minimize environmental damage while enhancing economic and cultural value. As has begun with weddings, in which visits are longer and thereby more engaged on-island, the standard High Carbon-Low Value visits are transforming to Low Carbon-High Value visits. More jobs will make the island more attractive for young people to stay.

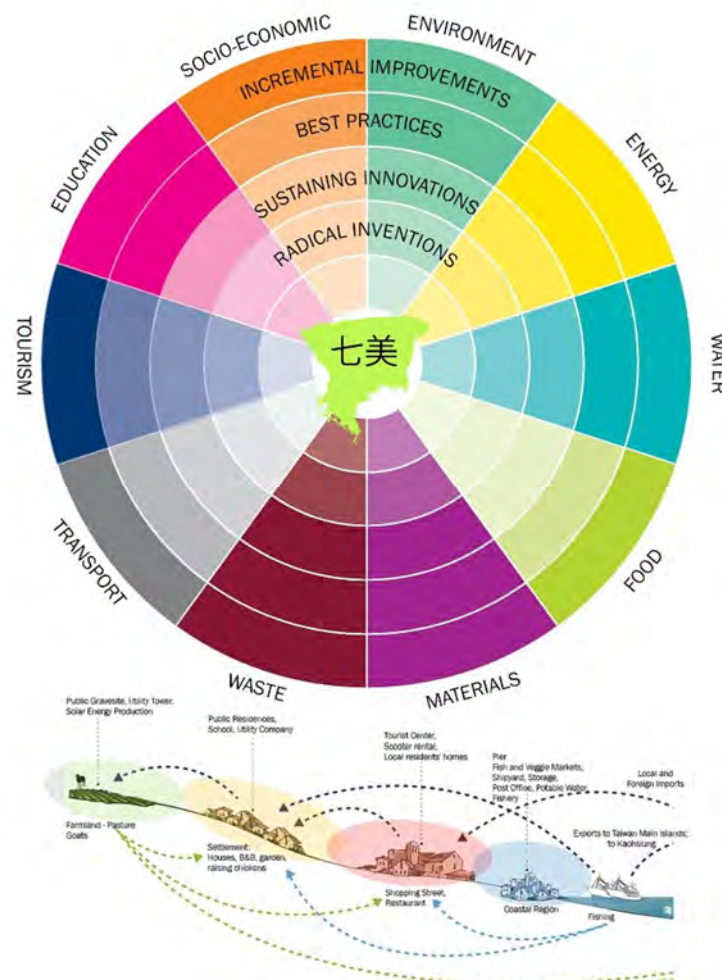
Environmental quality effects water, soil, air and foods. The Satoyama concept serves as a guide to protect and regenerate the island's natural terrestrial resources. In future road development, filter run-off catchment to manage stormwater, provide low-pollution transit to get around island. Develop holistic overview of sewage treatment, including low-impact sewage treatment. Similarly with waste management, build on existing recycling programs. Keeping trash out of the Sea supports the Islanders' ethos of care for the ocean.

Inherent to Satoyama and Satoumi is to conserve, preserve and restore both terrestrial and marine environments. Identify conservation areas and growth

corridors, preserve public open space and agriculture on island, and protect the archeological site. To identify optimal location for wind turbine, balance flights, birds, acoustic, and flicker. In the urban waterfront district, build up to grow, while learning from Island vernacular in which traditional homes manage microclimate and comfort with courtyard design that allows passive cooling in summer and protection from winds in winter. At the Waterfront, balance civil defense barriers with sensitive species regeneration. Remove dock and restore beach, preserve and protect fish weir.

Chi-Mei offers abundant natural resources to develop on-island clean renewable energy. Expand distributed Photovoltaic installations for buildings, tie back to grid, or remain off-grid. For other local islands: low sound, highly efficient generator. Consider addition of large PV array and battery and/or wind turbine coupled with generator that can be powered down.

In all efforts, build on local knowledge. Chi-Mei can serve as a prototype for an Eco-Island Tourist destination. Select initiatives warrant further research and development and prototype installation at Chi-Mei to improve quality of life on island.





A sessions: Small is beautiful – Island studies and cultures

A-1 Literature and poetics

A-1-1 Brinklow, Laurie (University of Tasmania, Australia). **My island is the house I**

sleep in at night: The poetics of island space. Email:

Laurie.Brinklow@utas.edu.au

The intensity of island living resonates in bounded and intimate spaces, from our bodies to our houses to poetry. Inspired by Gaston Bachelard's deeply philosophical yet lyrical book, *The Poetics of Space*, I explore the island as body/house/poem. As John Murray (1999) reminds us, like an island, 'Every person born in this world has a coast, an edge, a boundary, a transitional zone between themselves and the world' (in Gillis 2012, 158). The water currents and waves lapping the island, the air currents caressing our skin, the wind rustling the curtains, the metaphors of meaning that wash over us – are all the life force (or 'retentir'), 'filling it to its limits, into a vibrating, sonorous world...' (Bachelard 1994 [1958], xvii). Just as the hard rock and sand beach, riprap and wharf, insulate the land from the battering tides, the insulation in the walls determine how drafty the house is, or how much sound permeates. A house's rooms and nooks and crannies are like our stored memories, as are the places on our islands we know intimately and hold dear. The hearth is the centre of the house, the beating heart of the body, and the 'homeness' of an island. Writes Bachelard, 'All really inhabited space bears the essence of the notion of home' (5). An island, an intimate space, is where so many 'drifters' have found home. Just as our psyches contain the conflicting feelings one may have for one's island – cocoon or prison – the walls of our homes hold and nurture the family within, or keep the world out, buffet the family from 'the other', or offer a threshold. And, finally, just like an island's boundedness distills life to its essentials, so, too, does the distilled form of poetry, with words and images carrying meaning beyond the bounds of the page: 'Through poems, perhaps more than through recollections, we touch the ultimate poetic depth of the space of the house' (Bachelard, 6).

Based on interviews with artists on the east and west coast islands of Canada, in Tasmania and its offshore islands, as well as on my own poetic imaginings, I explore psychologies of islandness through the poetics of island space.



A-1-2 Graziadei, Daniel, Hartmann, Britta, & Riquet, Johannes (University of Munich, Germany; University of Vechta, Germany; University of Zurich, Switzerland). **The Politics of Islands in the Literary Imagination**. Email: johannes.riquet@es.uzh.ch

The proposed panel will consist of three papers given by delegates from the Island Poetics group. Island Poetics is an international research project led by a group of young researchers from Switzerland, the UK, Ireland, Malta and Germany, who have all written or are currently completing their PhD theses on literary islands. The members of the research group meet on a regular basis and have participated in and presented papers on the poetics and politics of the island at a number of workshops and conferences. The aim of the project is to go beyond earlier approaches to island fiction that tend to focus on reading the island as a trope for colonialism, and instead develop a more sustained understanding of the spatiality of the island in its multiple configurations. The group will organise a workshop in 2015 and publish a themed volume.

We would like to emphasise, however, that we would also be perfectly happy to have our individual contributions be assigned to different panels of the conference should the organisers prefer this. We would also like to point out that one of the abstracts (the one by Daniel Graziadei) was already submitted and accepted for presentation at an earlier stage.

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A-1-3 Hartmann, Britta (University of Vechta, Germany). **Pursuing an Island Fiction: The Poetics Surrounding Robinson Crusoe.** britta.hartmann@uni-vechta.de

Daniel Defoe's Robinson Crusoe (1719) plays a fundamental role in human engagement with islands, both for itself and through the narratives that came in its wake. This paper will examine travelogues and related texts that write back to Robinson Crusoe. The poetics of Robinson Crusoe and its legacy create a sense of yearning for many readers and writers. This yearning is acted out in reality, as people seek Crusoe's paradise amongst the islands of the world. Crusoe's island, in this respect, becomes a place where one can be cast away into an aesthetically beautiful small island paradise.

Key texts—including J. Ross Browne's Crusoe's Island (1864), Macdonald Hastings's After You, Robinson Crusoe (1975), Diana Souhami's Selkirk's Island (2001), Thurston Clarke's Searching for Crusoe (2001), and Tim Severin's In Search of Robinson Crusoe (2002)—will be analysed through the theoretical lenses of island studies, cultural geography, and literary studies. This will allow an examination of the manner in which real islands (most importantly Robinson Crusoe Island and Tobago) have been overlaid with the Crusoe narrative.

Fact and fiction, I argue, share a complex relationship in Crusoe travelogues. These texts are often driven by the search for authenticity: Robinson Crusoe becomes a mere vehicle through which historical events are accessed. Sources for Defoe's story—such as the real experiences of Alexander Selkirk—are often discussed in such contexts. Ultimately, however, it is the power of the fictional that becomes most apparent: though Selkirk has had an island named after himself, the actual island on which he was stranded is known by the name of his fictional counterpart, Robinson Crusoe. Fiction has overtaken fact, and Selkirk has been relocated to another island to make room for Crusoe.

An analysis of the poetics surrounding Defoe's Robinson Crusoe gives original insight into human engagement with islands. We imagine islands through iconic island narratives; as a result, real islands are inscribed with fictional topographies. The perceived smallness of insular spaces plays a significant role in this process. Crusoe-seekers are able to cultivate a sense of fondness for, and attachment towards, their respective islands through small island spatiality. Small is beautiful in the pages of Crusoe travelogues, and islands are re-imagined accordingly.



A-1-4 Riquet, Johannes (University of Zurich, Switzerland). **Caught Between Water and Land: The Politics and Poetics of Angel Island.** Email: johannes.riquet@es.uzh.ch

Etymologically, island means “watery land.” The interplay between water and land is not only a geographical condition of islandness, but plays a central role in many representations of islands. Smallness in itself does not adequately explain the specific poetic appeal of islands – indeed, an exclusive focus on smallness runs the danger of excluding the hydrosphere as a constitutive part of any island. My basic premise is that America has variously been imagined from islands, and that the intimate relation of land and water has been central to the figuration of American arrivals. This paper will focus on Angel Island, the gateway to America for Asian immigrants from 1910 to 1940, and offer an analysis of the specific island poetics unfolding in the poems scratched in the barrack walls by prospective Chinese immigrants detained on the island.

Few studies of literary islands take the spatiality and physicality of the island seriously. This paper offers a corrective approach. I will draw on geopoetics and phenomenological approaches to space to analyse the specific island poetics constructed by the Angel Island poems. The analysis will be complemented by a brief examination Orson Welles’s 1947 film noir *The Lady from Shanghai*. In both the poems and the film, poetics and politics cannot be separated from each other as the figurative potential of the island is mobilised to offer meditations on immigration and cultural dislocation.

As my analysis will demonstrate, the poems are structured by a tension between a vision of the island as an open in-between space connecting China and the American mainland via water, and the frustration of this mobility; the water poetically freezes and the island becomes a claustrophobic space. Angel Island is neither mentioned nor shown in *The Lady from Shanghai*, but the various references to imaginary islands and the final scene on San Francisco’s waterfront silently evoke it; the film is concerned with immigrants who are never fully at home in America, and to whom water fails to offer the promised escape.

The paper should prepare the ground for a discussion of the island as a site of cultural translation and displacement, and might lead to questions like the following: To what extent does an analysis of the island as a space of heightened imaginative activity help us to come to terms with the experience of both the promises and the hardships of migration? What happens when small is no longer beautiful, but the very opposite?



A-2 Language, culture, and history

A-2-1 Currie, Mark (University of Prince Edward island, Canada). **Those who repeat history are not always doomed: The preservation of culture and nature to bolster Dominica.** Email: mtcurre@upe.ca

Development, progress, moving forward: these are just some of the ideas and values that nations strive to incorporate while creating successful economic development strategies. Small island nations must be especially meticulous in setting goals as there can be dynamics at play where success or failure is often magnified; these can include pressures on resources, contested space, or risk of losing skilled citizens. The saying goes that those who ignore history are doomed to repeat it, but perhaps a more positive spin on this would be that those who take notice of history can discover the pathways to triumph. Through this paper, I investigate the ways that the Commonwealth of Dominica, a small island within the chain of Caribbean islands, is looking to the past in order to move forward into the future. By working to revive and preserve the traditional cultures of the Creole people and the Kalinago people – the remaining population from pre-colonial times – and the lush and mountainous natural surroundings, Dominica is carving its niche in the tourism market while maintaining a distinct identity that was recognized by early Europeans and is now being utilized to improve the island's economic prospects.

Grounded in qualitative research based on government policy documents, tourism promotional literature, media accounts, and related scholarly analysis, I describe aspects of the Creole culture –largely in relation to musical traditions – and the Kalinago culture such as language, tradition, and artisanship. How the Creole culture positions itself in relation to the Kalinago culture is examined to understand the scope of influences on how Kalinago traditions and ecotourism might be sustained. The examined traits of the Kalinago community are strongly connected to the land on which they live and so the relationship between Kalinago culture and ecotourism is strong. Based on media reports, recorded personal testimony, and critical commentary, I search for limitations to cultural practices due to policies and I explore whether using Kalinago culture for tourism development is inclusive or abusive, whether promoting ecotourism is bettering or battering the ecosystem, and how ecotourism impacts the ability to truly preserve the Kalinago culture. The benevolent intentions of these developments appear genuine, but inevitably meet with resistance from various Dominican voices who do not feel that they are sufficiently represented – despite the proposed benefits to the Kalinago people economically and culturally, which would theoretically contribute to a strengthening of their identity.



A-2-2 Stratford, Elaine (University of Tasmania, Australia). **The body, the island, the water: critical reflections on the geopolitics of forms of drowning.** Email: Elaine.Stratford@utas.edu.au

In recent work, US-based emerging artist, Ashley Samuela Raasch, has been examining how water marks the body. Indirectly, Raasch's work underscores the importance of thinking about what happens at the intersection of bodies, bodies of water, and the body of the island. En route to seeking asylum, perhaps being turned back from another's shores, such as is the case in Australian territorial waters at the present time, what does it mean to be a body all at sea? What does it mean to be on a heavily fortified peninsula such as Guantánamo Bay that serves as a carceral 'island' where waterboarding constituted the body as bare life (Agamben, Butler, Gregory)? Or what might it mean to be the body of the drowned off island coasts now 'haunted' by shipwreck (haunting refs). How might such examples of islands and their waters as dangerous places help us understand island histories, heritages, cultures and natures, and add depth to our thinking in island studies? In this paper, and critically reflecting on such examples, I want to interrogate the implications of different ideas of what it means to be surrounded by water by reference to a range of scholarly, policy, and populist documents that constitute the debate about asylum, torture, and migration.



A-2-3 Hopkins, Mark (Hong Kong University of Science and Technology, Hong Kong).

A parochial lost cause? The micro-politics of language revitalization initiatives in Jersey (British Channel Islands). Email: lcmark@ust.hk

The patois still understood, spoken and increasingly even read and written in the island of Jersey has both an illustrious history as the linguistic signifier of this “piece of France thrown into the sea and picked up by England” (as Victor Hugo called the island), and a 21st century relevance as a case study for socio-linguistic obsolescence, even irrelevance. This paper aims to investigate its status, form and expression in literature and poetry under the sub-theme “Small is Beautiful”. The method employed by the author of this paper is principally documentary analysis, in an attempt to situate jèrriais in the current debate about endangered languages and the concomitant loss of cultural diversity. Personal experience of living there in the 1980s is also drawn upon, as are the effects of the unprecedented immigration of English speakers in the decades since the mid-1970s on the island’s unique identity.

Recent statistics on the current number of jèrriais speakers show an even more marked decline than was apparent from the first census in 1989 which asked questions about language use and recorded the number of self-reported speakers. Jèrriais suffered sudden permanent decline in intergenerational transmission (a ‘rather large nail in its coffin’, according to Mari Jones) as a side-effect of the German occupation of the Channel Islands from 1940-45. The evacuation of nearly 20% of the island’s population to the ‘Mainland’ of England for five years certainly appears to have crystallized attitudes towards jèrriais, even among those who were too young to have experienced it. Nostalgia for the old language fits comfortably with a strongly held belief in its difference from ‘proper’ French and an unquestioning acceptance of their own position in the Anglophone world. In short, it is the centuries (since 1204) of political isolation from the French-speaking Normandy peninsula rather than the brief reattachment to it as part of the German Reich which has in my view led to the terminal decline of jèrriais, rather as the mere 150 years of Hong Kong’s separation from the Chinese Mainland and its developing lingua franca (Mandarin Chinese) has produced a Cantonese language movement and a heightened, some say exaggerated sense of linguistic difference.

The support of a huge hinterland of native speakers of the standard variety of which jèrriais is (descriptive-linguistically) a dialect has created a strong pull towards standard French which has left jèrriais with no place, squeezed out between English and French, and a further theme with contemporary relevance to be explored will be the effects of contact with two competing high-status world languages, as will surely be experienced in the coming years by many lesser-spoken Asian languages, pulled between English and Mandarin Chinese .

The paper concludes with recommendations for building on the existing strengths of the education system in Jersey, to produce a new generation of standard French speakers (perhaps through bilingual immersion programmes), rather than pinning hopes for a revitalization of jèrriais on recent local language planning initiatives.



- A-2-4 Mitchell, Edward S. (School of Languages and Translation, Macao Polytechnic Institute Macau). **Chabacano Ternateño: the perseverance of a minority language on a small island. Language choice and attitudes among the Chabacano speakers of Ternate, Luzon Island, Philippines.** Email: emitchell@ipm.edu.mo

Chabacano is a Spanish-lexifier creole language spoken on the Philippine islands of Luzon and Mindonao. This paper will report sociolinguistic research to be conducted this summer among Chabacano speakers in the community of Ternate, Manila Bay, looking into questions of language choice, language attitudes, and ethnolinguistic identity. According to UNESCO, half of the world's over 6,000 languages will disappear by the end of the century if efforts are not made (UNESCO 2003). Like most of the world's creole languages, Chabacano has been classified as endangered (Sippola 2013). While in the community of Ternate, Chabacano is being intergenerationally transmitted, competition from Tagalog (Filipino) and English, alongside a lack of government support for the language, no standardized written form, and the recent death of one of Chabacano's most ardent promoters, all conspire to endanger the survival of the language. The aim of this study is to interview Chabacano speakers to ask them about their use of Chabacano, their attitudes towards the language, and how the possible death of the language might affect the identity of future generations of the community.

The methods to be utilized for this study will be interviews and participant observation. Since the sociolinguistic fieldwork has yet to begin, at this point there are no results to report. Unlike the majority of other creole languages, such as St. Lucian Kwéyòl (Mitchell 2010), there is apparently no social stigma against the use of Chabacano in Ternate (Sippola 2013). This lack of social stigma gives hope for the survival of the language since overt esteem for the language by the speakers cannot be anything but positive for the future of the language.



A-3 Traditions and practices

A-3-1 Baldacchino, Anna (Malta College of Arts, Science & Technology, Malta).

Traditional Dishes or Fusion Cuisine? An Island Journey. Email:

abaldacchino59@gmail.com

Food has a great way of making connections and creating traditions. Humans associate food with traditional events, special occasions, family gatherings, forming relationships or marking rites of passage. We also tend to associate certain types of dishes/food with certain countries (or islands). The book *A Taste of Islands* (2012) edited by Anna and Godfrey Baldacchino combines 60 traditional recipes from 60 islands around the world. Each recipe comes not only with the picture, ingredients and method of the recipe but also with a brief history of the island and the origins of the dish itself. Each island has its own traditional dish. However, certain ingredients in so called 'traditional' dishes are actually not indigenous to the island itself. They have been introduced or brought over by seafarers, explorers, traders and migrants. This paper will investigate some of these ingredients – such as the humble potato and how they found their way into certain 'traditional' dishes on different islands. It also gives an overview of some of the islands mentioned in the book and take you on a culinary journey while getting a taste of islands in one sitting.



- A-3-2 Hsieh, Kai H, Hsu, Kuang-Tsung, & Wang, Chung-Ming (Matsu National Scenic Area Administration, Taiwan). **Traditional Eastern Fujian Style Stone House Preserving Project in Matsu Islands**. Email: 32.matsu@tbroc.gov.tw; 20.matsu@tbroc.gov.tw; 10.matsu@tbroc.gov.tw

Matsu Islands which consisted 4 townships and 5 major islands. Because of Matsu islands are relatively closed to eastern part of Fujian Province of Mainland China, the traditional architecture style is significantly influenced by Fujian style. In addition, Matsu islands are majorly composed of granite rocks; most traditional houses are built using local stones. This is very different from the traditional architectures in Taiwan. This paper presents the work of the preservation and improvement project of the traditional Eastern Fujian Style house in different villages done by Matsu National Scenic Area Administration (MNSAA). In addition, the results of rebuilt stone houses are discussed. It is also observed that the rebuilt houses are often used as the home-stay for tourists.

Plan-Do-Check-Action (PDCA) cycle was made by Dr. Deming and mostly used for modern quality control on technical products. PDCA is used to improve the future works and adjust the direction of Preserving and Improving Project of Eastern Fujian Style Architecture of Matsu Areas. The project was initially planned in 2010. There were 49 households completed in 4 different villages in Matsu islands. This project is re-examined in 2014. And the administration has decided to work with the LienJian county government to shorten the applying process to encourage more local residents to apply. In addition, the Cultivation Theory of George Gerbner is used to exam and overview of the outcomes of the above project.

Most of the Matsu Islands are mainly made of granite, with the effects of millions of years of sea and wind erosion having formed a wide variety of terrain and scenery. Therefore, all traditional houses were made of stones in the various villages. As a matter of fact, the constructed stone house was originally used as the shelter for fish men. Preserving and Improving Project of Eastern Fujian Style Architecture of Matsu Areas is used to help the local residents to build stone houses. From 2010 to 2013, 61 contracts are signed by households in Qin-bi Village, Jin-sha Village, Fu-zhen Village, Ren-ai Village, and Ta-pu Village. There are 1 household is under construction in Qin-bi Village, 3 in Jin-sha Village, 1 in Fu-zhen Village, and 2 in Ren-ai. In addition, there are 4 different households are under the applying process. According to the statistics of the MNSAA, the administration has granted 76,000,000 NTD (1 USD=30 NTD) in past 4 years.

The works have been done and the outcomes have presented and discussed. It is observed that most tourists really enjoy staying in the rebuilt stone-house and the project really attracts tourist to Matsu. Consequently, modern Eastern Fujian style stone houses present a unique blend between modern architectures and traditional looking. It is believed that the work done by the administration is positive and should keep going.



- A-3-3 Koike, Haruko, Oleson, Kirsten, Friedlander, Alan, & Golbuu, Yimnang
(University of Hawaii, USA). **Creating a Common Ground for Discussion: New
Fishery Management Model that Considers Fishers, Ecotourism, and
Cultural Subsistence Use.** Email: hkoike@hawaii.edu

Cheilinus undulatus (Napoleon wrasse, Maml) and *Bolbometopon muricatum* (bumphead parrotfish, Kemedukl) are two species of fishes that are ecologically and culturally important in Palau. They are also one of the largest species of fish seen in Palau waters, thus an important attraction for dive tours. The fishery has been closed for these species since 2006 to prevent further overfishing, but is now pressured to be reopened. In response, Palau International Coral Reef Center (PICRC) and the University of Hawaii conducted holistic stock assessment that included fishery, tourism, and cultural use. First, the underwater survey was carried out to assess the current stock size of the fish, which allowable catch limit was calculated. Secondly, we conducted willingness-to-pay (WTP) survey to dive tourists. The WTP survey evaluated the two species' monetary value through ecotourism. Thirdly we conducted cultural importance survey to local residence in Palau. The cultural importance survey allowed us to evaluate catch limits while ensuring the availability of fish for Palauan's traditional activity. By combining stock assessment data, WTP survey results, and cultural survey result, we created a bionomic model where we simulated the middle ground for sustainable fishery, ecotourism, and cultural subsistence use.



- A-3-4 Lee, Ming-Ju, & Lu, Cheng-Hao (National Penghu University of Science and Technology, Taiwan). **The distribution and characteristic of Penghu fish weirs: An investigative review.** Email: luch816@gmail.com

A fish weir is the fishing trap built by our ancestors, they used the extraordinarily wide characteristics of intertidal zones in Penghu islands. It is not only the traditional fishing skill, but also the cultural landscape which represented the interaction between resident and environment in Penghu islands. The use and development of fish weir in Penghu islands has been well documented and can be traced back to at least 300 years ago. The unique fish weir can be regard as living fossil of human fishery civilization. The Ministry of Cultural Affairs has also listed Penghu fish weir as one of 18 potential sites for World Heritage inscription in 2009, due to the importance of it cultural values. In early periods, fish weir was the important source of fish catching and maintaining life. However, owing to the improvement of power driving vessel and aggradation of coastal sediment, it leads to the losses in the fishing function of fish weir. Recently, fish weir has transformed to the important landscape and recreational fishing resource for tourism development of islands. Therefore, it becomes an important issue to review the relationship between fish weir and environment and local people. Owing to the changes of historical investigation data, very little research on the development of Penghu fish weir is available. This study provides a comprehensive review of currently available documents on fish weir and used mostly secondary data, including fish weir permit documents from the Taiwan Governor-General (1913~1914), the Japanese fish farm map collected from Penghu County Government's recent investigation which conducted checking and registering local fish weirs by field investigation and in-depth interviews (2005-2012). The results show that the number of fish weirs is 609 in Penghu island, considered to be the highest density on unit area and most well-preserved in the world. As for the distribution of fish weirs, Baisha township has the highest number of fish weir (46.47%), Siyu township (24.30%), Husi township(14.94%) and Magong city(12.97%), followed by the south islands (1.31%). There are also multiple types of fish weir. Among these 609 fish weirs, the arch pool fish weir has the highest percentage (274/44.9%) and the next highest percentage is the single pool shape (256/42.04%), followed by the double pool shape (27/4.43%). Additionally, some fish weirs (52/8.54%), documented or orally confirmed to be in use, were not located during our investigations. This study also found that several characteristics of Penghu fish weir: 1.generally speaking, the distribution of fish weirs were influenced by shore platform. 2.The style, complexity, perimeter of fish weir structure are highly correlated with the distance to the coast, height and slope of shore platform. 3. The position of gathering fish weir are highly correlated with the modes of coastal current.



A-4 Nissology – Studying Islands on their own terms

A-4-1 Depraetere, Christian (Institut de Recherche pour le Développement, Montpellier, France). **A general outlook on Nissology as the science of islands.**

Nissology must be regarded as an offshoot of island studies first of all for historical reason. The premise comes from the necessity to give a specific conceptual framework to encompass the wide range of scientific domains related to island research, including the physical, socio economical and phenomenological aspects. The pioneering work of the biologist Arthur Lyon Dahl through his "island directory" published in 1990 has to be considered as a milestone toward nissology. It was an attempt to provide a biological and geographical survey as complete as possible for island practitioners throughout the world. Another seminal and complete work in 1994 comes from the Anthropologist Grant McCall with a definition that sustains the idea of islands being a legitimate and specific category of scientific object: "The study of island in their own terms".

Nissology is more a state of mind considering fragmentation of all the spatial patterns from a functional point of view, with the islands (and continents!) strictly speaking being the paradigmatic example of fragmentation of our planet. In this scope, a general working definition is sufficient: an "island" is a patch with different properties from its surrounding. In the case of island, it is a patch of land surrounded by water. The notion of island from a nissological standpoint does not refer to an absolute scale but to a relative size compared to the mainlands: for instance the New World is an island compared to the mainland of Old World, the same with Ireland with Great Britain or Gozo with Malta. All natural or historical processes have to deal with this fragmentation with drastic consequences. An emblematic example is the globalization that took place at the turn of the 15 and 16 centuries with the discovery of a new continent.

The basic question "how many islands" is full of pitfalls. A straightforward answer is seldomly given because of the usual fuzzyness of linguistic convention referring to the word "island" (i.e. why should Australia be considered a continent, Greenland an island, and Liberty Island an islet?), and the quasi infinite number of them if no minimum value is given. Apart from this statistical aspect, it is difficult to circumvent the problem of the convenient spatiotemporal scale related to a process: a "significant" island is not the same for an entomologist, an anthropologist or an historian.

For the worst, Island Studies may appear as an endless chorography of local phenomenon observed deliberately or incidentally on islands. For the best, they provide a treasure of facts collected in an appropriate context (islands as laboratory!) that need to be synthesized in larger context, as it was done by Mac Arthur and Wilson for the biogeography of islands. Nissology does not intend to put aside Islands Studies but to contribute to a better valuation of its results within the present environmental and societal challenges. For the less, the Nissology should help in the process of building up multidisciplinary approaches on common ground.



A-4-2 Bernardie-Tahir, Nathalie (Université de Limoges, France). **French geographers and islands: From the idealization of the field to the denial of the object - Epistemological approaches.**

This paper considers the singular and paradoxical situation and role of islands in French geographical research. It will initially set out to understand exactly what is behind French geographers' all but unflagging infatuation for islands as field sites and subjects. First of all, an island is an ideal field site, or at least one idealized by researchers who see it as bounded, closed, easily grasped, sized for monography... in short, a field site where you can literally and figuratively see everything. This argument flows regularly from the pens of geographers of islands, who enjoy pointing out the convenience of an unquestionable delimitation that facilitates research as a result. This not only explains this tendency to make islands their own kind of field site, but more broadly their being chosen as the subject of research, publications, and specific monographs initiated in some cases in university centres explicitly specialized in island studies. For French geographers, islands have long represented such "small wholes" for us to catalogue, study from top to bottom, and classify and categorize both methodically and systematically.

A literally over-studied kind of place in the field of literature as well as the human sciences, the island has become a familiar site for geographers, to the point of becoming increasingly mobilized in geographical thinking, as the next section will show. More than a simple field site, the island indeed appears as an object that has been variously but regularly used, manipulated, or even instrumentalized in epistemological questioning and the very elaboration of French geographical thought since the end of the 19th century. This is certainly the root of the space's singularity, which is doubtlessly less derived from its enclosed form than it is from the simultaneously novel and perhaps oversized place that it has held, and to a certain extent still occupies, in the methodological, epistemological, and scientific output of French geography.

Lastly, we will endeavour to account for and understand the elements of and issues behind what could be called the "island paradox": today, while island research continues to flourish, a rising number of researchers are speaking up to highlight the lack of geographical specificity of this kind of territory and, more broadly, to question the relevance of the island-object and the scientific legitimacy of island studies.

This paper is based on an extensive study of the literature, which was conducted under a large research related to the use of islands in the French geography (Bernardie-Tahir 2011).



A-4-3 Baldacchino, Godfrey (University of Malta, Malta). **Notes from the Sicilian Archipelago.**

The pivot for the fortunes of the wider Mediterranean sea, the world's largest, have rested on Sicily. The largest island with the largest population in the region, and with Europe's most active volcano, Sicily has moved from a hinterland for warring factions (Sparta/Athens, Carthage/Rome), to a more centrist stage befitting its location, although still remaining a political outlier in the modern era. Unlike many even smaller islands with smaller populations, Sicily remains an appendage to a larger (dysfunctional?) state.

The Maltese islands are part of "the Sicilian archipelago", and it was a whim of Charles V of Spain that politically cut off Malta from this node, but not culturally. This paper will review the changing fortunes of this large island that has been largely neglected within the field of island studies.



A-4-4 Grydehøj, Adam (Island Dynamics, Copenhagen, Denmark). **The Other Kind of Island: Putting the Urban into Nissology, and Why Big Can Be Beautiful Too.** Email: agrydehoj@islanddynamics.org

Over the years, island studies has contributed significantly to our understanding of the dynamics of island communities worldwide, with an emphasis on studying 'islands on their own terms'. These terms have, however, been quite limited in practice. Island studies researchers – myself included – have tended to study relatively remote, peripheral, isolated, and marginalised communities, often with an explicit aim of demonstrating that such places are less remote, peripheral, isolated, and marginalised than the mainland and its metropolitan gaze would have them. Yet in seeking to empower and give voice to island needs and perspectives, island studies has reinforced some of the very continentalising discourses that its scholars have so staunchly resisted. This is because island studies has largely ignored another type kind of island, one that perhaps challenges the much-decried island stereotypes even more effectively than can any number of typical island studies: namely, the island city. Over the course of history and throughout the world, islands – whether in oceans, seas, lakes, or river deltas – have proven exceptionally popular for urban development. From New York City to Hong Kong, from Paris to Mumbai, from St Petersburg to Singapore, the success of island cities has proved at once impossible to underestimate and – from an island studies perspective – easy to overlook. What can the study of island cities tell us about islands in general?

Island cities represent a challenge to traditional island studies' focus on small, peripheral communities by highlighting habitual scholarly tropes and calling into question some of the field's periphery-centric understandings of what it means to be an island. Yet by helping to distinguish between factors of small size and/or isolation on the one hand and factors of islandness *per se* on the other, the study of island cities can add to our knowledge of the effects of island status. The fact that societies in island cities, like the more typical subjects of island studies, are influenced by spatial factors arising from their islandness helps consolidate the validity of island studies as a field of research.

Island Dynamics has established the Island Cities and Urban Archipelagos research network (www.islandcities.org) to promote research at the intersection of island studies and urban studies.



A-5 Nissology Studies II

A-5-1 Graziadei, Daniel. (Ludwig-Maximilians-Universität München, Germany).

Nissopoiesis: the creation of islands through words. Email:

Daniel.Graziadei@romanistik.uni-muenchen.de

As the panels of this conference show, islandness is not only a geographical, social and economic process as well as dimension but also a philosophical and linguistic/literary one. Therefore I would like to propose a presentation of the main thesis and some examples from my dissertation (Dr. phil.) that I handed in last summer at Ludwig-Maximilians-University Munich and is in the publication process now.

I propose to show how I translated elements from the island studies into a way of analyzing literary islands and archipelagoes by connecting it with literary ecocriticism, postcolonialism and deconstruction, in order to observe the ways and strategies by which literary islands are constructed and expanded rather than looking for differences and similarities to geographical and physical islands. To exemplify the possibilities of such a reading I will focus on a few very obvious examples from contemporary Caribbean literatures; excerpts from prose and poetry works of well-known authors such as Derek Walcott, Jean 'Binta' Breeze, Édouard Glissant and Daniel Maximin. These writers and their works are not only selected for their standing and reception, but also because they create implicit and explicit nissopoietics that contribute to our understanding of (literary as well as cultural and mental) islands.

I will show that an analytical perspective that includes the findings of island studies and spatial theory as well as the other reflections named above is able to produce more detailed results, especially when applied to island-texts which use the island and/or the archipelago for more than exotic scenery. Thus I will try to show that the creation of a literary island is not only a reference to icons, topoi and commodified commonplaces.

The closing remarks leading into the discussion could focus onto the relation of my approach and the title of section 1. Small is beautiful. Opening towards questions like "How relevant is smallness for the fantasy of a total description?" and: "To what extent is aestheticism at the core of every island-description, no matter if the island is conceived as a utopian, escapist or dystopian one?"



A-5-2 Nagashima, Shunsuke (Japan Society of Island Studies & Kagoshima University, Japan). **From Nissology to Nissology: Progress of Japan Society of Island Studies and Future Prospects.** Email: nagalongisland@hotmail.co.jp

1. Genealogy of Remote Island Studies

- (1) Japan's remote island studies started from "Society of Island Studies" which was initiated at the Department of Geography of the University of Tokyo under the leadership of Professor Yoshimasa Yamanashi. The Society, which was initially organized by geographers and ethnologists, published an island study journal called Shima.
- (2) The world's first Remote Island Development Act (RIDA) was enacted on July 1953 by the initiative of Japan's House members. After the RIDA, the Japan Association of Remote Island Development was organized with heads of remote island municipalities under the secretariat charged by Japan's foremost folklorist, Tsuneichi Miyamoto. The association aimed at developing remote islands as well as engaging in research and promoting on island matters and island leadership.
- (3) On July 1989, an "Expo on Sea and Island" was held in Hiroshima Prefecture under the auspices of Governor Toranosuke Takeshita. The Expo became the first opportunity to collaborate with Europe, the U.S., Asia and Oceania on island studies and policies. The Expo also played an important role in creating the INSULA.

2 The establishment of the ISISA leading to the JSIS

- (1) At the opportunities of the Island of the World held in Bahama in 1992 and an INSULA conference held in Sicily in 1997, the preparation for establishing the JSIS commenced after 40 years of Japan's formal island studies. The first meeting of the ISISA, which was held in Okinawa in June 1994, provided a strong tailwind to establish the JSIS.

(2) Establishment of the JSIS

On July 1998, the JSIS was inaugurated at Wesleyan University in Nagasaki with a congratulatory keynote speech by Dr. Grant McCall, President of the ISISA. Since its establishment, the JSIS has actively organized various conferences, forums and seminars in Japan as well as overseas. International conference of the SICRI: Small Island Culture Initiative was also held twice in Kagoshima in 2004 and Sado Island in 2009. JSIS's annual study conferences have been mostly held on remote islands. The JSIS has also published The Journal of Island Studies and Annual Report regularly.

(3) JSIS's Vision and Mission

Island societies have faced multiple socioeconomic issues related to their insularity, remoteness and smallness. However, as "Small is beautiful" connotes, proactive island studies and ideas have been emerging in recent years to resolve these island issues. The JSIS is aiming at developing viable concepts and practical ideas based on the diversified nature of island societies through scientific investigation. We are not only welcome to study islands "on their own terms", but also explore a brand new discipline through inter- trans-disciplinary approach.



A-5-3 Nakachi, Kakazu. (Osaka University, Japan). **Okinawa Islands: Geographical Superiority and Inferiority in International Relations.** Email: makishi.kakazu@gmail.com

The Okinawa Islands are well known in the world as the home of US military bases. The US bases there play a big role in maintaining peace and security in Asia, and even in the world. The Okinawa Islands (i.e., The Ryukyu Islands) stretch in the region between Japan and Taiwan. There was once a small independent kingdom on these islands. However, the Ryukyu kingdom came to an end and its territories were annexed by Japan. Since annexation the Okinawa Islands were identified as the frontier or front-line islands meant to protect Japanese territory. Later, however, since both the Japanese and U.S. governments agreed to build permanent US military bases after the outbreak of the Korean War at the beginning of the Cold War era, the role of US bases expanded from protecting Japan to protecting the greater Asian region from communist expansionists.

Since the end of the Pacific War, Okinawans have demanded the removal or reduction of US bases in Okinawa. Yet both Japanese and U.S. governments always emphasized the Okinawa Islands' geographical superiority, being near the Asian continent, near the Korean Peninsula and in the Pacific Ocean. The purpose of this presentation is to reexamine the superiority of these islands as a home for military bases through analyzing the case of the Okinawa Islands. The Ryukyu Kingdom existed from 1429 to 1872 on the Okinawa Islands. The Ryukyu Kingdom fell under the Chinese tributary system and was protected by Chinese emperors at that time. The Ryukyu Kingdom enjoyed a peaceful trade with Japan too, to protect itself.

However, after the Sino-Japan War, Ryukyu and Taiwan were forced to be ceded to Japan by China through the Shimonoseki Treaty of 1895. Okinawa and Taiwan were acknowledged as being part of Japanese territory by the international community.

The Pacific War raged from 1940 to 1945. After the Japan's defeat by the USA, Okinawa came under a US military government until 1972 while Taiwan reverted to China. Okinawa is now under the Japanese government. Taiwan was once the representative of all China as a member of the United Nations. Although Okinawa was returned to Japan in 1972, the islands are still important islands for military bases under the Japan-US Mutual Defense Treaty.

The paper also discusses the historical changes of Taiwan and Okinawa as they relate to larger nations in international relations. The presenter is concerned to study the fate of the Okinawa Islands due to their geopolitical location.



A-5-4 Wu, Min-Hua, Lee, Chung-Han, Chen, You-Hsuan, Chu, Yi-Chi, Lin, Chia-Hao, Chung, Hsin, Huang, Li-Ting (National Penghu University of Science and Technology, Taiwan). **A Study on the English Translation of the Praise Ballads in Penghu.** Email: mhwu@gms.npu.edu.tw

The “praise ballad” is a kind of folk literature. People handed it down from generation to generation in traditional society by means of singing. It was used to express the villagers’ emotions, thoughts and feelings. The content of the praise ballads sung on the Pescadores is largely and tightly related to sea life because Penghu is surrounded by water. When the author of a praise ballad describes his or her life’s feeling or condition, he or she appeals to an intense emotion regarding the hardship of fishing, which is called “sea-begging” in local Taiwanese language. Although praise ballads play a decisive role in the promotion of Penghu cultural tourism, the unique folk songs are facing a challenge, that is, they are being forgotten by the people and gradually vanishing from the world.

Therefore, based on Hung Min-Tsung’s authoritative work and collection on Penghu local praise ballads as well as related works on translation theories, we engaged in a research project that involves not only the art of literary translation but also the practice of Taiwanese-Chinese-English translation of some representative local praise ballads collected in Hung’s book. In this research project, we tried to translate the praise ballads from their original Taiwanese, via Chinese, into the English language, without losing their original message and flavor.

It is the first time for researchers to combine the study of Penghu praise ballads with the study and practice of Chinese-English translation. On the one hand, we hope to train and better hone our Chinese-English translation skills. On the other, we hope that foreign readers can better appreciate the charm and beauty of Penghu praise ballads with the help of our project.



B sessions: Small is dangerous - Island natures and ecology

B-1 Ecology and resource use

B-1-1 Kawai K, Kobari T, Manabe H, Torii T, Nishimura Satoru, & Veitayaki Joeli

(Kagoshima University, Japan). **Resource Use and Human Disturbance in**

Coastal Ecosystems: A Case Study of Viti Levu Island, Fiji. Email:

kkawai@cpk.kagoshima-u.ac.jp

Fiji is a country in Melanesia, a subregion of Oceania. Some Fijian social systems are dependent on the islands' environment, which is highly productive for fisheries, due to its mangrove-coral ecosystems.

Natural environments and their resources are vital to human existence. Human activities in many localities, however, have led to environmental pollution and decreased biodiversity, a phenomenon that has become global in scale. Comprehending the relationships between human beings and nature from ecological and economical perspectives is indeed crucial to understanding their interactions. The objectives of our study are 1) to estimate the production volume of the country's most important agricultural product—cassava potatoes—and collect data on industry's most popular bivalve and two types of fish, the kanace and kabatia, 2) to calculate the monetary value of these resources, and 3) to compare these values across different ecosystems.

In 2005 and 2006, we conducted our fieldwork in a village that was located on the eastern side of the main island of Fiji, Viti Levu. Although the mangrove forests here were not rich, they grew along the village's shoreline; coral reefs were present in the offshore areas (Kawai et al., 2008; Manabe et al., 2008). The local lifestyle depended on farming and fishing (Nishimura, 2006). The most important local resources were cassava, bivalve, and fish from rivers and coastal areas, all of which were popular in markets and served as local food staples. We began by estimating the weekly cash value of these food products. We then considered this number to represent the equivalent value of the human disturbance inflicted on each of the ecosystems, because people used the natural environment to grow and catch these resources.

The estimated values of human disturbances were about 530 F\$/ week for the cassava potato, about 300 F\$/ week for the bivalve, about 30 F\$ for kanace, and about 20 F\$ for kabatia. These values changed as the distance from the village. We will discuss the relationships between these values and the relevant environmental and social factors.



B-1-2 Cheng, I-Jiunn (National Taiwan Ocean University, Taiwan). **Ecological study of nesting green sea turtles at Wan-an Island, Penghu Archipelago.** Email: b0107@ntou.edu.tw

Green sea turtle is an endangered species, listed as CITES I in Taiwan and under protection of relevant laws. There are three main nesting sites in Taiwan; Wan-an Island of Penghu County, Lanyu Island of Taitung County and LiuChiu Island of Pentung County. Among three sites; Wan-an Island is the most stable one. A long-term nesting ecology study on this island has initiated since 1992, and the refuge sites for the nesting female was established since 1994. The nesting ecological studies from 1992 till 2013 showed that the nesting females ranged from 2 to 19 turtles. The nesting season lasts from June till mid-September each year, and peak from late July to mid-August, which match the highest air temperature of the year. Meteorological data showed that the precipitation was highest in June and lowest in October.

Nesting ecological studies showed that the post-nesting mortality increased with the average sand temperature and the nest depth. The incubation period increased with the increase variation of sand temperature during the incubation. Hatching mortality increased with the decreasing precipitation during the incubation. Hatchling weight increased with the increasing lowest sand temperature during the incubation. Hatching success increased with the increasing size of nesters and decreased with the clutch size. Heavier eggs produced heavier hatchlings. In spite of no long-term change in air temperature and precipitation were observed during the study period, results of this study suggested that the nesting ecology of green turtles on Wan-an Island is sensitive to the climate change.



B-1-3 Nishimura, Satoru, Yamamoto, Sota & Kawanishi, Motohiro (Kagoshima University, Japan). **A scenario for more efficient use of giant swamp taro plantation under socio- economic change: A case study of Pingelap Island, Federated States of Micronesia.** Email: satoru@leh.kagoshima-u.ac.jp

Our research aims to clarify how socio-economic change such as population decrease affects the usage of agricultural land in a small remote island of the Federal States of Micronesia (FSM). The economy of the FSM is often described as MIRAB economy where cash economy is mainly consisted of Migrated workers' Remittance and salary of Bureaucratic workers funded by Aids from USA. In other words, the private sector of economy is so weak that many of the people still depend on subsistence economy (Brazys, 2010).

Bread fruits, banana and tuber crops such as giant swamp taro (*Cyrtosperma merkusii*) are the staple foods for the people in many of the islands of the FSM. Regarding agricultural land use, there could be roughly divided into two categorizes or 'home tree gardens' such as breadfruit plantation and a few spacious root and tuber crops patches which are shared by many people (Falanruw 1993). Giant swamp taro belongs to the latter. The rules and ownership, cultivation, and products share are strictly decided by the local people (Damas 1995). And the migration of the people might well affect the rules and their operation.

We have conducted a research in Pingelap Island on a giant swamp taro patch which is divided into more than 170 parcels. The parallel cut is called "mekah." One mekah is divided into the smaller pieces, called "mahname", which is the smallest unit of the ownership and cultivation right. One islander usually owns several mahname. The pieces of lands are inherited by all the children regardless of gender. The system is called "moahl." Emigration of the islanders to Pohnpei, Guam, and mainland USA is causing malfunction in the use of the giant swamp taro plantation. Many pieces of plantation are not well taken care of.

The paper tries to figure out the positive evolutionary scenario, which will enable more efficient use of the plantation based on the Macro-Micro Loop theory (Shiozawa 1995). We focus on the new network of the islanders living in the island and those who are originated from the island. The network will change the consciousness of the islanders (Micro), which could affect the rules regarding the use of the agricultural land such as moahl (Mezo). The interaction between Macro and Mezo could lead to more efficient use of the land (Macro). If this positive loop keeps on functioning, the island could stay be more capable in production of the important food, or giant swamp taro. In the process, transparent rules need to be implemented and endorsed by the federal or state government. The role of "command economy" may also play an important role in the transitional economy (Ishikawa 1990).



- B-1-4 Kawanishi, Motohiro, Yamamoto, Sota & Nishimura, Satoru (Kagoshima University, Japan). **Diversity and distribution patterns of useful plants in inhabited area of Pingelap Island, Federated States of Micronesia.** Email: kawanishi@edu.kagoshima-u.ac.jp

Vegetation of Micronesia mainly consists of broad leaved evergreen forest, and the species composition depends on the environment of each Island. Muller-Dombois & Fosberg (1998) reported ten categories of vegetation in Micronesia, for example, mangrove vegetation, strand vegetation, vegetation on the coral atolls and low coral islands or raised coral or elevated limestone, montane rain forests and cloud forest and so on. It is known that people in Micronesia islands use many plants as food, building materials and ornamentation (Balick, 2009). Breadfruit and coconut trees have been planted broadly in lowland area of an island (Kanehira 1933). Many useful plants were introduced by various routes and purposes. Therefore, distribution patterns of island vegetation would be closely related to human activities.

Pingelap Island is a small coral island, and located about 300km east from Pohnpei Island, the capital of the Federated States of Micronesia. People in Pingelap Island would closely relate to natural resources because they cannot trade easily food and other necessities. We will clarify distribution patterns and number of taxon of useful plants in inhabited area of Pingelap Island and discuss relationship between plant diversity and human activities.

Inhabited area of this island was distributed from seashore to giant swamp taro (*Cyrtosperma merkusii*) patch in the center of the island. Inhabited area was divided into approximately 150 compartments. Many compartments form an elongate belt shape. About 90 taxa were observed. Frequency of appearance of coconut (*Cocos nucifera*), banana (*Musa* spp.), breadfruit (*Artocarpus altilis*), and papaya (*Carica papaya*) was higher than other taxa. These trees are dominant elements of vegetation in this area, but distribution patterns relating to distance from seashore was different. *Polyscias* spp. and *Crinum* spp. showed high frequency because they used as planting fence. And, some ornamental plants, for example *Clerodendrum panicuratum*, *Ixora* spp., *Plumeria* spp., were also observed. Root or tuber crops of Araceae (*Alocasia*, *Cyrtosperma*, *Xanthosoma*, *Colocasia*), *Dioscorea* and *Ipomoea* were cultivated, but frequency of these crops was low. *Capsicum* and *Citrus* that is used as spice showed relatively high frequency.

Above results would show that variation of food plants in this island was smaller than large islands. The elongate shape of land area of this island would relate to equable distribution of natural resources for island people.



B-2 Islands at risk

B-2-1 Nagashima, Shunsuke (Kagoshima University, Japan). Restoration of Small

Island Societies after the East Japan Great Earthquake. Email:

nagalongisland@hotmail.co.jp

The East Japan great earthquake disaster occurred on March 11, 2011 and brought unprecedented damage for society and industry. The dead person reached 20,000 people. The area where the East Japan suffered from is the Pacific coast of the Tohoku district; which mean north east, but 9 remote islands and one religion island and one bridging island are included there. The society of 11 small islands was exposed to this disaster and experienced various great sacrifice and damage equally. The restoration just still got a cord in the present after three years, and up to professional standard, immediate revival including industry and the rebuilding of the house is expected. It left many lessons in disaster prevention measures for the islands of the other place to investigate the process that led to the fact and the revival every each island of this disaster thoroughly.

Data survey on disaster management and fieldwork studies by time series visit. Time series process before and after disaster events can analyze the risk management attitudes. Before: pre-risk management: control by evasion, dispersion, the prevention and reduction, using human-ware, ecological-ware, spiritual-ware, soft-ware and hard-ware. Risk financing by possession and transfer are normally effective, however tsunami big damage beyond the normal criteria which are expected. Other dimension is societal function on co-governance of holistic help system; self-help; by private prevention and living skill, mutual-help: give and take system, voluntary-help; reciprocal system and public-help; role between the local government of town level which also under the risk and prefecture level, and the central government level. After the event, we can follow these processes.

E-jima was damaged by earthquake than tsunami. Depopulation got acceleration by refugee process and waiting process of house repairmen. Kisenuma Oo-shima was attacked by fire beyond channel. School in Izu-shima was closed after the disaster. New bridge construction is their requirement for the societal revival. Miyato-jima: bridged island people can escape from tsunami before attack by the monument effect of 1200 years ago. Ishinomaki two islands have each two villages, the damage by tsunami was not sever too much, but societal dame for revitalization have many problem than before by much aging. Urato 4 Islands had made defensive effort preventing Siogama mainland from direct and strong attacks of tsunami. However these islands were very much harmed, in spite of famous picturesque ground. Their living space were controlled under part from scenery high sight, then they have to live risky places. For their restoration, these two values: safety vs scenery was put under new balance, especially on the height of defense wall and reconstruction places of the residential area. We have to re-evaluate these heavy processes for the next preparation against huge scale disaster. We can check existence of the handicapped existence by insularities or not? What is the best solution on the island disaster management?



B-2-2 Hartle, Jeffery A. (University of Central Missouri, USA). **Challenges of Island**

Emergency Response: Comparing Socio-technical Systems. Email:

hartle@ucmo.edu

There are few studies of island fire and emergency services. Island communities are geographically isolated, creating challenges for the delivery of government services, including fire and emergency services, which are socio-technical systems embedded in the larger community. Although islands can have urban or rural characteristics, this study is focused upon rural sub-national island jurisdictions in the United Kingdom, the Caribbean, and North America. This paper draws upon literature from the study of rural fire problems to provide insights into the challenges of island emergency response.

Problems identified can be characterized as geographical challenges facing island communities and the governance/administrative complexities facing island emergency responders. Geographical challenges include the difficulties of providing equal protective services for all residents in spite of separation, remoteness, and insularity; obstacles related to response in the face of limited transportation networks, and adopting and implementing building codes to mitigate local natural and technological hazards. Governance/administrative challenges include determining the appropriate level of services to be provided to the community; limitations on available resources; and challenges in recruitment, retention, and development of qualified responders. This paper presents the author's cross-national, comparative, qualitative case studies based on two decades of field work.



B-2-3 Siedschlag, Daniela (Helmholtz-Zentrum Geesthacht, Germany). **Endangered by smallness: the concept of emotional vulnerability.** Email:

Daniela.Siedschlag@hzg.de

Islands are unquestionably extraordinary places (Ratter 1992) – situated geographically apart and surrounded by water. Following this reasoning, to live and work on an island is special. Nonetheless, island societies are not isolated from environmental, social, economic and cultural global processes (Clark 2009). Furthermore, islands are often endangered by hazards due to their locations or geological characteristics (e.g. storm surges, tsunamis, earthquakes and volcanic eruptions). These aspects are more or less a valid assumption for all islands – large and small ones. However, the capacity to deal with global changes or hazards is not identical for large and small islands. Small islands are affected in particular (Pelling & Uitto 2001, UNISDR 2005). One single hazard can affect major parts as well as the majority of the settlements. As a consequence and due to the limitation of space, inhabitants of small islands can be forced to leave the island permanently.

At the same time, small islands are places, which are often characterized by a strong sense of emotional attachment or belonging among their inhabitants. Even though many small island inhabitants may have strong connections with the mainland, leaving an island that is no longer habitable would imply a basic change of almost all components of their everyday lives. Nonetheless, in planning and decision-making processes, relocations of small island settlements are viewed as potential adaptation strategy, e.g. in the context of sea level rise (IPCC 2007). As Adger & Adams (2013) pointed out, a research gap in this context is the neglect of the individual perspective and emotional aspects of a resettlement.

Against this background, this paper introduces a new perspective to the theme “small is dangerous”: the concept emotional vulnerability. This interdisciplinary theoretical concept is a new qualitative approach in hazard research. It offers an emotional/place-based perspective of vulnerability – an aspect given little or no attention by present social science concepts of vulnerability, which focus in particular on socioeconomic parameters and the explanation of cause-effect relationships. The concept emotional vulnerability follows philosophical currents and theoretical concepts concerning “the affective bond between people and place” (Tuan [1974]1990: 4). It focuses on understanding people’s individual attachment to their place of residence and links this individual emotional/place-based perspective with effects of spatial changes of places due to hazards. The concept emotional vulnerability points out what people are appreciating of their island life, why they stay on islands despite the risks and what they would lose in case of relocation.

Empirical research on the small island of Pellworm provides insights into the relationship between attachment to place and emotional vulnerability in an island context. Pellworm is situated in the German North Sea and surrounded by an eight meter high sea dike – the protection measure against storm surges. The island has a size of 37 square kilometres, approximately 500 households and 800 to 1,200 inhabitants – depending on the season. A quantitative household-based survey (N=361) and qualitative in-depth interviews (N=14) serve as the empirical basis.

Based on theoretical analysis and empirical data, the paper demonstrates the relevance and importance of the theoretical concept of emotional vulnerability for small island research within the context of ongoing environmental, social and economic processes. It is important that planning and decision-making processes take into consideration the individual perspective and people’s attachment to place (Ratter & Gee 2012). The concept emotional vulnerability with its emotional/place-based focus seeks to contribute to addressing this gap.



B-2-4 Takahashi, Minori (Hokkaido University, Japan). **Self-government and climate change: 'Autonomy in External and Internal Relations' in Greenland.** Email: blinkende_stjerner@hotmail.com

The objective of this presentation is to clarify the Autonomy structures in Greenland, which is heavily impacted by climate change, and parts of the process for altering these structures through the mediums of “Autonomy in External Relations” and “Autonomy in Internal Relations” to serve as a new framework to replace autonomism, which was prescribed via a process of integration and separation between the traditional center and the margin. To this end, this presentation considers resource development and autonomy in the polar region—focusing on trends relating to the resource development companies that have acquired development rights for Greenland’s iron ore mines and offshore oil fields—while also discussing the Greenland Self-Rule government’s changing political measures as it attempts to increase its level of autonomy by attracting foreign investment and obtaining income from resources.



B-3 Climate change policy and adaptation

B-3-1 Holdschlag, Arnd (University of Hamburg, Germany). **SIDS in Climate**

Diplomacy: Strategies and Priorities. Email:

holdschlag@geowiss.uni-hamburg.de

Sustainable development of many Small Island Developing States (SIDS) is challenged by global climate change risks, which are increasing their social-ecological vulnerability. The peculiar sustainability and climate challenges of SIDS were formally recognized by the international community at the United Nations Conference on Environment and Development in 1992. In the years that followed several international frameworks were established emphasizing co-operation and assistance of the international community. SIDS have been climate change negotiators especially since 1990 when the Alliance of Small Island States (AOSIS), a coalition of small island and low-lying coastal countries, was created. In the international negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) AOSIS has become an influential player, which can be regarded as a remarkable success for the small island states, usually lacking bargaining resources. By means of co-operation, pooling resources and consensus orientation AOSIS has managed to obtain a SIDS seat in several UNFCCC bodies and to forge coalitions with more powerful country groups. Hence, it appears fruitful to look closely at diplomatic strategies and priorities.

As the UNFCCC process increases in scope and complexity, new topics and different interests have emerged among SIDS. As a result, for example, the number of submissions to the UNFCCC by individual states proposing different ways of dealing with “forests” or “markets” recently increased. Diverging positions on the forestry sector as a negotiation topic are evident. This holds also true for “relocation” and “migration” as adaptation strategies. AOSIS as a group keeps concerned with topics such as “mitigation”, “vulnerability and adaptation”, “financial support”, “technology” or “capacity building”. Although its member states are differently affected by climate change and climate policies, AOSIS can up to now be characterized as a tightly coordinated and unified coalition (Betzold et al. 2012). However, as recent climate negotiations show, AOSIS remains highly dependent on action of major (USA, EU) and emerging major powers (BASIC – Brazil, South Africa, India, China).

This paper reviews and analyzes recent AOSIS’ diplomacy strategies against the background of “new diplomacy” approaches which stress the formation of coalitions between small and middle powers as well as the role of civil society, e.g. NGO networks (e.g. Deitelhoff/Wallbott 2012). It highlights the significance of coalitions to generate and exercise discursive power, scientific expertise, moral framing and leadership in negotiation processes. Moreover, AOSIS’ current lines of reasoning in its thematic prioritization are examined, e.g. on “renewable energy” or the proposal on “loss and damage” due to weather extremes or longer term climatic shifts, which has successfully been introduced into the UNFCCC negotiations.



B-3-2 Papoutsaki, Evangelia & Kailahi, Sandra (Unitec, Auckland, New Zealand).

Communicating Climate Change, Disaster and Crisis in the Pacific: A Regional Appraisal. Email: epapoutsaki@unitec.ac.nz

The Pacific Islands region has been on the focus of the climate change debate in the last few years. Several islands are already experiencing the impact of climate change on their small economies, cultures and fragile natural habitat. This has brought to attention the need to establish stronger communication mechanisms and install a range of media and communication platforms to provide access to early warning systems before a disaster and communication during disaster response. As the complexity of the media and communication environment of this region increases with the arrival of new technologies, questions remain about the appropriateness of ICTs for use during emergencies and disasters. There is also a greater need for understanding the possibilities of integrating ICTs like mobile phones into media and communication plans for disaster response technologies like radio.

This research presentation is based on the PACMAS State of Media and Communication Baseline research project (2013), undertaken across 14 Pacific Island nations and through a partnership between RMIT University (Australia), the University of Goroka (Papua New Guinea) and UNITEC (New Zealand). The paper focuses on aspects of climate change and emergency and crisis communication systems through the research's key components (media policy, systems, capacity building and content). It gives some key findings that highlight the urgency of developing and sustaining systems of communication vital for these island nations.

The research was guided by the principles of Communicative Ecology and Communication for Development (C4D) that deliberately encompass all forms and modes of communication, including community radio, information and communication technology (ICT) initiatives, and processes such as community dialogue along with the more traditional mass media. The main Research Methods included desk-based research, stakeholder interviews (212) and a verification survey with Pacific media and communication experts (a 'panel of expertise').

Some of the key findings indicate that climate change affects people living in low land and remote areas, as well as women and people with disabilities, but reporting on climate change in remote areas is difficult and costly. The language of reporting was also noted as a common issue, especially around the documentation of climate change. Almost all respondents across countries pointed out that the translation of scientific terms into local languages or a language that communities understand is challenging. In some countries, such as Kiribati and Palau, people report information fatigue in regards to climate change. This might be attributed to the difficulty of translating climate change issues into local stories that are relevant to people who might not see climate change as an immediate threat to them. Christian narratives (i.e. Noah's arc metaphors) about climate change prevail in some islands like Kiribati where there is a belief that God will spare their islands. NGOs are a key forum for debating climate change, and where women are most likely to participate. Participatory communication is regarded as essential in effectively addressing communities' needs in regards to climate change. Tuvaluans for instance wanted to be involved in climate change decision making throughout the whole process, not just implementation.



B-3-3 Kliot, Nurit (University of Haifa, Israel). **Management and Mismanagement of Water Resources on Small, Warm Water SIDS - with Emphasis on Climate Change Effects.** Email: nuritk@geo.haifa.ac.il

The focus of this study is the management and mismanagement of water resources in warm small islands sized up to 12.000 km², particularly, water resources management and practice are investigated in the context of islands' resources and development and in relation to their adaptation policy to water shortages and climate-change effects.

The research is based on in depth analysis of literature, archive material and official documents of Islands' Governments concerning their policy and practice in relation to water resources. The analysis is comparative in order to generalize on core issues of policy and practice.

Many SIDS are already experiencing varying degrees of water related challenges and most are "water scarce" and "water stressed" countries (up to 1000 m³ per person per year and 1000-2000 m³ per person – respectively).

Although different in many features (size, isolation, geology, topography, climate, hydrology, development, culture) all influence water resources and management – islands share common water – related problems and challenges. The main problems concern water availability (quantity) and quality.

Water availability is effected by a) climate – including climate change stressors; b) lack of storages and/or sufficient space for storage; c) impermeable rocks and soils which prevent water infiltration into the subsurface; d) over-exploitation of the existing water resources and their salinization; e) pollution of water resources mostly by domestic sewage and water; f) competition and conflict among the main sectors: domestic, agriculture, tourism on the limited amount of water resources. Measures to enhance water availability include: a) water harvesting methods (rainwater harvesting, construction of cisterns; b) effluent treatment and use; c) water saving measures, repair of leakage, water metering; d) water transfers and importation; e) desalination.

Management of water demand is generally weak among many SIDS: water distribution systems leakage and water wastage, water thefts, lack of water metering are common features to small islands. Among the institutional and policy measures which could aid management of water demands are: relevant water pricing reduction and/or elimination of water subsidies, improved water use practices in the domestic sector and agriculture and provision of economic incentives for rational water use.

- Many SIDS are facing tremendous pressure from population growth which results in intense competition for land and water resources and ecosystems degradation, which threaten both quantity and quality of available water resources.
- In addition to the limited natural resources, SIDS have limited institutional capacity, small manpower resources base, limited scope for economies of scale.
- Insularity and remoteness leading to high transport costs.
- Proneness to natural disasters, high vulnerability to the impact of global warming and rising sea level.
- Over dependence on donor funding for capital projects, and limited access to funding.

In addition, there are many barriers to water resources management in SIDS: lack of integration between sectoral water related policies, lack of efficient local administrative structure, traditional or customary systems of land tenure, poor land use management practices and inadequate land-use policies which continue to impact on their water resources, erroneous notion that the provision of water is a social service not an economic good, shortage in data collection and management, need investments which are not affordable and inadequate water related legislation.



B-3-4 Petzold, Jan (University of Hamburg, Germany). **Social capital and adaptation to sea-level rise on the Isles of Scilly, UK.** Email: jan.petzold@uni-hamburg.de

Small islands are considered as the most affected regions from the impacts of global climate change. Therefore, the concepts of adaptive capacity, vulnerability and resilience of islands are currently discussed intensively. Small islands are regarded as particularly vulnerable, but from a different point of view, island societies feature a particular socio-cultural resilience, which distinguishes them from continental societies. But how do social structures increase the resilience of small islands towards sea-level rise? I consider the concept of social capital as applicable in order to understand the role of social networks and collective action in a context of adaptive capacity.

In this paper, I will present results from a case study on the Isles of Scilly, UK. Quantitative and qualitative research methods have been applied to analyse the various roles of social capital for the adaptive capacity of this small archipelago, 45km off the South West coast of the United Kingdom. The Isles of Scilly are representative for European small islands in an economically advanced context. They are among the most vulnerable island regions in Europe, being low-lying, directly affected by sea-level rise and increasing westerly winter storms, but peripheral and isolated as well. The Isles of Scilly are composed of five inhabited islands and many more islets and rocks. Each island is faced with its particular impacts from sea-level rise and responds in its own way.

The results of the research contribute to the general discussion on social capital and the relevance of collective action for the adaptation to global climate change. How useful is the concept? And is it particularly relevant on small islands, such as the Isles of Scilly?



B-4 Managing natural resources

B-4-1 Torii T, Kitolelei K, Nishimura Satoru, Kawai K & Kobai T. (Kagoshima University, Japan). **The Current Situation and Challenges of Fisheries Resource Management System in Fiji: A Case Study of Nakorokura Village.** Email: takapyon1973@yahoo.co.jp

The objective of our study is clarified of the current situation and challenges of Fisheries Resource Management System in Fiji through a case study of Nakorokura Village.

There are no rules in some of the village in Fiji related to the management of fishing grounds and fishery resources. Villager caught fish and shellfish for consumption by their families and selectively caught shellfish of certain sizes suitable for consumption.

However, with the spread of the monetary economy throughout the country, and development and adoption of fishery equipment and devices, the way fishery resources are used have dramatically changed. Specifically, there have been shifts from self-sufficient use to commercial use of fishery resources and from traditional fishing methods to efficient fishing methods. As operators started harvesting more fishery resources than necessary for self-consumption, a new lifestyle has been established in which extra fishery resources harvested are exchanged for money at the markets. Changes in economic environment and technological advancement have increased pressure on fishing, threatening the fishery resource level, while the order established during the era of self-sufficiency only has become insufficient for securing sustainable resource use.

In 2013, we conducted our fieldwork in Nakorokura Village that was located on the western side of main island of Fiji. From Nadi that is the second biggest city to Nakorokura, it takes one and a half hours by public transport. Nakorokura is home to 55 families (206 people). The main incomes were agriculture and fishery.

There are no correct statistics data in the Fijian village; therefore our data depended on Turaga-ni-Koro (the head of the village elected by the villagers) and the household survey. There were 55 households, and we interviewed the village with 48 households of those.

The Ministry of Agriculture and Fisheries introduced the Inside Demarcated Areas Fishing License system in 2013. If the villagers want to sell their fishing products in the market, it is necessary that they pay registration fee and get the license. And they should follow the ministerial regulation.

However, of the 12 households that were engaged in commercial fishing, only three households had the license. And it was observed that licensees do not correctly understand all the regulation rules. The current system in which fishery operators are trusted to learn about the regulation by themselves has limitations. If the Ministry of Agriculture and Fisheries wants to enforce the regulation without exception, it is necessary to notify fishery operators on the regulation details thoroughly. And it is also necessary to examine a transmission course of the information.



B-4-2 Wu, Yung-Lin (Chinese Culture University, Taiwan). **A Lohas Perspective Study of Marine Ranch in Penghu Archipelago, Taiwan.** Email: dav6688@yahoo.com.tw

Sustainability tourism industry has been the focal point for the development of Penghu. The Penghu archipelago is rich in geological basalts, culture, sea scenery and historic spots. With the tourism industry development that gives rise to economic benefits, on the other side it causes great damage to ecological environment. How to strike a balance between natural resources protection and social and economic development is an issue that we must think over. The LOHAS (Lifestyle of Health and Sustainability) philosophy is a new rising wave of lifestyle of the 21st century. The present study intends to understand marine ranching visitor in Penghu from a LOHAS perspective and how to better meet their recreation needs, environmental protection and environmental sustainability development. Challenges of limited global resources and critical environmental changes have driven the general public into the pursuit of an environmental sustainable and healthy way of living. With the concept of sustainable tourism development, health and environmental protection become more and more valued during the past few years. The aims for the present study are develop a typology for marine ranching visitor in Penghu from a LOHAS perspective. Sample visitors were selected from marine ranching visitor in Penghu and by convenient sampling. A total of 400 surveys were distributed. Data collected were analyzed with independent samples t-test, descriptive statistics, and ANOVA analysis were indicated on LOHAS tendency, based on level of education, gender and visitors' age. The study supports research conducted on other populations. Findings can provide marine ranching industry leaders in Penghu and government policy makers alike with practical knowledge with which to formulate better plans and policies of environmental protection and environmental sustainability development in Penghu archipelago.



B-4-3 Yu, Shyi-Liang, Chu, Ying-Chien, & Tsai, Chia-Wen (National Penghu University, Taiwan). **A Study of the Sustainable Development of Recreational Fishery in Penghu Bay.** Email: slyu@gms.npu.edu.tw

The ocean not only brought pioneers to oceanic islands in old times, but also gave birth to a unique history and culture as well as provided a wealth of important resources that have bearing on insular residents' livelihood. For example, communities established for fishing activities, social customs, architectural landscapes, and seashore ecosystems have all become exclusive marine assets of islands. Along with the execution of the policy of two days off each week, Taiwanese people's buoyant consciousness for leisure activities, and the transformation of mass tourism to eco-tourism, a wealth of leisure activities were hence created through an integration of local recreational resources and indigenous culture. Succeeding to such fever of tourism is a progressively increasing number of tourists to Pescadores and the idea of incorporating traditional fishery with tourism, i.e. the conception of recreational fishery- a new form of industry which incorporates traditional fishery with tourism and recreation to assist tourists to understand the culture of fishery in Pescadores.

In this study, case studies were employed to examine marine resources of each community in Magong City, Baisha Township, and Siyu Township in Penghu Bay (including Dacang Island, Caiyuan, Shihli, Chengcian, Watong, Tongliang, and Jhuwan). The results suggest that besides insufficient human resources at all communities along the coastline of Penghu Bay, some communities even suffered from sluggish activities of recreational fishery. Therefore, this study suggests taking geological locations and the feasibility of cooperating with neighboring areas into consideration as an endeavor to invigorate the recreational fishery of the whole Penghu Bay. Bearing the name of "the pearl of the inner ocean" and being situated at the center of the coastline of Penghu Bay, Dacang Island is superlatively suitable for housing a development centre which links other communities along the costal line of Penghu Bay. Through the provision and linkage of training to relevant personnel, planning for communities, and exceptional travel itinerary, it is anticipated to generate innovative itineraries for eco-tourism and propel the sustainable development of Penghu Bay.



B-4-5 Chen, Benkang, Yen, Yichi, Huang, Ginren, Zhou, Lizou, Guo, Licho, Wang, Fonren & Lin, Tsachun (Geology Association, Taiwan). **The Strategies of Development for Penghu Geo-park.** Email: chenbk88@gmail.com

The committee of Promotion for Penghu Geo-park established in 2002 has been around for 12 years, though accomplished good results in hardware and software for many geological spots, but recently, the development trend seems to be slowing down. Therefore, how to add innovative ideas to accelerate the development of Penghu Geo-park is worth discussing.

In the third Asia-Pacific Geo-parks Network (APGN) Conference held in Jeju Island, Korea, last September, the delicate "geological dessert (Geo-cookies)" launched by the Japan Izu Geopark is very attractive.

Therefore, this paper is trying to develop the strategies of development for Penghu Geo-park in use of geo-dessert.

First, choose the representative geological elements of Penghu Geo-park, including columnar basalt, massive basalt, spit, Sour Goo stone, lava flows, etc., and then look for the characteristics of Penghu existing desserts, including black sugar cake, peanuts, rice cakes, scallops sauce etc., and then to formulate strategies for future growth by interviewing with local business company people.

After the interviews, five products developed, including basalt black sugar cake, pineapple basalt cake, spit peanut candy, rice cakes and sour sauce scallops goo stone and lava and with Geo-park logo. The following are potential markets, including the earth science education units, geological professional company, relevant government departments etc., and finally extended to private tourism system, and even the world geo-park system.

The results of this paper include conceptual flowchart and the design of package for manufacturing the above five desserts, and there will be a video tape (about 2 minutes) for introducing the manufacturing process. And, hope to arouse the interest of all sectors, to discuss and exchange experience to be helpful to establish strategies for Penghu geo-park.

With the support of the community making creative geo-dessert by adding geological landscape elements, People can realize the geological meanings, and in the same time to achieve the aims of education, conservation of geo-park and it is helpful for economic growth.



B-5 Island resilience

B-5-1 Bates, Jayne & Roberts, Kristina (Mayor, Kangaroo Island Council, Government of South Australia). **The Kangaroo Island Story: Survive, Adapt, Thrive.** Email: Kristina.Roberts@sa.gov.au

Australia's 3rd largest Island, Kangaroo Island is home to some 4200, many of whom are descended from Islanders who have farmed and fished the area for many generations. The Island has an economic base of tourism and agriculture and a growing reputation as a region of excellence in food and wine production.

Tourists worldwide are attracted to the remote, uncrowded and spectacular Island, abundant in wildlife, iconic scenery and unique experiences. Over half the Island still remains under Native Vegetation, a vast area of some 2250 square kilometres, and more than one third is Conservation or National Parks, including five wilderness protection areas. It is surrounded by 550 kilometres of coastline and rich marine ecosystems, the coastal landscape ranges from soaring cliffs to long empty white beaches, towering sand dunes, seal and penguin colonies and a vast diversity of coastal flora and fauna.

Island has been awarded the best Island in the Asia Pacific and the fifth best in the world by National Geographic Traveller, based on the Islands commitment to sustainable tourism and care for the environment. Despite these attributes, and an international visitor recognition that ranks with the Barrier reef, Uluru and the Sydney Opera House, socially and economically the Island is languishing.

The causes are chronic, complex and long standing. Infrastructure exhaustion, energy restrictions, production costs, access issues, skill development, and a fragmented delivery of State services all combine to create bottlenecks to the Islands prosperous future. Over many years, reports and plans for the Island have promised much and delivered little and it is a tribute to the Islanders resilience that so many have battled on in the face of repeated disappointment.

This resilience and the passion of the Kangaroo Island community have seen them adapt and persevere, and despite these challenges are producing world class lamb, beef, grain, honey, cheese, abalone, wine and seafood and consistent tourism growth. The barriers however have impacted and resulted in limited financial return and prosperity.

In recognition of this long term neglect and of the enormous potential the Island has, the South Australia government has established the Kangaroo Island Futures Authority (KIFA) to oversee and action solutions for the Island and its work in conjunction with the Kangaroo Island Council, businesses and the community is an opportunity that the Island has never had in its 175 years of settlement....the opportunity to thrive.

KIFA has been able to build relationships and confidence with external island asset owners to ensure that their future decision making will not have long term impacts on the island and that there are clear benefits to all.

KIFA has made outstanding progress in the areas of integrated land-use policy, coordinated government delivery services, development and implementation of an island brand model, improved and enhanced utility services and infrastructure, year round tourism products and services, improved business profitability and community information services, capital and investment attraction.



B-5-2 Krishnapillai, Murukesan (College of Micronesia, Yap Campus, Federated States of Micronesia). **Climate-Smart Family Farming for Food Security in Small Islands**. Email: vazhaveli@hotmail.com; hkoike.hawaii@gmail.com

Ethnic neighboring island communities of Yap and its 14 atoll islets in the Western Pacific are among the most economically disadvantaged and environmentally vulnerable groups in the Federated States of Micronesia. Climate change amplified by regional ENSO phenomena presents many of the atoll islets within the region with unique challenges including decreased rainfall, rising temperatures, sea-level rise, contamination of freshwater resources with saltwater, coastal erosion, an increase in extreme weather events, coral reef bleaching, and ocean acidification. The effects of these extreme weather events are manifested in the “life-support systems” of atoll communities by the loss of land due to erosion and inundation (land security), by the loss of food production as a result of reduced quality and quantity of freshwater (food security) and declining habitat security. Low adaptive capacity induces atoll communities to abandon their homelands and relocate to highlands on Yap Proper. Atoll migrants to Yap Proper are confronted by lack of jobs, little governmental support, and remain destitute in a degraded environmental setting. This paper presents the results of a case study to show how a comprehensive sustainable agricultural intensification intervention combining traditional farming and insights from climate smart agriculture brought fresh promise to the displaced atoll population by transforming a carbon-neutral terrain into carbon-rich biodiverse and sustainable food production system. A greener, biodiverse agriculture system brought decent livelihoods, a smaller ecological footprint, increased resilience to climate change and enhanced food security. The potential transformative strength of climate-smart family farming in providing food security of similar climate change-forced and climate change-induced migrants is discussed. Though proven on a limited area, by scaling up with right incentives, these displaced atoll population can be at the forefront of a sustainable revolution in island agriculture.



B-5-3 Marto, Ricardo, Alvarez, Lourdes & Suarez, David (Inter-American Development Bank). **Big impacts, small territories: Building resilience in the Caribbean, while moving towards a low-carbon economy.** Email: rmarto@IADB.ORG

This paper aims to assess the role of the Inter-American Development Bank (IDB) in responding to the increasing threats of climate change in the Caribbean over the 2004-2013 period. It is structured in two parts. The first analyzes key vulnerabilities, threats, and opportunities in nine Caribbean countries - The Bahamas, Barbados, Belize, Dominican Republic, Guyana, Haiti, Jamaica, Suriname, and Trinidad and Tobago - and discusses the IDB strategy and de facto program to address those. The second presents three case studies of the IDB's role in supporting an integrated coastal zone management (CZM) in Barbados, the use of insurance mechanisms to better respond to natural disasters in the Dominican Republic, and an integrated watershed management in Haiti. This paper makes use of the OECD framework for evaluation, which includes the assessment of relevance, effectiveness and sustainability of climate change operations in the Caribbean. Interviews with key stakeholders were conducted in Barbados, the Dominican Republic, and Haiti, and relevant data were collected to estimate the IDB's support for climate change adaptation and mitigation in the Caribbean. IDB was found to be the major climate change adaptation and mitigation partner in the region: it devoted US\$488 million to adaptation and US\$548 million to mitigation activities in the nine countries. Of the adaptation and mitigation resources, 31% and 47% respectively aimed at drafting policies and legislation, institutional strengthening and research activities - while the remaining resources were used to support investments. In terms of sectors, sustainable energy was the main area of the Bank's support (40% of climate change portfolio), followed by agriculture and forestry (26%), and disaster risk management and CZM (17%). The lion's share of the portfolio has focused on three countries: Trinidad and Tobago, Haiti, and Dominican Republic, which received 66% of climate change-related resources. IDB's program has been relevant, strategic, and innovative in a few countries - Barbados, Dominican Republic, Guyana, and Trinidad and Tobago - combining different instruments to advance key policies and promote resilience to climate change impacts while moving towards a low-carbon economy. IDB's value added in the Caribbean has lain on supporting meaningful policy reforms to promote renewable energy and energy efficiency measures, as well as promoting an integrated approach to CZM combining physical infrastructure investments with knowledge generation. These activities are at the forefront of IDB support to climate change adaptation and have besides constituted a springboard for other Caribbean countries. In addition, IDB has had a decisive role in supporting Caribbean SIDS recovering from extreme weather events - nonetheless IDB is still moving slowly in the pursuit of a more effective preventive approach to disaster risk management.



B-5-4 Wu, Chia-Chi & Tsai, Huei-Min (University of Bonn, Germany; National Taiwan Normal University, Taiwan). **Tourism development and social resilience in marine protected area: a case study of Four Islands of Southern Penghu.**

Email: chiachiwu@hotmail.com

Marine protected area (MPA) is considered as a useful tool dealing with marine natural resources depletion problem. It is a social-ecological system (SES) that the access to the marine natural resources in its designated area is controlled by its governance system. While building resilience is important for its sustainability, its governance system needs to link ecological and social resilience. Tourism development in MPA is often used as an incentive for involving local communities. In order to have a tourism development in MPA that enhances its social resilience, there is a need to understand how tourism development can contribute to social resilience, its limits and what capacity the communities need for making use of it as an opportunity to become more sustainable. This study addresses these questions by using a case study of Four Islands of Southern Penghu where a top-down marine national park is proposed. A historical approach is conducted first for understanding the vulnerability of the three communities in the designated area which are shaped by dynamic historical processes and would be caused by external intervention of MPA. Second, the perceptions on tourism development, willingness to make the change and why of representatives from three communities are interviewed. The results show the three communities are all vulnerable under the exposure of external and internal stresses chronically. However the impact from the MPA would be different to them. Resilience needs to be built in different levels from individual, community to focal. Tourism development has its limit in compensating fishers' livelihood since they are reluctant to make the change. However, it can contribute to social resilience through creating livelihood opportunities for community members who are interested in it. The emphasis should not be on tourism development itself but its process for building social resilience of the impacted societies. Human-made capital is needed to be invested for capacity building. Regarding the limits of tourism development, a holistic Integrated Coastal Zone management (ICZM) is suggested for linking the governance system of SES to broader levels on temporal, spatial and functional scales.



C sessions: Small is challenging – Island economics and management

C-1 Cross jurisdictional challenges

C-1-1 Sammler, Katherine (University of Arizona, USA). **New waves in the ocean:**

cross-jurisdictional challenges and collaborations. Email:

ksammler@email.arizona.edu

The deep sea is a place of profound mysteries shrouded by the obscurity of a thousand meters of dark, cold salty seawater. It holds clues to how life began and evolved on Earth within its diverse aquatic creatures, yet less than 5% of the ocean's subsurface has been explored. As onshore resource production struggles to meet global demands, the world is turning offshore to satisfy growing food, fuel and mineral appetites. The deep seabed is on the verge of becoming a location for large-scale resource extraction projects. In this paper I will address how political technologies, like Exclusive Economic Zones (EEZ), enrolled in opening up this new space of extraction are productive of resonances or interferences with established fields of power in the South Pacific. As New Zealand is one of the first island nations making its foray into seabed mining, it will be a focal point of analysis.

This project addresses significant gaps in critical geography scholarship addressing territory, environmental governance and the political economy of nature; topics which have mainly been explored through strictly land-based practices. This study draws from archival documents to historicize and conduct contemporary analyses of the allocation of permits, environmental impact assessments, and economic valuations that are developing in response to seabed development in the Pacific. Interviews with government officials and environmental scientists in New Zealand will be used to delineate how marine space is categorized and valued, how environmental concerns about seabed mining are being addressed, and the metrics used to evaluate impacts.

The prospect of seabed mining in New Zealand's EEZ created the need for the legislative reorganization of institutions managing this space. Several other island nations are also writing legislation to establish conditions for stable mining investment. A few governments have issued moratoriums on the experimental practices. At the same time that these future benefits are being secured or delayed by governments, conservation groups, fishermen and other concerned citizens are binding together to protest seabed development because of experimental mining technologies, lack of oversight and economic plunder of this common property. Regional organizations are formulating legislative and regulatory framework to disseminate among their members.

This extension of national space into the ocean is challenging conventional institutions of governance, prompting concerns over economic fairness and environmental impacts. Clearly, transformations precipitated by the inception of the EEZ have not been homogenous, but are a function of various articulations with congealed networks of power relations already in existence. This includes relationalities between citizen groups, national, regional and international governance institutions, and various flows of capital.

The wayward physical properties of the ocean, within which neither ecosystems nor pollutants hesitate to spill over politically and legally constructed boundaries, combined with experimental mining technology make for a dangerous eco-political assemblage. South Pacific nations, while presumed to have the most to gain from developing their seabed resources, due to the fact that their EEZs are orders of magnitude larger than the islands themselves, have great uncertainties on the horizon regarding seabed mining practices.



- C-1-2 Carmichael, Cheryl (University of Prince Edward Island, Canada). **Benefits of Preferential Trade Agreements for the Small Island Developing State: A Case Study on Economic Growth within the SPARTECA and PICTA Trade Agreements.** Email: ccarmichael@upei.ca

Since 1990, the world has seen substantial growth of developing-state-to-developing-state preferential trade agreement and in many cases developing states have scarce resources to effectively evaluate economic gains from such agreements. This paper is an empirical evaluation of economic growth to preferential trade agreement by 13 South Pacific Small Developing Island States within the preferential trade agreements: Pacific Island Countries Trade Agreement (PICTA) and South Pacific Regional Trade and Economic Co-operation Agreement (SPARTECA).

A characteristic of the small island developing state within the global economy is the high level of structural openness to trade. This degree of openness is associated with vulnerability to exogenous shocks as seen in state sensitivity to foreign economic development. This paper identifies the vulnerability factors and provides supporting theory to the economic sensitivity, to foreign economic development. The empirical journey (econometric significance of variables) will examine economic gain[s] to preferential trade agreements in general, where developing island states are trade members. Additionally, if evidence of growth is present, the study will shift to a comparative evaluation of economic growth of a reciprocal preferential trade agreement (PICTA) over a non-reciprocal (SPARTECA), in respect to the same group of small island developing states.



C-1-3 Grydehøj, Adam (Director of Island Dynamics, Denmark). **Moving the Centre to the Periphery: Autonomy, Technology, and Societal Change in Greenland.**

Email: agrydehoj@islanddynamics.org

Greenland (population 56,000, primarily ethnic Inuit) is a subnational island jurisdiction of Denmark and has traditionally looked to Copenhagen for high-level political, economic, and cultural services. In 1979, however, Greenland received a form of home rule and since 2009 has had a form of self-government. Climate change, which represents an at times existential threat to island communities elsewhere in the world, has combined with technological advances to hold out new opportunities for the development of Greenland's economy as various international actors express interest in mineral exploitation and other emerging arctic industries. The Greenlandic government has shown a willingness to engage in international relations that serve Greenland's interests. Although Denmark has traditionally viewed Greenland as an economic drain and cultural backward region, the Danish state is now struggling against its loss of economic influence and opportunity to reap the rewards of Greenland's potential economic boom.

This paper makes use of a combination of officially published figures and ethnographic research in Greenland to ascertain to ways in which technology and autonomy interact in the Greenlandic context. It will draw upon theories of network governance and science, technology, and society (STS).

It is found that changing technologies of communication, transport, and mineral exploitation have empowered Greenland's self-government. New transport and mineral exploitation technologies have opened up economic horizons for Greenland, granting the island's government the necessary leverage and clout for engaging in international relations. At the same time, developments in communication technologies have strengthened the cultural network of Greenland's residents, both internally (between communities in Greenland) and externally (between Greenland and communities elsewhere in the world).

As a result of these changes, society in Greenland is being recentred, with a movement away from Copenhagen and toward a focus on the Greenlandic capital of Nuuk.



C-1-4 Li, Zhi-Jun (Xiamen University, China). **The Location of Marine Political**

Geography and the Governance of Qing Dynasty for the Penghu

Sub-prefecture: Based Mainly on state bailout of storm damage. Email:

xmzhijunli@sina.com

Due to Penghu archipelago guarded the Taiwan Strait, its' location of political geography was very important. But Penghu's physical environment was extremely harsh, lack of resources and storm-prone. Since 1683 (Emperor Kangxi 22nd years), Penghu has been included in the Qing dynasty. In order to control Taiwan, the Qing government conducted fruitful governance for this lonely archipelago. These can be obviously presented on the details (included: survey, report, relief and site meeting) of the Qing government's handling of the storm disasters. In two hundred years of governance under the Qing government, there was a rapid population growth and no rebellion incident occurred on Penghu. It was a stable society of archipelago and became military bases for controlling Taiwan. Finally, effectively stopped the nuisance of pirates on the Chinese southeast coast. Given the Qing government governed these continental surrounding islands successfully, whether Yangtze River Delta, Fujian coast, or Pearl River Delta where the society is stable, rich and prosperous.



C-2 Economic development and challenges

C-2-1 Karides, Marina (University of Hawaii at Hilo, USA). **Convivial Economics and the Subaltern Island.** Email: mkarides@fau.edu

This paper presents a subaltern perspective in conceptualizing economic alterity that build upon Schumacher (1973) “small is beautiful thesis” and Illich’s (1973) “tools of conviviality.” These authors argued for small enterprises in which individuals and groups engage in self-defined work, in creative engagement with others, and in concert with the ecological environment. They identified these arrangements as favorable and possible in contrast to the labor demands and the environmental damage of large-scale industrial production and mass consumption. The recent explosion of alternative economics reflects (although with little acknowledgement) the practices that Schumacher (1973) and Illich (1973) outlined and has inspired a growing field of scholarship. To this literature I add convivial economics, a subaltern perspective on alternative economics.

Convivial economics refers most directly to the economic practices engaged in by subaltern groups and those living in subaltern locations that facilitates their autonomy and may overcome and even undo the constraints of a dominant economic system organized around social, political, and cultural forms that perpetuate the inequalities and injustices experienced by these groups. Subalternity facilitates an expanded notion of what types of economic endeavors fit into economic alterity including activities that are not state centric, large-scale, or socially motivated. The formalization, institutionalization, and regulation of reciprocity and redistribution is overemphasized in much of the current alternative economic literature as the manner by which social economic endeavors and local alternative practices can be extended.

Recognizing the deeply historical and contextual orientations of economic production and exchange I suggest that subalterns, those who are socially or economically marginalized, maintain practices that have not been co-opted by neo-liberalism and have indirectly inspired much of the current efforts of privileged groups. Secondly, if alternative economics, broadly conceived, offer a pathway to more just economies, where can and do they occur? Unless anywhere is possible, the spatial dimension of economic alterity requires more consideration. I rely on recent work in human geography (Clayton 2010) that seeks to identify subaltern spaces in which resistance and anti-systemic projects can be found or as Merrified (1995) describes it “spaces on the margins.”

I argue that islands are informative locations from which to examine and articulate convivial economics and to consider for the development of the field of alternative economics broadly. For instance, island studies researchers argue that the retention of insular culture and economic practices is pronounced despite the historical flux of tourists, colonizers, military bases, and semi-permanent residents to islands. Islands have long been forerunners in sustainable development and deserve study for the lessons they can provide for alternative economic thinking and for maintaining island autonomy in face of outside experts that seek to define solutions to climate change without considering the economic practices of island populations. Secondly, due their colonial legacies, remoteness, and image of paradise, islands have become idealized locations to which privileged groups but also those marginalized in their society flee, permanently or semi-permanently, for example, from the capital driven, labor intense, and socially demanding Global North cities to create alternative livelihoods and engage in convivial economic practices in island subaltern space. To develop my argument I present several examples of convivial economics in islands in which I have conducted fieldwork including Trinidad and Tobago, the Republic of Cyprus, Lesvos, Greece, and Hawai’i (Big Island).



C-2-2 Preston, Nathaniel (University of Prince Edward Island, Canada). **Lost**

Mermaids. Email: npreston@upei.ca

There exist mermaids in this world. Not the mythic human/fish of lore, but the divers of Jeju island off the coast of South Korea. These Female divers use no scuba gear except for a wet suit and goggles, and they dive to great depths to retrieve abalone, and other seafood from the sea floor. The problem is that development of Jeju over the past thirty plus years has caused a disjoint in the traditional way of life on this small island. My research has explored how changing social roles and economic development may have played a role in Haenyeo decline and economic development. My research examined social and economic policy shifts toward educated employment and away from traditional fishing and farming to identify how it fundamentally changed the society. My data consisted of primary data in the form of participant observation to understand power structures, and social norms as they exist presently, and anecdotal references to the past. My secondary data consisted of a literature review to develop a framework from which I was be able to identify deviations in social interactions since the arrival of development to the island.



C-2-3 Lay, Suhjen (National Penghu University of Science and Technology, Taiwan).

Penghu Economic Development: Green Gold - Seaweed Value Chain Analysis.

Email: sjlay@gms.npu.edu.tw

Which direction should Penghu economy develop, once the referendum on gambling did not pass? Penghu relies too much on tourism. Exploring how to enhance the quality of tourism and make more effective use of its resources are worthwhile initiatives. Meanwhile, ocean resources can more effectively expand economic production value so that the Taiwan's outlying islands can develop their sustainable tourism.

Penghu has abundant fishery resources. The private enterprises take advantage of these resources to produce a series of related souvenir. We take the choice of seaweed to analyze product characteristics, market structure, the degree of competition between industries, and the value chain. To enhance the competitiveness and differences of products is an important issue for industry and government.

With the increasing prevalence of Penghu summer sightseeing, Penghu souvenir is getting more variety, for example, scallop and silver anchovy sauce, brown sugar cake, peanut brittle ... etc. Penghu economy depends mainly on tourist income. Especially, the economic output of Penghu seaweed products is about ten million Yuan. It is a substantial amount of revenue. This study will explore the most distinctive local resources, Penghu seaweed, including features and development strategies. This study will apply value chain analysis and resource-based theory to analyze the economic characteristics of seaweed products.

Research questions are:

1. whether the seaweed resource fit the four characteristics of the resource-based model?
2. Analyze the primary activities and support activities of these seaweed products value created.
3. Investigate the individual value activity whether it can be improved or innovated to increase customer value?

The study bases on Value Chain Analysis (Porter, 1985) and Resource-based Theory (Jay Barney, 1991) as a research theory. Porter divided value chain activities into primary activities and support activities technically or strategically. The total value of the value chain performance is mainly comprised by the value of the activities and profits posed. This research method also utilizes visiting scholars and experts, through their point of view, to guide research on the topic, but also and through their referrals regarding Penghu production plants in seaweed food product manufacturers, Peng-Zu Company and Chef A-Rie, for further interviews.

The research conclusions are as followings:

1. A small processing plant can gradually expand production capacity, plant size to develop more distinctive seaweed products to increased business value.
2. Technical rich industry in Penghu market occupies a certain position and a stable customer base.
3. Advanced management philosophy will help the industry for further development. Manufacturers may learn more different Taiwanese industry marketing practices which will expand the scope of marketing,

Although Penghu logistics is getting easier, the shipping cost is still concerned by many consumers. When the time to establish branch store in Taiwan Island is mature, the products' market share will be raised. In spite of that, modifying the production procedures, automation, enhances the aggregate production efficiency, such as standardization, specialization, which will enlarge the enterprise scale and bring enormous market share.



C-2-4 Juang, Yih-Ching (National Penghu University of Science and Technology, Taiwan). **Sustainable Development for Port Systems in Penghu.** Email: ycjuang@npu.edu.tw

Sustainable port development and relevant policies have become more important to attract a significant attention of academic concerns of social science including public administration, law and economics. This subject focuses on the theoretical approaches to the relationship of alternative innovations and sustainability, as well as on the specific port development in Penghu.

An Analytic Hierarchic Process (AHP) technique with IPA model (Importance-Performance Analysis) was employed to analyze the survey results in this study. It has been carried out by accessing available data and through personal contact with individuals and organizations involved with recreational fishery port in the Penghu; an offshore archipelago which can offer major service functions of leisure/tourism and recreational fishery. On this basis, an exhaustive search of relevant literature sources has been used to describe the recreational fishery in Penghu and the information is presented together with an appreciation of the social importance of this fishery, management infrastructure, and an exploration of public perception of the interactions between recreational and commercial fishery and any issues arising. This research finds the freight transportation sub-function between Taiwan and the Pescadores and the passenger ferry service among the Pescadores Islands are the two most critical sub-service functions, requiring immediate and intensive investment from the government if the four major ports in the Pescadores Archipelago wish to improve their overall performance efficiently. This research finds that the recreational fishery ferry service requires immediate and intensive investment from the government in the four major port systems such as Magong, Lungmen, Sokang, and Chihkan in Penghu. In order to improve the overall performance efficiently, sustainable transport systems also must provide mobility and accessibility to all urban residents will be another task to discuss when the needs and demands of people belonging to different groups are not only different but also often conflicting.



C-3 Development policies and strategies

C-3-1 Lourens Broersma, Nora Mehnen & Jouke van Dijk (University of Groningen, The Netherlands). **Socio-economic developments in the Wadden area, Netherlands**. Email: jouke.van.dijk@waddenacademie.nl

This study investigates population and labour market developments in the groups of island and the mainland forming together the UNESCO Worldheritage Waddenarea comprising Wadden mainland, Wadden Sea and Wadden islands. It is a nature reserve with unique plant and wild life in The Netherlands, Germany and Denmark. Compared to the national situation, the population has aged more rapidly and the number of youngsters fell, because the past decade many families with young children have migrated out. As a result not only the supply of labour in the area has fallen, but also employment has dropped as firm left the area. Regional productivity, (un)employment, population and migration are important inputs for regional planning and management. This may also have consequences for the management of coastal and offshore areas in order to maintain the specific character of the Wadden.



C-3-2 Tsai, Fuchang, Lee, Peijean, Wu, Chialing & Lee, Yenju (National Taiwan University, Taiwan). **Trans-island cooperation platform for Kinmen, Penghu and Matzu.** Issue: yenju.lee@gmail.com

The special political relationship between Taiwan and Mainland China resulted from the 2nd Chinese Civil War in 1949, the year that the People's Republic of China was founded and the Republic of China was forced to shift to Taiwan. Ever since, a unique cross-strait separation has remained until today. Hereafter, on one side, Penghu, Kinmen and Matzu (the three off-shore islands), the territory of Republic of China located in-between the Taiwan Strait, have served important strategic roles during the cold war. On the other side, compared to Taiwan, the three off-shore islands have been borne with more development restrictions, especially on social and economic aspects.

In 2008, the National Development Council (NDC) has launched a "Strategic Plan for National Spatial Development (SPNSD)". According to SPNSD, several trans-region cooperation platforms were established to realize the NDC's policies and to serve as a mediator, solving trans-region issues after Taiwan government was restructured from 3 levels to 2 levels in 1997. Nevertheless, NDC has introduced the "National Comprehensive Development Plan (NCDP)" and one major project of NCDP is to facilitate the above mentioned trans-region platforms. Professional teams are entrusted by central government to carry out supporting these trans-region development plans. These trans-region platforms include the Northern Taiwan Platform, Middle Taiwan Platform, Yun-Jia-Nan Platform, Kao-Ping Platform and Tans-island platform. The trans-island cooperation platform of the three off-shore islands was officially formed on April 23rd 2012. The 2nd year program was completed in November 2013. The 3rd year program is going on at the moment.

The biggest difference between trans-island platform and the other platforms is that most issues dealt by the three off-shore islands are highly connected to cross-strait issues. Also, the three off-shore islands' collaboration is more difficult than the other platforms and the investments in the three off-shore islands cannot function as well as expected due to the ocean separation and their dissimilarities. Hence, an effective trans-island platform is very important for the coordination of regional resources. Through the trans-island platform, the three off-shore islands can come up the most suitable strategies and plans for themselves and enhance the capacity and competitiveness of the three off-shore islands cooperation to realize the goal of sustainable development.

National Taiwan University Building and Planning Research Foundation has undertaken the task of facilitating the 2nd and 3rd year trans-island platform. Learning from the past one and half years' experience, we have come up with some development concepts for the three off-shore islands. How to take care of both the fragility and various development conditions of the three off-shore island; and how to help the 3 islands to find their own directions under the restriction of cross-strait political issues would be our challenge in the future.



- C-3-3 Mukhopadhyay, Malay, Sarkar, Manisha Deb & Roy, Saswati (Visva-Bharati Central University, Santiniketan, West Bengal, India). **Induced developmental policies in two islands of Andaman and Nicobar Archipelago, India: A dilemma in prognostication.** Email: malaygeo56@gmail.com; manisha_ds@yahoo.co.in; saswatiroy2008@yahoo.co.in

The Andaman and Nicobar Union territory of the Indian sub continent has 572 islands, scattered in a linear fashion in the south east corner of the Bay of Bengal. Out of them only 34 are inhabited, comprising of indigenous tribes of both Negroid and Mongoloid origin, some of them later on were rehabilitated with the mainland Indians (Gangwar et al, 1984). There is a long trail of history of contact into these islands, since their discovery. Since, the foot prints of the outer world came into the scene, several developmental policies are still being introduced. The tendency of the planners in order to sustain their immediate benefitting policies abstain them from thinking at the grass root level (Mann, 1978). This paper is going to deal with the impact of intruded developmental policies within the domain of two islands – Car Nicobar and Little Andaman Islands of the Andaman and Nicobar Archipelago.

The present authors paid visits into these islands to go through the status of the developmental policies. After a precise survey on both these islands, compiling the primary with the secondary data and relating with the past literature have come through several disappointing observations.

This paper is intended with crucial objectives. Firstly, to find out the nature and extent of the implemented policies taken up in the name of Island safeguards. Secondly, to outline the consequences of changes due to those induced policies within the Island Environment. Thirdly, to predict the future of these two islands after the induced developmental changes.

The impact of these policies had been drastic on the physical as well as the socio-cultural aspects of both these islands. Alike other island system, these islands of the Andaman and Nicobar Archipelago are categorised as the biodiversity hotspot with its lush green tropical evergreen rainforests, flora and fauna. The ecosystem concern of both these islands is kept at a secondary column with a priority given to the present day developmental policies which includes construction of concrete buildings, air strips, jetties, roads amidst the rainforest, timber harvesting (Sekhsaria, 2003), foreign crop plantations and many more. These are quite enough to turn it to a fragile ecosystem in the upcoming years (Mukhopadhyay, 1999).

The Onge tribal community of Little Andaman Island and the Nicobarese of the Car Nicobar Island, as adhered with the nature for ages together have attained a deep essence of understanding the natural dynamics of their surroundings to make hunting and gathering as their means of sustenance. Inculcation of foreign policies as sought after by the planners in the tag of development has been weakening their community philosophies from its root. The creation of Co-operative societies, involving them in the livelihood of the popular culture, introducing habits of the outer world in both these Islands' culture are seriously listing them at the verge of extinction.

The authors would like to intimate their humane suggestions to the planning systems to think before leaping into the issues of these sensitive tribal communities and the fragile island ecosystem.



C-4 Economy of smallness

- C-4-1 Fahie, Dereck (Long Look-Tortola, the Virgin Islands). **To what extent could an intangible concept be transformed as a tangible product on the commercial market? A case study of the Deputy Governor's History Research Programme in the Virgin Islands.** Email: d_fahie@hotmail.com

This paper explores the way in which an intangible concept may be transformed into a tangible product in a way that will contribute to the economy. This paper uses the specific case of an award initiative by the Deputy Governor's Office of the Virgin Islands that is operated under the Archives and Records Management Unit. The deputy governor's history research programme spurred an interest in documenting local history through research. It introduced several intangible concepts through themes also suggested ways in which to transform the intangible concepts. The initiative play a role by selecting potential submissions based on the screening process. The concept of a human related intangible flow was explained in Cardao-Pito (2010) intangible flow theory as the movement of an element, deriving from a person or group of persons, that cannot be precisely identified or realized by the mind; and cannot be appraised at an actual or approximate value. Firstly, this dissertation reviews existing literature concerning the definition of intangibility and the difficulties and benefits of creating tangible products from intangible concepts. Secondly, it examines the entries that were submitted for consideration to the deputy governor's history research programme. Research information was gathered from a series of personal recorded interviews with, the Deputy Governors History research programme award winners through case studies. It adopts a case study approach that uses qualitative research which Denzin & Lincoln (2000:3) wrote that it involves the studied use and collection of a variety of empirical materials- case study; personal experience; introspection; life story; interview; artifacts; cultural texts and productions; observational, historical, interactional, and visual texts- that describe routine and problematic moments and meanings in individuals lives. The case study follows the data collection guidelines of 'evaluating a program' (Stake, 1995). The case studies will identify the challenges faced while transforming an intangible concept to a tangible product on the commercial market so it can contribute to the economy of the region.

This paper will be significant to the creative industries and economies with population under 100,000 that have limited mineral resources because it will inform history researchers about technological constraints, accessing information are challenges faced making intangible concepts tangible. By combining the empirical information and theoretical framework, it is suggested that history researchers could overcome the challenges faced making an intangible concept "tangible" withstanding of the flow of economic material elements such as cash or other kinds of intangible flows.



C-4-2 Li, Sui-Ling (National Penghu University of Science and Technology, Taiwan).

Estimating and Forecasting Air Trip Distributions of Off-shore Island

Residents in the Busy/Off-Seasons. Email: suiling@npu.edu.tw

Off-shore island sightseeing trips by air reached 802,626 passengers last year 2013 and occupied 84.33% of the total tourist trips. The proportion between residents and tourists of Makung airport passengers in busy and off-seasons shows reverse the trends, which the ratio of passengers between the residents and tourists reached nearly 1: 5 in busy seasons during April to September every year, contrarily the ratio of passengers between the residents and tourists reached nearly 1: 1 in off-seasons during October to next year March. Since Makung airport is not a metropolitan airport, there aren't any more business passengers; only vacation and leisure passengers. These factors form unstable airline schedules and flight frequencies during different seasonal conditions, and also cause the residents to have to suffer inconvenient air trips in the off-seasons. Penghu County Government has required the airlines and Civil Aviation Administration to increase available frequencies during peak seasons to enhance positive development of local tourism industries. During the off-season or New Year holiday, due to the airline's policy of flight reduction, Penghu County Government also requires airlines to add additional flight schedules to serve the residents transportation need between Taiwan and Penghu off-short Island routes. In order to solve the issues between transportation needs of the residents, transportation demands of the tourists and the operating dilemma of the airlines, this study considers the basis and right estimators of how many residents and tourists in different seasons must be constructed, and then the airlines assigning how many flight frequencies in different seasons will be very clearly discussed and allocated. Therefore, this study collects the resident subsidies and the tourist trips data of Penghu County Government, and the passenger data of Makung airport. The gray forecast and multiple regression models are applied to predict the number of residents in the various routes by air in busy/off-seasons. The outcomes can provide flight schedule planning and references for the airlines, also recommend CAA adjust and modify flight schedules and frequencies of off-short island.



C-4-3 Spilanis, Ioannis (University of the Aegean, Greece). **The attraction of small islands to business and residents: a European perspective.** Email: ispil@aegean.gr

Islandness is the common characteristic of all islands, regardless of their size, population and level of development. Islandness expresses 'objective' and measurable characteristics, including small land area size, small population (small market), isolation and remoteness, as well as unique natural and cultural environments. However, it also involves a distinctive 'experiential identity', which is a non-measurable quality expressing the various ways in which islands and islanders are connected.

With various small islands facing economic decline, a study - called EUROISLANDS - financed by the European Union (under its ESPON program) sought to identify factors which are attractive for establishing both competitive economic activities and attracting population. Without these two reinforcing trends, island socio-economic viability is severely threatened.

The EUROISLANDS study sought to address these key questions: What is the situation of Europe's islands within the context of sustainable development? What has caused this situation, and does islandness matter? What policies would be appropriate for increasing the attractiveness of islands and ensure that their development meets the tenets of sustainability?



C-4-4 Kao, Shao-Yuan (National Penghu University of Science and Technology, Taiwan). **The Effect of Image and Travel Satisfaction upon Siyu Township Tourism of Penghu.** Email: penghushao@outlook.com

Penghu is an archipelago county and abounded with tourism elements, such as diverse travel patterns, culture tourism and famous Pescadores (Siyu Township) tourism. Especially, Pescadores, attracted by tourists from not only Taiwan but also all over the world, is located at the end of Great Bridge, which is connected between Baisha Township and Siyu Township. The aim of the study is to explore the relationships among motivations, experience quality, tourism image and tourists' satisfaction of tourists to Pescadores and understand their travelling behaviors. Definitely, the tourists visiting Pescadores were the study's subjects and there were 500 purposive samples issued. Moreover, 466 valid questionnaires were collected, which constituted 93.6 percentages of all. Furthermore, according to research purposes and the hypothesis, SPSS 12.0 statistical software was performed and the functions of statistics, for examples, exploratory factor analysis, independent sample t-test, one way ANOVA, Scheffe's post comparative law, canonical correlation and multiple regression analysis were applied. The results showed that there were significant differences among travel motivation, experience quality and tourism image tourist. And, also, travel motivations, experiences and tourism image quality can effectively predict tourist satisfaction. Simultaneously, the methodology can be repeated and applied to archipelago places not only in Penghu but also in others of the world.



C-5 Island Tourism

- C-5-1 Rolle, Sophia A., Minnis, Jessica & Bennett, Ian Bethell (The College of the Bahamas). **The Impact of Tourism on Bahamian Society, Economy and Culture: A study of Bimini, Abaco and Mayaguana.** Email:
bethellbennett@yahoo.co.uk; drsophiarolle@gmail.com;
Jessica.minnis@cob.edu.bs; Ian.bethelbennett@cob.edu.bs

While The Bahamas has been in the tourism business since the mid -1800s, its approach to tourism development has seen minor changes. As the tourism product evolved there have been differing policies regarding the size and type of developments, development incentives, and commitment to sustainability of tourism resorts and commitment to sustainability of the lifestyles and culture of the local communities in which these resorts are located. Part of the government's Progressive Liberal Party 2002 Anchor Project policy that sort to create employment on each island, was the creation of these resort communities. There has, however, been no development plan.

This project seeks to measure the impact of tourism development on small island communities. It studies three island where large-scale developments have been introduced to measure the impact these have had on the culture and lives of the local inhabitants. The project focuses on Bimini, Abaco and Mayaguana and gathers data through surveys and interviews. We show that while tourism has its benefits to the local communities it also comes with sizeable drawbacks, especially when not managed adequately.

Tourism development, no matter what scale, has the potential to impact the lives of island residents and requires a commitment from national governments. While residents have benefited from increased jobs and increased income, they have been plagued with infrastructural challenges like the sustained provision of electricity, access to medical clinics, increased illegal immigration, inadequate school facilities as well as a loss of local culture and a change in lifestyle.



C-5-2 Fricke, Jörn (NHTV Breda, Academy of Hospitality and Facility Management, The Netherlands). **Authenticity in commercializing culture tourism destinations on islands: the Case of Georgetown (Penang).** Email: belahu@gmail.com

The limited physical space of islands is a double-edged sword: while island-ness can be one of the assets that attracts tourists, the physical constraints can also cause challenges with respect to socio-economic development, especially as outside pressures for economic development increase. In biology, evolutionary changes on islands have been documented as passing through accelerated stages (Millien, 2006), and similarly, it could be argued that socio-economic development in isolated places such as islands is accelerated through their limited space and island-ness, at the expense of social groups that have difficulty coping with this change. Island-ness is also connected to a perceived authenticity of island culture, 'othered' through a tourist's gaze (Urry & Larsen, 2011).

In the arena of tourism development on islands, the island of Penang (Malaysia) could be considered a test-case for such accelerated changes, and what happens to local culture and locally-run small and medium-sized tourism enterprises in a rapidly developing and commercializing island tourist destination after the acquisition of a UNESCO World Heritage Title. Despite improved infrastructural connection, Penang retains its island-ness, and through the tensions of limited space and increased demand, property prices on the island have increased. In this contented island space where tourism stakeholders' interests meet, join and collide, the relationships between ethnic groups, local entrepreneurs and increasing numbers of outside investors change and become re-defined. At the same time, cultural authenticity is 'gazed' through either a sun-and-beach view or a limited two-dimensional and museum-like experience of local culture that neglects the underlying fabric of contemporary island life, its society and culture (Alberts & Hazen, 2010; Pendlebury, Short, & While, 2009).

During two stays in the UNESCO Heritage area on the island of Penang in 2009 and 2010, in-depth interviews were held with tourist entrepreneurs, local government representatives and tourists to look into the development of tourism. Property prices on the islands, which had started to increase after the Rental Act was lifted in 2000, grew disproportionately after Penang obtained the UNESCO World Heritage Title in 2008. With the consequent displacement of small family-owned businesses, economies of scale in a fast-growing property market cause small and medium-sized tourist facilities to either fail or need to go up-scale. Relatively affluent growth-oriented entrepreneurs – many non-islanders from peninsular Malaysia or abroad – are purchasing heritage properties to redevelop them into boutique hotels. Today's tourists are often unaware of the change and gaze at a heritage "façade", while those tourists and inhabitants of Penang who experience the city and island in the past mourn the loss of the local street culture and life.

The island of Penang is a showcase for the challenges of a cultural destination under pressure of positioning itself as a World Heritage Site. Commercialization processes reveal diverse perceptions of authenticity, and to what extent certain parts of island culture can be used to the benefit of entrepreneurial activity, while other parts appear to be sacrificed. It could be argued that the island-ness of Penang not only creates clear physical boundaries but also helped create a unique local culture that attracts tourists. Recent commercialization of local culture has magnified the pressures that affect how authentic this local culture is perceived and sold to tourists.



C-5-3 Fahie, Marsel (Long Look-Tortola, the Virgin Islands). **To What Extent Could the Virgin Islands Cruise Tourism Industry Reduce the Risk to Business Continuity in the Event of a Natural Disaster or Man-Made Crisis?** Email: marsel550@hotmail.com

Cruise tourism has become a source of generating revenues for many countries. As countries continue to invest in cruise tourism, the stakeholders should be mindful of the threat natural disasters or man-made crises poses to the continuity of their business operations. Therefore, it's imperative that governments and organizations throughout the cruise tourism industry develop, implement and maintain business continuity measures in order to mitigate disruption in continuing business services following a natural disaster or man-made crises such as hurricanes, terrorism, or supply chain disruption.

Hurricanes or man-made crises can be destructive forces that cause substantial monetary damage to the cruise tourism industry and business continuity of organizations operating from within cruise tourism industry. This dissertation reviews academic literature that highlights the concepts of BCP with regards to the cruise tourism industry and reducing the risk posed to an organization's operation in the event of a natural disaster or man-made crises.

Business Continuity Planning (herein 'BCP'): The process of developing prior arrangements and procedures that enable an organization to respond to an event in such a manner that critical business functions can continue within planned levels of disruption"(as defined by Bird 2011:10).

The objectives of this study are:

- 1) To identify ways in which to plan for potential and unforeseen interruption, testing a set plan of action in response to undefined interruption, implement and review the weaknesses and strengths of the prescribed plan of action;
- 2) To use the case study method by Yin ((2009) to analyse agencies in the public and private sectors in order to foster a better understanding of the systems and controls that are implemented in order to maintaining the continuation of services during the interruption of business services in the event of a natural disaster or man-made crises; and
- 3) Underscore the benefits of formulating business continuity as part of the strategic plan in their overall management policy.

This research agrees with the theoretical perspective as stated by Ritchie (2008:316). He argues that "tourism managers must change their thinking from a reactive approach to tourism disaster management toward a proactive planning approach."

This research concludes that the public sector is aware of BCP and relies on government for guidance with BCP. On the other hand, most businesses in the private sector are unwilling to incorporate BCP. Therefore, the government should start to educate the public specifically managers and businesses owners on BCP.



D sessions: New waves in the ocean – Island communities & livelihood

D-1 Sustainability on islands

D-1-1 Lewis-Ambrose, Dana & Hodge, Derry (H. Lavity Stoutt Community College, Tortola, British Virgin Islands). **Responding to the Needs of a Small Island Community: Developing a Renewable Energy Training Programme in the Virgin Islands.** Email: dlewis@hlsccl.edu.vg

“Whether it is in the form of fuel to produce electricity, or power to drive the transportation sector, energy production and the way it is used has a significant impact on the economy and environment in the Virgin Islands. Imported fossil fuels, mainly diesel and gasoline, currently supply approximately 99 per cent of total energy needs in the territory. However as the need to lessen the dependence on fossil fuel grows, so does the need for training in alternative, renewable energy production methods. The local community college has established a programme to meet this training need.”

The aim of this paper is to assert the ability of the H. Lavity Stoutt Community College (HLSCC) to deliver training and examinations in Renewable Energy to the requisite practitioners in support of sustainable development targets. The H. Lavity Stoutt Community College was established in 1990 under the College Act of that year. The institution is a comprehensive community college that offers university-parallel, technical-vocational, and adult continuing education programmes. In 2013, the Government of the Virgin Islands passed a Renewable Energy Policy at its Ministerial Cabinet level, in support of reducing dependence on fossil fuels. The government is now in the process of drafting legislation in support of this initiative. In response to this effort, the H. Lavity Stoutt Community College has developed a Renewable Energy Training Programme with the following objective or goal in mind: “To train and certify practitioners in the fields of construction, architecture, and electrical installation with the skills to install photovoltaic systems in support of the reduction and usage of traditional power generation methods.” The programme sets out the benefits of having energy generation through renewable sources as a part of the BVI’s energy mix. The main benefit would be to have local practitioners trained in the methods of how to achieve energy generation using on alternative energy elements. The programme will be delivered in a two course structure within the HLSCC’s Centre for Professional Development and Community Education Course Offerings in 2014. The first course is the equivalent to an IREC ISQP accredited entry level Photovoltaic (PV) course offering the North American Board of Certified Energy Practitioners (NABCEP) Entry Level Exam and is based on NABCEP’s Job Task Analysis for PV installers. The second course covers advanced topics on design and installation of residential and commercial PV systems. The Renewable Energy Training Programme will be reviewed and evaluated on two bases: (i) Internally at the completion of both workshops as is customary with all programmes instituted by HLSCC and (ii) Externally, participants completing these two courses will be required to complete the NABCEP examinations. The full cost of this programme to be executed is estimated at US\$24,709.00. The programme is set to commence in April 2014 and the results of the programme will be assessed and made available thereafter. The College is extremely proud to be affiliated with this initiative, as it continues to provide quality higher education and lifelong learning that is responsive to changing community needs, the global economy and evolving technology. Specifically, HLSCC remains committed to serving the Virgin Islands and its community by aiding its improvement of life, developing a vibrant economy, and co-facilitating its nation building. The study used mixed research methodologies.



D-1-2 Hatayama, Yuki. (Kagoshima University, Japan). **How to counterbalance diverse issues of industrial development and nature protection in Kikai, the Amami Islands, Japan.** Email: yuki_hatayama@yahoo.co.jp

Kikai Island is the only island of Kikai Town in the Amami Islands, Kagoshima Prefecture, Japan. The dominant crop, sugar cane, covers 61.5% (12.43 km²) of all the cultivated area because it can withstand typhoons and because it is not traded under the global competitive free market. This policy support by the Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF) aims to subsidize both the sugar industry and small island regions in Kagoshima and Okinawa Prefectures. In Kikai, sugar cane amounts to 64.3% (1,260 million yen) of gross agricultural production but other products excluding cows and pigs for meat, amount to only 11.1%.

Kikai Town has broadened the fields for cultivation under the prefectural public projects. Some islanders believe the projects surely improve the agricultural operation because larger fields enable them to use larger machinery, which achieve more cost-cutting. Others argue that broadening fields is just for keeping three construction companies on the island. They say that even if cultivated fields are broadened, the number of islanders engaged in agriculture has become less because almost all the small islands in Japan, of course including Kikai, confront diverse social problems for example population decline, a low birth rate, an aging population, a lack of employment and education opportunities. Moreover the island is uncompetitive because of higher freight cost and a climate not conducive to large scale agriculture compared to other regions in Japan and abroad.

This presentation suggests an idea for counterbalancing diverse issues on small islands with careful considerations for some limitations owing to islanders' experience and somewhat inadequate government regulation. A concrete example of this is the problem of banyan trees (*Ficus microcarpa*) on Kikai.

Methods of data collected are via interview, analysis of official documents, and exploration activities. Ordinance A came into effect in 1973, the first municipal law for nature protection in Kagoshima Prefecture. Banyan trees throughout the island are one of protected floras (§13-1) and the town is obliged to make its best efforts for their protection (§13-2). The town mayor can employ observers to manage protected floras (§27-1) but this is generally ineffective. Ordinance B aims to manage and better utilize cultural properties including flora and fauna. The banyan tree in Tekutsuku village is particularly designated as a natural monument because of its scientific value. The shortest distance from the corner of the nearest cultivated field to the trunk of the banyan tree is about twelve meters. According to "The Manual for the Prevention of Agrichemical Drift" published by MAFF, even a small scale spray can reach the tree. There is a concern about the possible emergence of agrichemical pollution over the banyan tree and surrounding flora and fauna. Moreover the change of wind current from the sea caused by tree trimming for broadening cultivated fields also increases the threat. Actually some banyan trees on the island's maritime areas died after public projects in the past. Some islanders regard the reason as a violation against natural providence but the town has not researched the influence upon the tree prior to or after construction.

The regulation standards in both ordinance A and B are ambiguous. Though they rules the importance of balancing nature protection and other public interest, industrial development is likely to be the major priority because islanders in Kikai take existence of nature surrounding them for granted. Moreover their closeness makes them hesitant to complain because they assign the highest priority to avoid conflict for the sake of keeping the small island's community cohesion.

Kikai Island should introduce the process of counterbalance diverse issues by islanders and non-islanders. In addition to this Kikai Town should set a concrete standard to counterbalance in each cases.



D-1-3 Huang, Wen-Hua & Lee, Su-Hsin (National Taiwan Normal University, Taiwan).

Analysis Of Lieyu Governance From Perspective Of Place. Email:

ecohook@gmail.com

This year is the tenth year of Kimen Declaration (ISISA VIII) and now the Big Kinmen Island is in the stage of economic growth and rapid changing. As the second-largest island, Lieyu (Little Kinmen) is looking for changing. Lieyu is near the border between Xiamen (PRC) and Kinmen. Literature review is to explore and understand the context of development and governance of island and as the analysis and reference. From the perspective of island place, we used the ethnography (for the holistic understanding of Lieyu's culture), participant observation, and in-depth interviews to probe the current situation of Lieyu Island's governance as well as to clarify the factors that influence the development of this island. We found that development of this island was affected by (1) the perception of rapid development of Kinmen and Xiamen Islands and (2) the amount of financial subsidies from local government. The construction of Kinmen Bridge and Kinmen National Park withdrawn from half of the coastal areas were the most obvious evidence. The governance's model of this island is moving to catch up development.



- D-1-4 Tsai, Liang & Lin, Cheng-Shih (National Taiwan University, Taiwan; National Quemoy University, Taiwan). **The Negative Impacts of State Subsidies on the Sustainability of Islands.** Email: tsaibright@gmail.com; cyrano@nqu.edu.tw

One of policy tools used by Taiwan's central government to help and subsidy local governments in the islands is through special budget allocation based on the "island development and construction act". The original purpose of this mechanism is designed to balance the deficit of local finance and then improve the infrastructure quality for future development. However, the subsidy partially ended in harm to the fragile island eco-systems as well as negative impacts to the sustainable development of these small islands in many other aspects. The contradiction of policy objectives and results has been investigated by several studies regarding the negative impacts of the existing subsidy on the physical environment, which is widely recognized by the public. Compared to the radical change of physical environment caused by capital expense for construction, the gradual change caused by "invisible" institution and operating expense is more subtle and unintentionally ignored.

This research thus examines how the sustainability of Kinmen islands is influenced by the subsidy institution. As a result of the indispensable part of daily life for the islands, transportation subsidy of airfare for islanders is selected as a case study. The data collected for this study includes subsidy regulations on airfare for islanders, airline financial reports, international oil price and airfare for different flights. These data are further used to examine the consequences resulting from a conceptual model of supply and demand for flight tickets.

The results shows that although the existing mechanism of airfare subsidy is beneficial to airlines for super-normal profit, it leads to six major negative impacts related to waste of governmental expenditure, loss of economic welfare, social inequality due to the rich gaining more from this mechanism, lack of flexible pricing, interference of free-market competition for flight and disadvantages to the tourism development.

The existing institution provides huge subsidy on airlines is key to keep the unreasonable profits of the companies. Therefore, the companies are motivated to lobby the Department of Transportation maintaining the current subsidy mechanism and keeping high face value of airfare, in order to take advantage from this system. Moreover, if this situation continues, the remaining seats available for non-islanders will reduce to the amount only in favor of customers whose demand is price inelasticity. The high airfare of flight to Kinmen Island will likely causes this place difficult to attract general tourists, compared to other similar island tourism destinations accessible with reasonable tickets. This chain effects, if happened, will definitely hinder the economic development of sustainable tourism that the island relies mostly on, and divert limited financial resource from more attractive responses to island sustainability.

According to the research results, one of the possible solutions to abate the potential negative impacts on the sustainable development is to directly subsidize the islanders instead of the airlines. Only if the customers have the power to influence prices for the service provided by the oligopoly, the near-optimal policy pursuing public interests can then be expected.



D-2 Local knowledge and economy

D-2-1 Breckwoldt, Annette (Leibnitz Centre for Tropical Marine Ecology, Bremen, Germany). **The importance of local perceptions for small island marine resource use systems, with examples from Gau Island (Lomaiviti, Fiji).** Email: annette.breckwoldt@zmt-bremen.de

For community-based marine resource management (CBMRM) to work, understanding local community stakeholders' perceptions of resource status, use and management seems important but has long been neglected. These perceptions may form the basis for people's actions in situations where both ecological and socio-economic data is scarce (as often is the case for small islands). The relation between local perceptions and expectations (how the former can influence the generation and evaluation of the latter) is conceptually discussed and exemplified by a study from the offshore island Gau in Eastern Fiji. On Gau, a resource-dependent inshore subsistence fishery is still prevalent. Government departments are overwhelmed with their responsibilities on the main islands and respect as well as rely on the general autonomy of the island communities (theoretically supported by a customary tenure system).

An exploratory mixed-method approach provided insights into local perceptions on change in and around one customary fishing ground (qoliquoli) on Gau. The approach included semi-structured interviews, focus groups, life history interviews and participant observation to reveal more hidden information. Interviewed and followed were experienced fishers, both men and women, of different ages, living in four coastal communities using the same qoliquoli.

Perceptions varied between generations, but most interviewees expected that the numbers of fishers would increase further and fishing would involve more boats and greater use of longnets and spearguns. Only elders' perceptions of marine resource depletion were quite uniform, with some species having 'basically disappeared'. Perceptions of younger community members were more diverse, depending on whether they went fishing frequently and/or were engaged in the recent CBMRM development process. These efforts encompassed mainly closed areas, restrictions on fishing gear and methods, and appointment of fishwarden, and there was a general trust that resource and reef status would improve again under this scheme. Particular high expectations were expressed regarding tabu areas, traditional closed areas adapted to modern management demands.

The general trust in the introduced management efforts resulted not only in expectations that resource status would improve again soon, but also that the present resource use could be extended (i.e. 'there will be a higher abundance of fish and easier to catch'). Attention will have to be paid to this outlook for the future resource use and management. Equally important from conservation viewpoints is a follow-up of resource status of those species having been reported as rare or absent. To understand the perceptions of the local stakeholders involved in all CBMRM planning stages are an important stepping stone and deserve attention and further investigation. An improved understanding of the links between perceptions, expectations and action, coupled with records of local ecological knowledge and resource monitoring is needed, so that specific measures can be adopted and accepted by the island communities.



D-2-2 Yamamoto, Sota, Kawanishi, Motohiro & Nishimura, Satoru (Kagoshima University, Japan). **Food Security on Pingelap Island, Pohnpei State, Federated States of Micronesia.** Email: sotayama@cpi.kagoshima-u.ac.jp; sotayama1@gmail.com

Pohnpei State, Federated States of Micronesia (FSM), includes eight outlying atolls, each covering an area of less than 2.6 km². To the southeast, almost like stepping stones down to Kosrae, are Mokil Atoll and Pingelap Atoll, which are located 129 and 225 km from Pohnpei Island. Pingelap Atoll consisting of three islands (totally 1.8 km²), and only Pingelap Island is inhabited.

In the 1950s, people in FSM still ate a “traditional” diet based on starchy staple crops (bread fruit, root crops, banana etc.) and marine resources (Murai, 1954), but this began to be replaced by a modern diet rich in rice, flour, sugar, fatty foods, and other imported, processed foods after the United States Department of Agriculture started its supplementary feeding program in the 1960s (Englberger et al., 2003). This phenomenon accelerated after a Compact of Free Association was signed between FSM and the United States in 1986 (Hezel, 2004). Since then, FSM has faced serious public health problems due to this new diet and other lifestyle changes, and the government, non-governmental organizations, and many researchers have encouraged people to cultivate vegetables such as squash, cucumber, lettuce, tomato, and eggplant to improve public health. However, the outlook for this project is bleak, partly due to local inexperience in cultivating such crops.

On small islands and atolls, imported foods and medicines may not arrive for more than a month if a typhoon or an oil crisis occurs. A government ship, which can carry many food items, daily necessities, etc., came to Pingelap Island only twice last year. An unscheduled direct flight (very small airplane) from Pohnpei to Pingelap charges very expensive transportation fees to islanders. Therefore, for food security, it is imperative to re-discover plants already naturalized on each island. In this study, a detailed study of household food consumption is shown to represent the present situation of food security on Pingelap Island.



D-2-3 Du, Yu-Han & Yu, Shyi-Liang (National Penghu University of Science and Technology, Taiwan). **From the mountain to the island: Cross cultural adaptation and cultural reconstruction of indigenous migration in Penghu, Taiwan.** Email: bimoofish@hotmail.com

Penghu island is an archipelago situated in the west coast of Taiwan. For the past few decades, there has been an increasing number of indigenous population. Some are migrants in search for better job opportunities, but most of them, women in particular, are marriage migrants. From the mountains to an island, those indigenous peoples had to experience cross cultural adaptation of all kinds.

This study is targeted at indigenous migrants in Penghu archipelago to discover the adaptability to various aspects of lives and the process of constructing a "home" in remembering of their traditional indigenous communities. In-depth interviews were conducted with Penghu indigenous migrants at different ages and genders to understand motivations of the relocation and culture adaptation with family, career, language and environment and so on. A participant observation was also adopted in light of understanding movements and measures taken regarding establishment of indigenous culture-based context and environment in Penghu. This project was aimed to answer two key questions: the first concerned the process of transitioning into a host culture and the influences brought to their lives, meanwhile, the second focused on whether cultural reconstruction understood as a process of cultural maintenance and inheritance in Penghu.

The results reveal that, firstly, the acculturation attitude of indigenous migrants in Penghu tend to be integrated in the dominant society which would entail a friendly interaction with the host culture and sustain the indigenous culture as well. Secondly, cultural revitalization functions not only as a linkage to the original communities but the most important access to education for the next generation regards to indigenous culture and identity.



D-2-4 Hung, Pei-Hsun, Chen, Wei-Lin, Hsu, Pei-Hsin & Chao, Chih-Liang (Providence University, Taiwan). **Spatial Evidences on Residential Perceptions toward Island Sustainable Development.** Email: homdobe@gmail.com

Liuqiu Island is famous for its coral formations, abundant natural tourism resources, and easy-going culture. These attributes have attracted 300,000 numbers of tourists every year. The large numbers of tourist activities in the intertidal zone lead to Liuqiu Island biodiversity decreasing quite rapidly. In order to protect the ecological environment, the natural resources have been limited use and established the tourist regulation at Shanfu Ecological Corridor. However, these limited use and attitudes toward tourism development have conducted different opinions from residents toward natural resources. In terms of the usefulness of Geographic Information Systems (GIS) as a tool for public perception, data from tourism impacts toward many local and regional planning activities have been collected and applied in spatial analysis. The tourism impacts scale has been developed through field investigation and literature review, a total of 33 items were selected. The main on-site survey was conducted and a total of 247 questionnaires were collected from stratified sampling across communities of the Liuqiu Island in August to September, 2012. The data in this study were analyzed with exploratory factor analysis (EFA), cluster analysis, and GIS analysis using SPSS 18.0 and SuperGIS Desktop 3.1.

Focusing on the residents all over the whole Liuqiu Island, research examines differences in resident tourism perceptions and attitudes across communities categorized on the basis of the community's existing level of tourism. The results from exploratory factor analysis showed that eight tourism impacts, promote life consciousness 、 promote local economic 、 promote social welfare 、 lower quality of living environment 、 lower social order 、 improve public landscape 、 increase cost of living 、 competition of life resources. According to the spatial analysis, the constructs from tourism impacts, both positive and negative, showed that the residents' perceptions in Liuqiu Island spatially clustered around main attraction area and increase with intensity of tourism development. With respect to resident attitudes toward tourism development, the results suggest that resident attitudes increase in favorability with closing core area of tourism development. Finally, the results also indicate that resident support for special tourism user fees and taxes increases with increasing levels of tourism development. Finally, the results of this study can provide other researchers for follow-up analysis about tourism impact with GIS and decision-making on Island sustainable tourism development.



D-3 Island futures and connections

D-3-1 Larsen Topsø, Karin (Centre for Regional and Tourism Research & Aalborg University, Denmark). **From Guilt to Engagement: out-migrated youth and their engagement in their home communities.** Email: ktl@plan.aau.dk

Rural island communities are increasingly experiencing the effects of pervasive globalization processes, which drive youth to migrate to urban areas in order to access higher education and work opportunities. Such out-migration patterns are often wrought in negative discourse encompassing terminology such as brain drain, demographic tilting and other descriptions, which focus on the negative effects of loss of resourceful young generations. Local island community policies attempt to counter-act these effects by focusing their settlement policies on ex-island youths. Most of these programmes are ineffectual at best, but often leave out-migrated youth feeling guilty, if they choose not to move back. Deciding not to move back to their island home communities is, however, not the same as not being engaged in those communities.

Increasingly, out-migrated youth from the Danish island of Bornholm are starting to engage themselves in and arrange different activities on Bornholm, ranging from huge semi-private beach parties to organising a large annual music festival 'Wonderfestiwall', where the core organising committee is made up of young ex-Bornholmians.

The contrasting features of out-migrated youth and their attachment to the island homes, where they have grown up are at the center of this paper, which reports on a study carried out by the Centre for Regional and Tourism Research on the Danish island of Bornholm. The purpose of the study is to map the engagement of youth in their original island home communities and to assess the value of such engagement resources.

The paper reports the findings from a survey among 160 out-movers from Bornholm between the ages of 17-35 years as well as eight qualitative interviews. The survey focused on mapping ex-Bornholmian youth activities on the island, as well as on the social structures and networks connected to such activities.

The results of the study showed that youth who have moved away from their island home communities continue to be a rich resource for those communities. They function as hyper-loyal tourists; they are re-inventing and re-constructing Bornholm's brand as a destination; they function as ambassadors for Bornholm in the capital of Copenhagen; and finally, they function as mobile and engaged knowledge capital, which they activate in their home communities.

The paper raises questions about the discourse of local governments that experience youth out-migration as singularly negative. The paper argues that discursive constructions about the continued value of young people to the communities they have grown up in should be more in focus.



D-3-2 Austin, Linda (Australia). **Paddling a balanced canoe: Voice and listening in advancing women's rights in the Pacific Islands.** Email:
14lindaaustin@gmail.com

As the international development community formulates a new set of development goals in the post-2015 era, issues of women's equality and empowerment are rising to the top of the agenda. In the South Pacific islands, women are found in disproportionate numbers among the poorest and most marginalized of populations. If the Pacific island countries are serious about achieving "sustainable" development, these women must be brought aboard the canoe, as it is said in the Pacific parlance, to paddle alongside their men in a balanced boat. This paper puts into conversation various notions derived from political democratic theory that are now absent from discussions around women's empowerment. I will argue that the missing element is not so much providing more channels for women's voice in decision-making around issues that affect their lives but instead addressing the lack of responsive listening among male policy-makers and power-holders. Discussions will be illustrated by the activities of one Pacific women's organization, femLINKPACIFIC, which uses community radio to capture the voices of poor rural women in the Fiji Islands.

This paper evolves research undertaken in the course of my doctoral studies to engage Pacific field data with emerging international research. My field research adopted a talanoa methodology, which employs various culturally appropriate qualitative instruments with an emphasis on inter-personal interactions. Representatives from civil society, development agencies and government ministries were surveyed.

For the past 40 years, stakeholder participation has been a popular approach within development circles. In the Pacific island context, many civil society organizations (CSOs) and their international partners have focused on enhancing women's participation in decision-making at all levels of society. One danger of this approach is that local CSOs can be co-opted by the allure of donor funding, thus they adopt Western development targets and approaches that might not necessarily benefit grassroots communities. Pacific island women who "speak up" for their rights face real, and sometimes deadly, backlash by breaching culturally defined gender roles and behaviours. The Pacific islands region has the world's highly rates of violence against women and some Pacific island countries refuse to ratify the United Nations' Convention on Elimination of Discrimination Against Women (CEDAW) and similar conventions on cultural grounds. Thus, Western normative understanding about the importance of political voice within democratic governance models sits uneasily with Pacific cultural sensibilities, such as the culture of silence. Many Pacific governments view advocacy CSOs with suspicion, especially when Western notions of women's rights are seen to threaten indigenous culture, conservative interpretations of religious scripture, and powerful elites.

The women's rights movement has made no real progress in the Pacific islands in the past 20 years; in some countries, the situation is regressing. This paper argues that a change of focus is needed: a shift from emphasis on women's voice to one that addresses responsive political listening. As the case study demonstrates, providing more channels for women's voice, such as through a network of community radio stations, avoids asking the question "who is listening?" How does one begin to engender responsive political listening in the Pacific context within its multiple layers of patriarchy?



D-3-3 Leijssen, Channa van & Tsai, Huei-Min (Leiden University, Netherlands;
National Taiwan Normal University, Taiwan). **Youth Island visions: Future
dreams versus reality voiced by indigenous youngsters on Lanyu.** Email:
channavanleijssen@live.nl

Lanyu (Orchid Island, or Ponso no Tau 'island of the people' in local language) is a 45 km² volcanic island off the southeast coast of Taiwan Island and separated from the Batanes of the Philippines by the Bashi Channel of the Luzon Strait. The island is home to the Tau (or, Yami, Tao), an ethnic minority group who migrated to the island from the Batan Archipelago about 800 years ago. This research focuses on the Tau youth perspectives on the development of their island. It includes their vision on tourism, the balance between 'modernity versus traditions', economic development and politics. Based on, among others, a project on the high school, it became clear that all the Lanyu youngsters want to preserve the traditions and the 'simple' lifestyle, whereas on the other hand, reality shows completely different developments. The local language and other cultural aspects are slowly disappearing, ever more Taiwanese take over the island by renting the aboriginal land and traditional values – such as sharing the profits, the use of commons and environmental sustainability – are replaced by individualized and profit based economic systems.

Fieldwork for this research was conducted during the first three months of 2014, and a mix of research methods have been used. This approach comprised a project on the senior high school where students of two classes made assignments (worksheets) on five different topics: the future of 1) Lanyu in general; 2) the economy; 3) the traditions; 4) the education system; 5) the local politics. The classes taught within this project, mainly consisted of group discussions and conversations in which the students explained their views.

With taking scientific discourses about indigenous tourism, commodification of culture and power struggles due to islandness, in mind, this paper explains the difference between the Tau dreams and the reality among youngsters. It also tries to find reasons for the current developments by looking at local power structures, cultural aspects and the relationship to Taiwan and it makes suggestions for the path to take.



- D-3-4 Holmes-Henderson, Arlene. (University of Glasgow, UK). **Heritage language stabilization and revitalization: what can Scotland learn from Hawaii?** Email: magistrah@gmail.com; arlenehh@hawaii.edu

Language is a valuable vehicle for indigenous knowledge. Despite significant investment by the Scottish government, Scots Gaelic is a language in decline. There is strong support for the Gaelic language and its attendant culture among Scottish people but there is little impetus for non-speakers to enrol in language classes. The Scottish government has implemented a number of language stabilization initiatives aimed at all sectors of society with very disappointing results. In particular, the ambitious program of Gaelic immersion schooling has failed to achieve its enrolment and impact targets. In contrast, the Hawaiian language stabilization and revitalization program has been highly successful and the number of Hawaiian language speakers has grown consistently over the last thirty years, despite little support from State or Federal government. The author conducted qualitative research in Hawaii which involved visiting immersion schools (pre-school, kindergarten, elementary and high schools), interviewing students and their parents, collaborating with academics and educators at the University of Hawaii at Hilo and at Manoa, working with officials and policymakers at the Hawaii State Department of Education, the Hawaiian language curriculum centre and the Office of Hawaiian Affairs. This paper presents the author's recommendations to policy makers and educators in relation to preserving heritage language education through youth educational initiatives in Scotland, Hawaii and beyond.



D-4 Community communication and management

- D-4-1 Lewis-Ambrose, Dana, Hodge, Derry & Dawson, Karl (H. Lavity Stoutt Community College, Tortola, British Virgin Islands). **Financing within Small Island Community Colleges: Evaluating a Programme and Training Development Fund as a viable Alternative Model.** Email: dlewis@hlscc.edu.vg

The purpose of this paper is to evaluate a Programme and Training Development Fund as a viable Alternative Model for funding workforce training programmes at the H. Lavity Stoutt Community College within the Virgin Islands. It is generally felt that community colleges have become instrumental in the human resource development of small islands and territories. Overtime, these colleges have become more financially restricted and this in turn has affected their effectiveness and efficiencies in meeting the needs of small island communities. This oxymoron of a situation has placed additional burdens on colleges to seek alternative financing and fundraising opportunities to assist with the fulfillment of their expected mandate from the society. The H. Lavity Stoutt Community College (HLSCC) is no differently placed, as the small open economy of the Virgin Islands becomes more strained through internal and external shocks that limit cash flows from one segment of the economy to the other. Despite these realities, HLSCC is pressing forward by expressing its interest in working alongside both private and public organisations to find more economical ways of achieving its goals and addressing the concerns of the business community. HLSCC's 2013 Needs Assessment Survey for professional development conducted by the Centre of Professional Development and Community Education of HLSCC revealed numerous findings about our prospective clientele, but most importantly specified that the course offerings that are made available to the public must be economically priced. With this in mind, the Programme and Training Development Fund can be considered as an alternative initiative in support of professional development and community education offerings that will enhance job performance and enrich the Virgin Islands' society. It is suggested that such a fund be administered by HLSCC to develop and deliver training, career enhancement, personal enrichment, and continuing education courses, programmes and services to address the new, existing and changing needs of employers within the public and private sectors, as well as individual clients within the BVI community. The model proposes that contributions be made on an annual basis by both private and public sector organisations in the form of grants to the College. These grants will in turn, allow the employees or any other interest group of the grant funding organisations to access training opportunities at the College at significantly reduced costs. The proposed fund would be established as an agreement between HLSCC and private and public organisations (referred to as Partners) for this initiative to work. The agreement would require organisations to make annual contributions for a specified period, after which their commitments to the agreement could be renewed at the partners' discretion. It can be concluded that such an initiative would be in support of the College promoting individual growth, economic, social, and cultural development within the Virgin Islands. More importantly, the direct benefits of this alternative model being implemented are that the College would meet its operational costs, and its clients would receive the requisite training and support for career enhancement and personal enrichment at a more economical price. The mixed research method was used for this study.



D-4-2 Kanayama, Tomoko (Institute of Advanced Media Arts and Sciences, Japan).

Community Radio as Cultural Function for the Amami Islands of Japan. Email:

kanatomo@iamas.ac.jp

The number of community radio stations has increased nationwide in Japan, and currently reached 280 stations. This also has happened in southwest islands of Japan. The Amami islands, which consists of five islands, is one of those that each island eagers to have own community radio station. In 2004, Amami FM, the first community radio station, was opened in Amamiohshima, the biggest island of the islands, and three new radio stations have signed off the air in the island since then. Other plans to open radio broadcasting also have been preparing in other two islands of the Amami islands, Tokunoshima and Okinoerabu. This article explores the meanings of community radio station for small islands.

This research conducts in-depth interviews with administrators, staffs of four radio stations in Amamioshima and related personals creating community radio stations in Tokunoshima and Okinoerabujima. It reveals that the community radio stations have played a role to see something new to awake their own cultural identity for surrounding areas, to make it visible to the audience, and to strengthen it. Since each island consists of several villages and towns, they strongly eager to have their own radio station for own village/town, against that one radio station would cover the whole island. It is important to have their own culture in particular by embracing artistic expressions through music, dance, poetry, story telling, and cultural events, which is different from neighbor town/village even in the same island. At the same time, different identities seem to be aggregated as a whole, being observed when emphasizing cultural identity of the island compared to neighbor islands of the islands. Finally, through networking with radio stations located in the islands, they desire to realize a kind of cultural consolidation in contrast to other cultural sphere islands, such as the Okinawa islands and the main islands of Japan.

As examined on the meaning of community radio for small islands, this research indicates that each community radio station might be a symbol of own cultural identity and play cultural function. Even now, the aggregation of these symbols is important for the Amami islands, which have maintained their own culture preserved for the long period of time when being occupied and oppressed by the mainland of Japan.



D-4-3 Kang, Youngpil, Lee, Hanyoung, Kim, Daejoon & Kim, Jihee (Jeju National University, Korea). **Role of Jeju Documentary films as Communicating means around MPAs.** Email: ko.changhoon@gmail.com

This article is talking about the function of Jeju Documentaries which explain real life as communicating means around MPAs. Women divers work both on land and at sea. Once they dive, they usually hold their breath from 30 seconds to 2 minutes. On average, they spend 15 days a month diving. They even dive during the winter, and when they are pregnant. They start learning to swim at the age of 7 or 8. When they turn 10 years old, they begin to dive. In their mid-teens, they are able to dive by themselves. In their 40s, their days consist of diving to the sea bed. Usually, they dive until their late 60s. There are a few divers still working into their 80s. The women divers are classified into four groups: hagin (beginner), junggun (intermediate) and sanggun (master). The best of the best are called daesanggun. They expand their territory to Japan, China and even Russia: From the late 19th century, Jeju women divers have worked the Korean peninsula, Japan, China and even in the Russian sea. They hold annual rites to wish for a good harvest. Jeju Chilmeoridang Younddeung Gut, the 71th Jeju Intangible Heritage, was designated a World Intangible Heritage in 2009. The primary goal of diving was to make a huge profit. They could not only support their families, but contribute to the local economy.

Symbol of women divers: Wet suits – designed to minimize water resistance and maximize job efficiency; rowing songs – sung by women divers while paddling to the point where they would dive; sumbitori – divers make this hard sound once surfacing and releasing; it sounds like a whistle. That's the reason why we investigate the history, scientific importance, present condition and unique cultural value of Jeju Haenyeo. Documentaries such as "Heritage of Mother" and "Jeju Women Divers" will be screened.



D-4-4 Roy, Saswati (Visva Bharati Central University, Santiniketan, West Bengal, India). **Extinction of a Pristine Livelihood in Response to Development: A Reciprocation from the Onge Community of Little Andaman Island, India.**

Email: saswatiroy2008@yahoo.co.in

India is patterned with innumerable tribal communities all over its diverse landmass where they have been sustaining through ages with every odd. It was since the time of M.V. Portman who explored the Little Andaman Island and got hindrances from the aboriginal Onge which then onwards became the inauguration for the outer world to try the island as a resource ground (Mathur, 1968). Since the time of British invasion till the independence of India there had been invasion onto this island for economic gains (Cooper, 2002). After independence of East Pakistan (now Bangladesh) the huge influx of refugees being thrust onto this island in the name of rehabilitation showed a promising negative effect on their community. With the advent of encroachment within their domain, the Onge's societal structure got a tremor. A group of scientists sensed the vulnerability of this community and thought of planning social safeguards.

The present author after a precise survey on the present island, compiling the primary with the secondary data and relating with the past literatures have come through several disappointing observations. Development strategies in the tag of globalisation are unknowingly portraying a label of monotony by ignoring the latent values within the Onge's diversified livelihood. This paper is intended with crucial objectives. Firstly, to outline the extinction level of the pristine livelihood i.e. hunting and gathering, practised by the Onge community. Secondly, to find out the effect of the implemented policies on the socio-cultural domain of the Onge tribal community. Thirdly, to prognosticate the socio-cultural fate of this community in response to the induced developmental changes.

The Onge as a part of their cultural appreciation used to boast a man who could carve out the finest 'Ookoo', a bucket made from a tree trunk. This is destroyed with the introduction of plastic buckets (Mukhopadhyay, 1999). The immense knowledge about the forest made them to get the accurate skill to practise the age old hunting and gathering livelihood as well as construct temporary huts with the available resources. This was a significant part of their work culture, which got wiped off with the rationing system and the Onge Co-operative society (Basu, 1990). Even due to the rehabilitation programme which attempted to settle the refugees from the mainland India into this island made to curtail the hunting area of this community (Bose, 1994). The plans squeezed the communities into a particular point, the Dugong Creek, whereas initially they were spread in three different zones of this island (Mann, 1978). The main problem arising right now is the disharmony amongst the clan as the spirits they have been worshipping through ages are left behind in the locality they were persuaded to leave.

From this very paper the author is ardent enough to display the fallacies as been undertaken in the name of development and the imposed changes infused within a pristine culture. The author would also like to intimate her humane suggestions to the planning systems to think before leaping into the issues of this sensitive tribal community.



E sessions: New Winds for Islands - Island technology and innovation

E-1 Small island technological fitness

E-1-1 Kakazu, Hiroshi (University of the Ryukyus, Japan). **Okinawa's Green**

Technologies and Sustainable Development. Email:

makishi.kakazu@gmail.com; nagalongisland@hotmail.co.jp

Okinawa, Japan's only small island prefecture and the birthplace of nissology (the study of islands), shares all the characteristics of small, remote islands. Okinawa hosted the third (2003), fourth (2006) and the sixth (2002) Pacific Leaders Meetings (PALM) with 14 South Pacific countries, Australia and New Zealand, and two regions (Cook Islands and Niue). PALM adopted "The Okinawa Initiative on Regional Development Strategies for a More Prosperous and Safer Pacific." That initiative highlighted the important role of Okinawa in spearheading and coordinating development and educational relationships among the Pacific islands. Okinawa's situation and experience could be very useful in terms of developing appropriate models, including technology transfer developed and applied in Okinawa for sustainable island development.

Okinawa has developed various subtropical and island-based green technologies and innovations which support Okinawa's 21st Century Plan. Some important ones are listed below. Technologies and innovations such as the re-use and recycling of waste glass bottles, waste vegetable oil, fruit fly eradication, clean energy, underground dams, utilization of deep-sea water, including OTEC, resource-based health foods, eco-tourism, and networking island communities. Any or all of which may be applied to the Pacific island countries with appropriate modifications.

Waste bottle recycling technology, which is useful for producing construction materials, purification of water and greening, has been transferred to a Taiwan company (豐益元) this year. Production of diesel oil from used cooking oil is also useful technology for island regions. A plant of so-called Eco-Diesel Fuel (EDF) is constructed with relatively inexpensive cost. The Republic of Marshall Islands is planning to convert its abundant coconut oil to ethanol by using this technology. Oceanic deep water is one of the advantageous resources for island regions. The largest deep-sea water facility in Japan is located in Okinawa's Kumejima Island. The island has been producing various products using the facility, including sea vegetable, prawn giant clam, puffer (fugu) cosmetic products and others. The island is experimenting this year to generate electricity (OTEC). Okinawa's traditional and declining sugarcane has been revalued in recent years because of its high-valued alternative use (see Dr. Uehara's paper).



E-1-2 Uehara, Hideki (Meisei University). **Seizing Opportunities and Challenges for Sustainable Small Island Economies: A Case of Development and Innovation in Okinawa.** Email: makishi.kakazu@gmail.com

The rise of concerns over the recent TPP negotiations on tariff reduction raised general interest in reconsideration of existing agricultural policy related-issues in Japan. Government subsidy programs on rice, dairy products and sugar industries are the major targeted areas. The sugar related industries have long been subsidized heavily, yet they are the most important agriculture and manufacturing activities in the island economies of Okinawan archipelago. Aside from a long process of TPP negotiations, we argue that soon or later, global market forces will eventually penetrate the domestic market and sugar based manufacturing activities will lose the bases for creating jobs and income for the islanders under the condition that a new arising opportunity is neglected.

Although abundant local resources and opportunities that could have been utilized for sustainable developments have been discussed and pointed out by many experts, most of these islands could not capture the opportunities and they have long been dependent on the external factors such as central government funds. This trend of dependency created serious problems and issues in terms of the condition of local economies. One such example is inward-looking oriented mind and trend that could not meet the challenges against external forces such as outcomes of TPP negotiations. Such external impacts, however, often supply a positive effect and new opportunities to the stakeholders if they are willing to take a risk.

In this report, therefore, I will present the current status of technological developments as well as identifying the opportunities for the future developments of resource based industry that can produce strong linkages among bio-based industries in Okinawa in terms of the concept of “globalization and localization” supplied by Kakazu (2013).



E-1-3 Matsumura, Yuko. (Osaka University, Japan). **An overall research about energy development in remote islands in Japan: Case studies in islands without interconnection to mainland.** Email: ymatsumura@hus.osaka-u.ac.jp

The Fukushima nuclear power plant accidents caused by the Great East Japan Earthquake, which occurred on March 11, 2011, clearly implied that the massive and concentrated energy systems might cause unprecedented damage. This event called into question Japan's previous energy strategy, and thus both on-site energy systems based in communities and the development of new energy technologies gained attention.

This research aimed to elucidate the problems and the prospects of constructing new energy systems in communities in Japan, based on remote islands which are expected to have many options in terms of the uptake and dissemination of new energy technologies, by comparing and contrasting formulated acts and policies with real activities and efforts in communities.

Interviews were conducted with office workers at the local government, companies producing or managing new energy resources, and workers in primary industries at six islands (Iki Island, Tsushima Island, Sado Island, Yakushima, Miyako Island, Amami Ohshima) without an electricity interconnection to the mainland in order to utilize full feature of closed system of the islands and diversity of the region as study area. In addition to these inquiries, this paper compared the results using a qualitative method based on fundamental concepts in environmental sociology to analyze the situation.

The results showed that geological characteristics, population, industry, administrative divisions were affected to current energy system and large-scale Solar Power plant and Bio Diesel Fuels are apt to be installed. Another result is the current development of each energy system in these islands and the problems associated with energy development and the relationships between the natural environment and local communities.

Based on the results, this paper compared the results using a qualitative method based on fundamental concepts, "Appropriate Technology" "Environmental Icon" and "The Theory of Social Link" (Kitoh 1996), in environmental sociology to analyze the situation. In communities problems of out-migration and aging society are clear, for the construction of a new energy system through the introduction of new energy technologies, there is a need to continue to consider balancing livelihood of people living there and nature environment as opposed to overly respect virgin nature.



- E-1-4 Wang, Ying-Wei, Fang, Shyang-Chyuan, Han, Tzeu-Chen, Kang, Huan-Chen & Lu, Cheng-Hao (National Penghu University, Taiwan). **A hour-based electric-scooter rental model for island residents and tourists: The test case of NPUST.** Email: ywwang@gms.npu.edu.tw; chyuanf2012@gmail.com; tchan@gms.npu.edu.tw; connie@gms.npu.edu.tw; luch@gms.npu.edu.tw

Penghu, an archipelago in the Taiwan Strait with a beautiful landscape and rich ocean resources, is an important area of international/national island tourism and recreation. The total land area, including Magong and offshore islands, is about 126 km². The longest distance among scenic spots/historical sites is no more than 40 kilometers, and the average trip-distance is less than 10 kilometers. There are thus many car/motorcycle rental companies/stores located in the Magong area. Recently, an electric-scooter rental store was launched for residents and tourists due to a local government policy to reduce transport-related emissions. The operation of an electric-scooter rental service is similar to that for regular motorcycles, with the rental time usually being for one or one and a half days, and the price based on the number of days. In practice, however, many users might only need a scooter for one or two hours, for purposes such as grocery shopping. Hour-based scooter rental services should thus be explored to increase the turn-over rate of this traffic mode, which could both decrease congestion and increase the owners' revenues.

The study pre-tested the practical operations of an hour-based electric-scooter rental service for students living in a dormitory at National Penghu University. The test provided ten scooters and five back-up batteries for the scooter rental operation. Each scooter was equipped with a GPS receiver device to record the routing coordinates at intervals of 5-10 seconds. The trip data was obtained, and then GIS overlay analysis used to calculate the time, destination, route, distance of each trip on a digital map, and thus the spatial behaviors of the electric-scooters were identified. In this way certain details that are important to the operations of an hour-based scooter rental service can be obtained, and students' travel patterns, purposes, times, distances, and demand can be clarified. The research results can serve as useful references for car/motorcycle rental companies or stores on Penghu, as they plan their future rental operations.



E-2 Technical Innovations

E-2-1 Ku, Fu-Neng (National Penghu University of Science and Technology, Taiwan).

Model of Gravity blades. Email: kfn@npu.edu.tw

A wind turbine designed to make wind turbine is converted into gravity, especially in the absence of wind power under gravity can also generating wind turbine blades; gravity which holds the blade becomes nonlinear dynamic behavior of the moment of inertia of the implementation of the wind vane , Ke Yi, such as amplitude and frequency of the local wind field, through the control methods to meet local variable moment of inertia of the completion of the wind farm wind turbine inverter design. Through numerical analysis, including: the trajectory, period, quasi-periodic, Chaos, Bifurcation, frequency, Power Spectrum, simulation Lyapunov Exponents and other presents. Heoretical predictions on the order of the parameters to be obtained from a collection of numerical solution validation, quite good agreement between the two. Practical application of their devices, gravity Energy Agency's output energy and solar power generation system, which can be set as wind, solar, kinetic energy and other power generation technologies in one, while the use of efficient, low wind power generation device, designed and developed with flywheel energy storage power generation function stampede kinetic energy generating device type; maximum power point tracking control mechanism is proposed based on multi-source hybrid power control strategies; research and design of multi-source hybrid power controller. Relevant theoretical results show that the system has a variety of energy complementary characteristics, highly practical.



- E-2-2 Liao, Yi-Hung, Hsu, Chia-Chuan & Jhu, Jia-Yi (National Penghu University of Science and Technology, Taiwan). **Development and Analysis of a Contactless Electrical Energy Transmission System for Island Power.** Email: yhlmliao@gmail.com

In this paper, a novel bridge-less and contact-less energy transmission system is proposed for island power. The concepts of the coreless planar transformer and the magnetic dipole moment are utilized to transmit electrical energy. The input ac current of the proposed contactless converter has power factor correction. The primary-side switches can achieve zero-voltage switching and the secondary-side diodes can achieve zero-current transition. Consequently, the efficiency of proposed contactless circuit can be increased. In addition, the circuit operation and the energy transmission principles of the proposed contactless system are explained clearly. It is worth mentioning that the proposed contactless electrical energy transmission system can increase the transmission distance adopting the suitable voltage multiplier circuit. Finally, a prototype system is constructed. Simulation and experimental results verify the validity of the proposed contactless electrical energy transmission system.



E-2-3 Lin, Wun-Hao, Wu, Hao-Ming, Wu, Wun-Chin & Wu, Hao-Chuan (National Penghu University of Science and Technology, Taiwan). **Problems and Countermeasures of Small Wind Turbine Systems.** Email: wuhch@gms.npu.edu.tw

In recent years, the government encouraged the development of green energy, and wind power is one of the main one. Many small domestic wind turbine manufacturers have invested in research and development ranks, after years of effort, and did not get the desired results. Most people think of small wind turbine system is very simple, technical threshold should not be high, as long as there are blades, generators and controllers can be composed of a wind turbine system. In fact, apart from a small wind turbine systems have developed aerodynamics, mechanical construction and power electronics knowledge and technology, the need to complete the planning and match them to design a complete set of wind turbines. In fact, the National Penghu University of Science and Technology Windmill Park tested number of commercialize small wind machines confirmed that the damage occurs most often small-scale wind turbine blade is subjected to strong winds blowing off at the blade root fixing wear, generator coil burnt , electrical controls burned, wind turbine poor weather resistance and severe corrosion, resonant led to the collapse of the tower breaking during operation wind turbine and wind machine deflection connecting rod because long tail swing cause wear and so on. The results show that small wind turbines have not been rigorous design and planning, the majority of small wind turbines are unable to adapt to the actual wind conditions in Penghu. In this paper, the performance of small wind turbine tested at the National Penghu University of Science and Technology Windmill Park will be analyzed and make recommendations with reinforcement amendment.



E-2-4 Tan, Paul Juinn Bing, Hsu, Ming-Tai & Hsu, Ming-Hung (National Penghu University of Science and Technology, Taiwan). **Fault diagnosis of wind power generation systems.** Email: hsu.mh@msa.hinet.net

A wind turbine must consider various load condition on machine during operation. The on-line monitoring system plays important role to predict the condition and fault detection of wind turbine for maintenance. Knowing the condition of wind turbine and how well it is performing is a vital part of the strategy for optimizing safety, minimizing environmental impact, optimizing power plant availability and reliability, and minimizing maintenance costs. The condition monitoring system and fault detection system are therefore established for wind turbine in the research. The diagnosis system subject to different kind of failure mode is also developed using signal analysis. The on-line monitoring system will be proved to be a beneficial investment for offshore wind power plant to reduce maintenance costs and less downtime and increase overall machine reliability. Therefore, using the collection, calculus, and logic control program of the operation information as the basis data for automated operations and management operations. However, the existed monitoring capability is still unable to provide fault diagnosis of fault operation detection for the main equipment of power plants. The purposes of this study is to use physical quantity detection methodologies including vibration, electricity, and partial discharge detection, nondestructive testing and non-destructive evaluation, while applying public policy research methods such as Interactive Management, for full consideration of the media industry, government and other public interest groups of five types for integration testing and maintenance of the wind turbines that are now in the maintenance of weight for maximum performance. Taiwan's petrochemical industry and nuclear facilities, fire and natural gas power plants have been operating for many years, however, due to public protest, maintenance is still unheard of for adverse events. Although the government's carbon reduction policy has been implemented for many years, the development of alternative energy sources, such as the use of wind is not in the clear. Onshore and offshore wind turbine power plants have expanded exponentially. Planning and construction, occasion, integration testing technology of wind turbines and the development of norms and standards for inspecting Taiwan wind turbines is imperative.



E-3 Transport and energy

- E-3-1 Li, Sui-Ling, Hung, Fu-Jung Chris & Lin, Jing-Zhen (National Penghu University of Science and Technology, Taiwan). **Measuring and Evaluating Route Selections of Off-shore Island Tourism Bus**. Email: suiling@npu.edu.tw; chris_hung@npu.edu.tw; jclin@npu.edu.tw

The routes planning for tourism in Penghu had not yet developed and explored, which not only influence the costs and benefits of green transportation, but also local development and tourism resources. This work invoked the indexes of representative, such as the measurement the index weight of tourism service quality and quantity with different travel tourists, transportation and tourism authorities and local tourism groups. The objectives of route planning of tourism bus not only promote culture and economic activities, but also local and regional industry development and tourism environment recreation. Therefore, this paper considers the procedure of decision making above the mentioned issues and fields, also propose the evaluation framework of tourism bus routes to measure the five groups, such local government(tourism authority and transportation authority), tourists, local industries, and residents of influence fairness, be representative, feasible, and effective. By brain storming of the planning group can do a scenario analysis to evaluate the construction framework scheme for the decision making system, and define its' objectives, index attributes and criteria. This study considers the planning objectives of tourism routes in the policy, mobility, tourism, finance, economy, environment and society fields to construct a hierarchy system of evaluated framework. The seven objectives of this evaluated tourism route framework, which are enhancing traffic accessibility and mobility, improving local development, saving routes maintained costs, adding operation income, decreasing negative environmental influences, and executing plans easily. This study also applies Analysis Hierarchy Process (AHP) method to measure the criteria weight of each decision making group and weighted value must be passed by a consistent test. By means of comparing the consensus and agreement of tourism routes selections to different groups improves planning reference and development of tourism routes in the future.



- E-3-2 Wang, Yu-Jie & Han, Tzeu-Chen (National Penghu University of Science and Technology, Taiwan). **Non-radial DEA measure for sustainability evaluation of small islands: Considering on inefficiency of undesirable outputs for electric vehicle.** Email: knight@gms.npu.edu.tw; tchan@gms.npu.edu.tw

Penghu is a locality composed of numerous small islands. Nowadays, local government hardly develops Penghu to be low carbon and tourism as well as leisure islands. Low carbon and tourism as well as leisure are two conflicting issues because nature resources in decreasing carbon emissions are limited whereas human desires in sharing tourism as well as leisure are infinite. Based on the two varied issues, sustainability on Penghu has been recognized as a critical item, especially for the four small islands of Chimei, Wangan, Hujing and Gibe. Tourism by electric vehicle may prove to be the best choice of sustainable transport when considering the two conflicting issues raised above. However, one of important challenges in sustainability evaluation is how to measure the efficiency of both desirable and undesirable outputs for electric vehicles. In 2013, Hwang et al. had developed a radial Data Envelopment Analysis (DEA) model to consider simultaneous increase of desire outputs and decrease of undesirable outputs with a focus on identifying inefficiency for automobile industry. Commonly, non-radial DEA can reflect all efficiency of a decision-making unit (DMU) for separate inputs and outputs, but radial DEA does not. Based on the concepts above, we will develop a non-radial DEA model for efficiency measure of electric vehicle in this paper. Practically, the proposed model further provides inefficiency measure on undesirable outputs to help identify the eco-efficient way for improving the performance of electric vehicle while minimizing its undesirable outputs, such as carbon emissions.



- E-3-3 Wu, Wun-Chin, Liao, Yi-Hung & Shya, Ming-Horng (National Penghu University of Science and Technology, Taiwan). **Effect of National Penghu University of Science and Technology Windmill Park on the Domestic Small Wind Turbine Development.** Email: wcwu@gms.npu.edu.tw

In recent years, the depletion of fossil fuels and the rise of environmental awareness and ecological, thereby, promote the development and application of green energy. Because of summer hot and winter northeast monsoon strong, Penghu Islands is very suitable for the development of solar and wind power, among which is the wind power generation, because Penghu wind farm is one of the best in the world. Recently, the booming development of small wind turbines, the need to make some specifications and requirements for wind turbine performance and security is rise. In 2006, National Penghu University of Science and Technology built a small wind turbine test site (Windmill Park). The main purposes are the teacher's research and teaching, student internships as well as the industry-university cooperation. Windmill Park has been built signal collection, analysis, storage equipment, 20 sets of fans data can be monitored at the same time. The fan performance (power, voltage, current) can be measured, and the manufacturers can enter the platform through the Internet, check fan performance status. The questions arising from fans, we also provide the solution. Since the complete measuring equipment, perfect management and good performance, the Windmill Park is well recognized. Currently, more than 20 fan manufacturers have cooperated with school and 15 related projects were performed. Another performance by extending the windmill park has wind power exhibition room, solar photovoltaic show room, and an international small and medium sized wind turbine certification course, there are more than 2,000 people visit each year.



F sessions: Taiwan Perspectives – Island futures and planning (in Chinese)

台灣觀點：島嶼未來的展望與規劃（中文發表）

F-1 Planning for Sustainability

F-1-1 Daniel TL Hung (Economic Affairs Department, Penghu County Government),
Sustainable Development Planning of Penghu Island. (洪棟霖，澎湖島嶼永續發展規劃，澎湖縣政府建設處處長)

Penghu County is archipelago of 90 islands and islets, located in the middle of Taiwan Strait. For its great location, Penghu is the transit point for trades between Southeast Asia and Northeast Asia. Penghu population is about 101,000 in 2014. Penghu County Government is makes efforts to promote tourism in recent years, as such, Penghu attracted 950,000 visitors in 2013 from 540,000 visitors in 2005. Penghu County government has made a regional planning as the guidance for spatial planning, environment sensitive areas management, marine development, abandoned land and military bases revitalization. From those comprehensive considerations of natural, cultural, economic, and social aspects, this will make Penghu change into an international island.

Penghu has significant wind resources and is the best choice for developing wind power industry. To leverage its rich resources, Penghu County Government has already set up “Penghu Wind Power Company” in July 2014 as an affiliate to build wind power plants in Penghu. The electricity generated from those wind power plants is expected be sufficient for Penghu. After Taiwan-Penghu submarine power cable system is finished, the net surplus wind power will be transmitted to Taiwan and sold to Taiwan Power Company. The constructions of wind power plants not only improve the clean electricity supply in Penghu, but also reduce carbon emission and generate investment profit.

To develop cruise tourism, Penghu County Government cooperates with Royal Caribbean Cruises Ltd. and Taiwan International Ports Corporation Ltd. to develop international cruise port in Penghu. We expect it will enhance competitiveness of Penghu and attract international cruise visitors. In the near future, Penghu will become a leading hub for cruise industry in Asia, serving as a major connection point within Keelung, Japan, Kaohsiung, Hong Kong, and the region.



- F-1-2 Lung-Cheng Chang & Robert Y.S. Chen (Director of Penghu National Scenic Area Administration, Tourism Bureau, MOTC; Associate Professor, Department of Geography, National Kaohsiung Normal University), The Analysis of Development Strategies of 'Alternative Tourism' in Penghu Archipelago. (張隆城、陳永森，澎湖群島「替代觀光」發展策略分析，交通部觀光局澎湖國家風景區管理處處長、國立高雄師範大學地理學系)

The Penghu Archipelago is the first developed area in Taiwan, which has abundant human and coast landscapes. Therefore it is a great attraction for tourists. And the atmosphere of retreating and leisure is different from that of Taiwan and it makes Penghu an important tourist attraction in Taiwan.

The tourists visiting Penghu are increasing gradually although the exiting constrains, such as natural environment, resources tourist carrying capacity and environmental impact just like the other islands. The tourists were 420,000 in 2000 and 700,000 in 2014. The average annual tourist increasing rate is about 15% in the next decade. Therefore the increasing tourists will impose more stress on the environment. The tourism in Penghu is quite inflexible now and the high season is from April to September. The tourism industry will have great challenge and be impacted in Penghu if there are no new development strategies in the coming future.

In this study, the sustainable tourism is introduced by using the analysis of tourism supply, tourist behavior, low-carbon tourism, public-private partnership, forum, and interview and filed work. The development strategies of 'Alternative Tourism' in Penghu Archipelago will be proposed for the future.



- F-1-3 Jung-Fu Huang, Chia-Fa Li & Pao-Jen Chang (Kinmen County Government),
Ecological and Conservation of The Horseshoe Crab in Kinmen. (黃榮富、
李佳發、張寶仁，三棘蟹在金門的生態與保育，國立高雄海洋科技大學水
產養殖系、金門縣政府建設處、金門縣水產試驗所)

Kinmen is located at mouth of Fujian Province,s Kowloon River. It is an island composed of granite, and since it site where the river meets the sea, nutrients abound, making it an ideal place for marine life to thrive. The vast tides and wetlands make Kinmen,s shores a major attraction, breeding a tidal ecosystem and enabling one of the world,s most precious living fossils, the *Tachypleus tridentatus*, more commonly known as the horseshoe crab, to exist for 400 million years.

Long ago, the Penghu area of Taiwan's western coast was also a hotbed for horseshoe crabs, but due to mankind's continued construction of ports, environmental pollution and excessive fishing, the horseshoes no longer thrive there, making them a rare sight even in the Penghu area. It is only at Kinmen's tidal zone, where access controls as a battle zone were imposed by the government, did the horseshoe survive and thrive, and thus making it the best location for horseshoe crab sightings.

In recent years, as a result of environmental degradation and over-trapping by humans, the numbers of horseshoe crabs are in decline, so much so, that they are near extinction. Having existed for 400 million years, the horseshoe has demonstrated its tenacious vitality, but it is now threatened and the slightest change in environment can lead to its disappearance from this would. As a result, in December 1999, the Kinmen County government announced their decision to make the tidal zone a conservation area. In cooperation with the Fisheries Research Institute and the Academia Sinica Research Institute of Zoology, an effort was launched to revive this declining species through habitat protection, artificial breeding methods, mass cultivation, as well as involvement of the local population in release programs and educating the masses through active participation in conservation.



F-1-4 Alex Ya-Ning Yen (China University of Technology), **The preparation for World Heritage nomination in Kinmen.** (閻亞寧，金門申請登錄世界遺產的整備工作，中國科技大學建築系)

Kinmen started its preparation for World Heritage nomination since 2003 and set a formal implementation structure from 2009. This article described the preparation work during 2009-2013. Based on the proceeding of the assessment of OUV on Kinmen and under a systemic framework to integrate different participants are the Key issues for this project.

The experts of United Nations World Heritage visited Kinmen in early October, 2013. They were deeply impressed by Kinmen's abundant cultural resources and what had been done for the heritage nomination issue. Besides, they also suggested that "Peace" could be the main topic for our job. The remains from different eras can be used to explain the outstanding universal value of Kinmen under the concept of "Serial World Heritage Properties". Thus, the value of Kinmen lies in how people continue their pursuit of peace by the integration of traditional culture under different war threats during 1600 years.

Kinmen becomes the center of Southern Fujian cultural inheritance due to its preservation of traditional settlements and living culture. The South Fujian culture, battlefield history, and the hometown of the overseas Chinese are all major elements of Kinmen's outstanding universal value in the process of application. These elements are demonstrated as tangible cultural heritage and some other related intangible cultural heritage. In the future, the Southern Fujian settlement buildings and military relics will be our main targets to preserve. And the management and maintenance of those heritage sites and resident education will also be the key point to meet the requirement of World Heritage nomination.



F-2 Connections and influences

F-2-1 Hsu-Fu Yang & Cheng-Chi Chung (Dept. of Shipping and Transportation Management, National Taiwan Ocean University), **High Speed Craft Service Market and Its Influence in Taiwan.** (楊許虎、鍾政祺，福建海峽高速客滾航運有限公司臺灣分公司、國立臺灣海洋大學航管系)

“Formosa” has been always famous for its natural scenery to the world since the 18 century. The inhabitants including Penghu Islands were mainly immigrated from China. The majority of people were from Fujian Province, and few of them were from other provinces since the Chinese Civil War had happened in 1949. Currently, owing to the weather condition, inhabitants could not only have more sufficient materials supply but also lack for public transportation for the island hopping in the winter time. Only one airport which is located in Magong; its runway is 3,000 meters in length, 45 meters in width, and apron allows 9 aircrafts to be landed, and either B-757 or A-321 of the biggest aircraft type, which capacity is less about 178 seats. But the frequency is not enough to meet people demands in Penghu. This survey is to advise that high speed craft (HSC) can satisfy traffic demand, and also for the tourism market. The capacity of the HSC named M/V “Hai Xia Hao,” is built by Incat in Tasmania, Au. There are 782 seats allocation, and the limitation of sailing is within 5 meters wave high. This ferry provides only 2-hour duration from Taichung to Penghu within 40 knots per hour, or one hour from Tainan, Taiwan to Penghu Islands. Since it can also load 255 cars on the cargo deck; it means people may easily travel islandwide, go sightseeing and have business connection around Taiwan. Penghu is quite awesome for the tourism activities during summer, especially for the island hop. It also has some wild animals surrounding it. People here also said that they are used to working for 8 months and rest for another 4 because of the bad weather. The HSC can not only provide convenience vehicles to the people, but also assist some physically challenged persons who need be delivered to Taiwan for further medical care. Therefore, what the best transportation is accessible for the people and let them feel more comfortable is the subject of which survey in this paper.



F-2-2 Tzeu-Chen Han, Arthur Sung & Chien-Chang Chou (Department of Shipping

Technology, National Kaohsiung Marine University), **Small Island Logistics**

Connection. (韓子健、周建張，國立澎湖科技大學；國立高雄海洋科技大學)

Recently, small island issue including the small island culture, economy, nature, innovation, challenge is one important topic. In this paper, Analytic Hierarchy Process (AHP) method is conducted for selecting an optimal maritime transportation model for the archipelago logistics connection between Taiwan mainland and Penghu archipelago.



F-2-3 Li-Hui Chang, Cheng-Shih Lin & Tsui-Wen Wang (Department of Tourism Administration, National Quemoy University), **A Study on the Consumer**

Behavior's Characteristics of Tourists in Kinmen: Trend Analysis Orientation.

(張梨慧、林正士、王翠雯，離島觀光旅遊消費行為模式之研究：趨勢研究取向，國立金門大學觀光管理學系)

According to the World Tourism Organization, the number of global tourism will grow to 1.602 billion in 2020. World Tourism Travel Council's assessment report in 2012 indicated that the world tourism had shown a good development trend in 2011 with the economic recovery and growth in 2010. For Kinmen, since the government stopped its "Battle Zone Political Affairs" in 1922, developing tourism had become the government's strategy to prosper local economy. Kinmen government is focus on the policy of being a international leisure and tourism island. The offshore islands in the world were advocated developing tourism as their core value. The feature of offshores' ecotourism and environment will become its culture. Islands development of tourism has also to concern its environment carrying capacity. Thus, island tourism has to plan carefully to avoid overload tourists causing many impacts.

Kinmen government held the research of "visitors to kinmen expenditure, Travel characteristics and satisfactions" every year. The goal of the sampling survey is to understand the purpose of visitors, their activities and their consumption behavior. This study adopt past ten year's database to do the analysis, from the year 91 through 102. The data is analyzed using methods of, descriptive analysis, DH variance stratification and Chi-square analysis. The results will provide authorities references for further policies.

The results of this research show that the collections to travel's information resource, the conclusions reveals that low and middle consumers consult for friends, relatives, colleagues, classmates and neighbors. High consumers consult for print media. Then at attraction of tourism, low consumers regard the natural environment has the most attraction for them. Middle consumers deem the Minnan style architecture is the best lure and high consumers treat the battlefield ambience is the one. When we analyses the sundry intensity of tour perceived, the greatest impression of low consumers is the people's friendship, the worst is the quality of the dining facilities; the greatest perception of middle consumers also is the people's friendship, the worst is the quality of the dining facilities; the greatest sensation of high consumers also is the people's friendship and distinguishing feature of scenic spots, the worst is the quality of the dining facilities; and we congregate all data to organize the consumer's behaviors.

The study proposes a tourism development strategy based on its military installations. It is advised to improve services at the airport and docks, strengthen strategic marketing and ameliorate local hospitality industry.



- F-2-4 Shi Yi Bei (Department of Taiwanese Literature, National Cheng Kung University), **The original culture and natural ecosystems of island's food and species literature.** (石宜蓓, 島嶼食物和物種書寫的在地文化與生態, 國立成功大學台灣文學系)

Being an island around the sea, Taiwan blessed with ample resources. It's very helpful for to do research. But nowadays we always regared the species as feeling and remind. It's seldom to find the species's culture and unique. With the globalization wave, we export goods to different countries. To support the huge export goods we made the farm land into building land. It's a great disservice to our society. And the farmer used chemical solution to prove the yield. But is also caused genetic mutations. The species of our island has been disappearing fast. So it's important to research our island species. Without ample resources how could we live in such a beautiful island. I try to use literature and natural ecosystems to research the important of island culture.



F-3 Environmental education and resource management

- F-3-1 Min-Hwang Liang (Department of Nature Resources and Environment, National Donghua University), **Facilitation and Mentoring for Environmental Education of Islands of Taiwan.** (梁明煌，台灣島嶼的環境教育促進與輔導，東華大學自然資源與環境學系、環境教育中心主任)

Traditionally, the implementation of environmental education (EE) at islands of Taiwan were in charged by the education bureaus of each county, Penghu, Kimmen, Lienchiang, Yilang, and Taitung. It was since the year of 2001, the Office of Environmental Protection, of the Ministry of Education (MOE) started to grant a small amount of budget to every office of sport and health division inside the county's education bureau to form a coordination team by the school principals to draw county school EE plan and deliver their EE tasks. Companying with this local institutionalize system, the MOE also has established a nation-wise e-based EE mentoring team, called the Taiwan Green school Partnership Project Team at Graduate Institute of EE, National Taiwan Normal University on 2001 to provide EE capacity building service. After several years, the MOE started supervise auditing process on the EE performance of every county and found out the quality of islands county were poor. A follow up nation wise evaluation research in 2008 also found the similar results, and suggested an urgent needs of establishing regional EE teams. The MOE finally approved a four regional EE team project on 2010 and has continued this project for four years. Three island counties Penghu, Kimmen, Lienchiang, are now mentored by the north region team, The Taipei Municipal City Teaching College, while other three islands, Turtle Island, Green Island and Orchid Island were mentored by the Eastern region team, the Donghua University. Main tasks for each county include capacity building workshops, auditing and mentoring, inter-counties exchange, and review of annual master plan, 24 hrs EE certification training courses and two national gathering meetings.

It was since the pass of legislation of the Environmental Education Law in 2011, the responsibility of the EE tasks were shifted to each county government. Last year 2013, the central level administrative body of the EE law, the Environmental Protection Administration EPA started to transfer the mode of delivering EE capacity by the USA into Taiwan and modify approach of the Regional Center for Expertise currently adopting by the UNESCO into Taiwan. Since March of the year of 2014, three years grants were gifted to four regional RCE teams for EE to deliver the missions designated by the EPA. Now the Northern RCE is responsible for six counties include Mazu, Middle RCE is responsible for six counties include Kimen and the South RCE is responsible for six counties include Penghu, while Easter Region is responsible for three counties include three islands. EPA's assignments include building regional professional teams, partnerships and diffusion, monitoring and evaluation, capacity building, and technology incorporation, EE RCE platform, website, training workshop, curricula planning, and review world regional EE innovations and promote USA-Taiwan Eco-Campus project. Eastern RCE is assigned to study Oceanic region and responsible for developing capacity building plan for national wise accredited EE facilities and infrastructure. This paper shares author's experiences, strategies and obstacle during the delivery of these two RCE projects at the eastern region of the Taiwan. In addition, it introduces the issue of impact of whale watching business and island trail hiking development at the Turtle Island; the overcrowding tourism impact at the Green Islands, and the issues of sustainability and environmental change at the Orchid Island.



- F-3-2 Chi-Chang Liu (Department of Ecological Humanities, Providence University),
**Immersing environmental education into ecotourism: stepping stone for
Kinmen toward to sustainable development.** (劉奇璋，環境教育融入生態
旅遊：金門邁向永續發展的踏腳石，靜宜大學生態人文學系)

It has been well recognized that sustainable development is good for our community, and the government, stakeholders, researchers and the general public are looking for ways to achieve this goal. Kinmen, allowing almost all kinds of tourist activities since 1994, has facing the controversy between economic development and natural resources protection. We analyzed some cases of ecotourism such as horseshoe crabs and cormorants in Kinmen and green turtles in Penghu, and combining with ideas from studies in planning and researches in ecotourism, carrying capacity of ecotourism, environmental education and sustainable development and came out with suggestions for ecotourism and sustainable development for Kinmen as below: 1) conducting research and survey on resources to gain information for planning, 2) emphasizing the unique characteristics of Kinmen such as war history, immigrant culture and traditional buildings, 3) keeping carrying capacity in mind while planning and conducting ecotourism and 4) immersing environmental education into ecotourism in order to improve environmental literacy of the tourists. It is important that local community should be able to plan and conduct ecotourism and really make profit out of it so that this business can provide local people job opportunities. Moreover, immersing environmental education into ecotourism can not only increase the attractiveness of the tourism itself, but can also facilitate participants to develop their environmental literacy and willingness to protect the natural resources while visiting Kinmen.



F-3-3 Si-Min Lin (Department of Life Science, National Taiwan Normal University),

The fertile biodiversity in the demilitarized zone: wildlife management on Kinmen Islands. (林思民，豐饒的生物多樣性：戰後金門的野地資源與管理，國立台灣師範大學生命科學系)

Demilitarized zones (DMZs), separating countries or territorial entities, are usually established to cease military conflicts between different nationalistic or political. Although prior military actions may have resulted in the local extinction of flora and fauna, these areas could become refugia for wildlife after the establishment of corridors. The most famous example of such a region is the DMZ along the 38° North parallel line of the Korean Peninsula, which has provided valuable habitat for endangered species. Here we demonstrate the latest case from Kinmen Island, located only 2 km from China coastline, as a new case of DMZ helps protecting endangered wildlife. Recent studies have shown the population recovery of several endangered species from near extinction or from local extinction, including the Eurasian otter (*Lutra lutra*) and the horseshoe crab (*Tachyplesus tridentatus*). A large lagoon in Kinmen is now sustaining one of the largest wintering populations of cormorants (*Phalacrocorax carbo*) in East Asia, while Blue-tailed Bee-eaters (*Merops philippinus*) take advantage by nesting in artificial sand banks abandoned by the military.

Recent studies from herpetologists also provided interesting results. Populations of Chinese Pond Turtle (*Mauremys reevesii*) and Burmese Python (*Python molurus bivittatus*), both classified as endangered species in China and adjacent regions, were found stable on the island. Occurring from 40% among investigated water bodies, Kinmen has become one of the very rare cases where wild Pond Turtle lives. However, this population is still threatened by habitat degradation, fragmentation, road kills, and genetic introgression from invasive turtles. The discovery of the Burmese Python is even fantastic: this species, once thought to have gone extinction, was discovered after withdraw of the army. Evidences from molecular analyses proved this species to be native, providing further evidence on how a DMZ helps protect endangered wildlife. Conservation of the python encounters all the possible problems as other snakes throughout the world: misconceived, less concerned, less studied, and with a shortage of conservation resources. With an increasing contradiction between snake and human, we call for paying more attention on the research and conservation of this amazing organism.



- F-3-4 Weng Tzu-Pao (Director-General of the Economic Affairs Department, Kinmen County Government), **Sustainable Development Measures and Reflection on Island Globalization – The Example of Kinmen County Conceptual Master Plan.** (翁自保，島嶼全球化之永續發展對策與省思-以金門縣概念性總體規劃案為例，金門縣政府建設處處長)

Kinmen County established tourism as its core objective since battlefield administration was terminated on November 7th, 1992. This core objective has remained unchanged for 20 years, but objective and subjective conditions have, including:

1. Kinmen has a county government, national park, and military units. Kinmen residents have not been able to feel the positive effects of the plan on Kinmen's development due to rapid changes in spatial development and control by the said units.
2. The central government emphasizes its cross-Straits policy and offshore island development, but there is a significant gap between local needs and government policy and plans.
3. After the relaxation of cross-Straits relations and the opening-up policy was implemented, Xiamen has become a major travel destination on the west coast that boasts a robust service industry.
4. Kinmen has become a cross-Straits transit center, but of the over one million travelers, very few spend any money in Kinmen, and the ten million travelers at Xiamen were not attracted to Kinmen.
5. The current Kinmen Magistrate proposed five visions for Kinmen's development, specifically "International Tourism Leisure Island," "Superior Medical Health-care Island," "High-class Tax-free Heaven of Quality Goods Shopping," "University Island of the Convergence of Cross-strait High Education Elites," and "White Liquor Culture Island with Wine Aroma Overflow and Elegant Poetic Liquor Atmosphere."

This master plan employs the conceptual planning method, D+E+E+P compound planning method, environment planning method, economic planning method, and market demand model. Objectives are as follows:

1. To propose development plans for each stage based on the concepts of globalized island and sustainable Kinmen.
2. To formulate pilot policies and action plans based on the successful experiences of islands around the world.
3. To carry out urban planning of key areas as pilot projects of this master plan.



F-4 Heritages and development

F-4-1 Zhi-Jun Li (College of Humanities, Xiamen University), *The Location of Marine Political Geography And the Governance of Qing Dynasty for the Penghu Sub-prefecture: BASED MAINLY ON STATE BAILOUT OF STORM DAMAGE.*

（李智君，海洋政治地理區位與清政府對澎湖廳的經略：以風災的政府救助為中心，廈門大學人文學院歷史系）

Located in Taiwan Strait, Penghu Islands hold a strategic importance of marine political geography. However, the natural environment there is quite harsh, with poor natural resources and frequent windstorm disaster. In 1638, Penghu was controlled by Qing Dynasty. In order to control Taiwan, Qing government made many efforts to make this undeveloped island habitable, which can be clearly seen from the investigation, report, bailout and re-investigation for windstorm disaster. During the 200 years of Qing Dynasty, Penghu had saw a rapid population growth due to the social stability without even one rebellion. These changes turned Penghu into a solid military base to control Taiwan and to defense pirates in Southeast China coast. In fact, the stability and prosperity of coastal area in Qing Dynasty, such as Yangtze River delta, coastal area of Fujian and Pearl River Delta, all benefited from the success governance of outlying islands.



F-4-2 Chung-yu Chen (Institute of History and Philology), **The prehistory of Matsu archipelago and Liangdao Man.** (陳仲玉，馬祖列島的史前文化與『亮島人』，中央研究院歷史語言研究所教授)

From archaeological surveys to the excavation of prehistoric sites and the establishment of cultural prehistory of the Matsu Archipelago, the author had worked just for 13 years. Although the jobs didn't take long, but the results are fruitful. Especially in the past 2~3 years, two "Liangdao Man" skeletons were unearthed and researches on DNA studies were much valued by international academic societies. The purpose of this article is based on establishment of prehistory of the Matsu Archipelagos, as well as comparisons of prehistoric culture with Minjiang (Min River) estuary, coastal Fujian Province. In addition, two "Liangdao Man" their dating are 8,200 BP and 7,500BP., not only trace back the history of Matsu archipelago into prehistoric time, but also, the DNA extraction studies of "Liangdao Man" are successful with each E and R9 mitochondria haplogroup(mtDNA hyplogroup) comeout, which indicate the "Liangdao Man" had kinship with modern Austronesian, especially more close to certain ethnic groups of Taiwan aborigine. The "Liangdao Man" is, as of now, the earliest Austronesian.



F-4-3 Chao-Ching Fu (Department of Architecture, National Cheng Kung University),

**The Sustainable Strategy of Matsu's Military Cultural Landscapes as Creative
Spotlight Sites for Cultural Tourism.** (傅朝卿，馬祖戰地文化景觀作為文化
觀光創意亮點之永續策略，國立成功大學建築系特聘教授)

The Matsu Island Chain, located in the northwest of Taiwan Strait, is administrated by Lienchiang County of Fujian Province. The island chain is composed of ten main islands namely Nangan, Beigan, Gaodeng, Liangdao, Daciou, Siaociou, Dongjyu, Sijyu, Dongyin and Siyin. Matsu is geographically closed to the Chinese Mainland and had been the military front against Chinese Communism since 1949. It was not easily accessible for the ordinary people from Taiwan for the purpose of tourism. The function of military front was lifted in 1994 and a new role is planned for the visitors. In fact, Matsu had never received the attack of the war although it was treated as military front. All the facilities were set up for the purpose of defense and had become a part of people's life. Military facilities and non-military facilities with military characters have formed special cultural landscapes which become unique tourist attractions and promoted by the Ministry of Culture as a potential site for World Heritage in Taiwan. This paper will discuss the sustainable strategy of constructing the military cultural landscape as spotlight sites for cultural tourism.



- F-4-4 Chaur-Giun Chen (Director-General of the General Affairs Department, Kinmen County Government) **From Cold War to Change – Kinmen's Past, Present and Future.** (陳朝金，從冷戰到蛻變：金門的過去、現在與未來，金門縣政府行政處處長)

After the nationalist government retreated to Taiwan, Penghu, Kinmen and Matzu in 1949, Kinmen experienced several battles, including the “Gunningtou Battle” and “823 Artillery Bombardment,” as well as the “odd-numbered day artillery bombardment” that followed. The government thus implemented a 36 year long (1956~1992) battlefield governance with unified military and government leadership. Residents’ living space and freedom of thought were both limited as they held the “Kinmen spirit” to “not fear hardship in life, not fear difficulty in work, and not fear death in combat”; residents defended the island with their lives and it developed into a cold war with the other side of the Taiwan Strait.

Since the “mini three links” was initiated on January 1st, 2001, the total number of cross-Strait travelers that transferred at Kinmen reached 11.01 million person-times as of May 2014, turning Kinmen into a cross-Strait transit hub. This result was based on both sides of the Taiwan Strait understanding “the people’s needs”, and pragmatic implementation with the concept to “create win-win.” The prosperity of Kinmen today was only made possible through both sides strengthening infrastructure and engaging in communication and negotiation.

Kinmen residents have turned from “complain” to “hope,” their contributions to this land have left ineradicable traces, and as they have deeply learned the preciousness of peace, they hope that the world will forever remain in peace and that Kinmen will always be an “island of peace.”



F-5 Ocean and coastal monitoring models

- F-5-1 Shyang-Chyuan Fang (Dept. of Tourism and Leisure, National Penghu University of Science and Technology), **Application of Structural Equation Modeling to Predict the Impacts on Ecosystem for Bridge Reconstruction Across Islands in Penghu ,Taiwan.** (方祥權，以結構方程模式進行澎湖海域長期資料的生態系模式建構與預測，國立澎湖科技大學觀休系)

Because of the bridge lying across islands, conditions of the marine ecosystem at inner bay of Penghu waters were getting impaired, the fishing resource started to decline, and the ecosystem of coral reef appeared to wane away gradually. Researchers concluded that the coral reef environment in Penghu area faces serious damage, primarily by organic pollutants, excessive deposition, tourism activity and improper fishery behaviors; therefore, how the bridge reconstruction affects the marine ecosystem becomes a popular topic for study. Because the changes of field environment are rather complicated, it is difficult to use traditional approaches to express the interactions between biology and environment, particularly on quantitative assessment of marine ecosystem subjected to human-caused disturbances. Structural equation modeling (SEM), a higher-order statistics method combining with analyses of impact factors and pathways, is a useful mathematical means and has been successfully applied to resolve such problems. In this study, SEM was applied to assess various types of marine ecosystem and to predict how main environmental variation factors (including human-caused disturbance) would affect directly or indirectly on marine ecosystem for bridge reconstruction. The benthonic ecosystem model of Penghu waters was initially established as a base to predict that the period of bridge reconstruction would pose insignificant impact on coral. But water quality and water circulation environment after initiation of the bridge transit, would be improved and subsequently promote improvement of coral growth at Penghu inner bay.



- F-5-2 Shyang-Chyuan Fang, I-Cheng Chang, Tai-Yi Yu (Dept. of Risk Management and Insurance, Ming Chuan University), **Analysis of Spatial Features of Coastal Oil Pollution using Multivariate Methods.** (方祥權、張益誠、余泰毅，運用多變量方法分析海岸油脂污染的空間特徵，國立澎湖科技大學觀休系、宜蘭大學環境工程系、銘傳大學風險管理與保險系)

Coastal water quality plays an important role in people's lives. In this study, the coastal water of Penghu archipelago was used as a research object. Three types of multivariate methods—factor analysis, cluster analysis, and multivariate scaling—were employed to analyze the spatial features of oil pollution, and the results of these three methods were compared with regard to the causes of pollution. Factor analysis showed that oil-concentration sub-regions, composed of the first four principal components, accounted for 84.8% of the oil concentration variance. The contour maps of factor loadings of each principal component, combined with the distribution of pollution sources, the direction of seawater flow, etc., might be appropriate to interpret the pollution patterns represented by each principal component. Based on the comparison of the advantages and disadvantages of the three multivariate methods used to explain the geographical features of oil concentration, factor analysis was the best analytic approach in that it could provide information of proportional contributions from a variety of pollution sources on oil concentration variance, and it provided appropriate spatial classification results and a classification number. The spatial classification result of multivariate scaling was similar to the result of factor analysis, except there was only one observation station. However, it was not easy to explain the physical significance of each dimension. Although cluster analysis could differentiate the concentrations measured by all observation stations, its geographical classification result was worse than those of the other two methods mentioned above.



- F-5-3 Yu-Jie Wang, Tzeu-Chen Han (Department of Shipping Management, Penghu University of Science and Technology), **Developing sustainability evaluation model of Penghu: Considering inefficiency of undesirable factors by no-radial DEA.** (王昱傑、韓子健，國立澎湖科技大學)

Penghu, in the west of Taiwan and across from Taiwan with Taiwan Strait, is an area almost composed of forty-one small islands. In Penghu, tourism is one of important revenue resources for inhabitants, and thus Penghu local government hardly develops the area into leisure islands. However, tourism often conflicts with environment of Penghu that has only scarcity resources. In other words, tourism is an impact for the other target of Penghu being as low-carbon area. For sustainability in Penghu, we desire to develop a sustainability evaluation model with government identifying standards and non-radial data envelopment analysis (DEA). In the sustainability evaluation model, we first find peer decision-making units (DMUs) according to government identifying standards and then measure inefficient DMUs by non-radial DEA. Practically, Hwang et al. (2013) had developed a radial DEA model to consider simultaneous increase of desirable outputs and decrease of undesirable outputs with a focus on identifying inefficiency for automobile industry. Commonly, non-radial DEA can reflect efficiency of a DMU for separate inputs and outputs, but radial DEA does not. Therefore, we will develop the evaluation model including non-radial DEA for sustainability measure in Penghu tourism and low-carbon (i.e. carbon dioxide emissions decreased), beside government identifying standards, for this paper. As inputs, desirable outputs including tourism, and undesirable outputs including environment impact such as carbon dioxide emissions are yielded, the proposed model can provide inefficiency measure to help identify the eco-efficient way while improving evaluation DMUs in Penghu sustainability.



- F-5-4 Su-Chang Chen, Sin-Ting Jeng, Kuang-Hui Li, Ji-Rong Huang, Yu-Tong Chen & Pei-Jyun Lu (Dept. Marketing & Logistics Management, National Penghu University of Science and Technology), **The Influence Factors on Students to Choose University of Penghu Islands in Taiwan.** (陳甦彰、鄭心婷、李光惠、黃己容、陳昱同、盧佩君，影響學生選擇位於澎湖島嶼上之大學就讀因素研究，國立澎湖科技大學物管系系主任兼教務長)

In 2013, there were 147 universities in Taiwan. How to beat numerous universities to attract students study? This is very important issue for each university in Taiwan, especially in Penghu islands. The purpose of this study is to explore and understand the influence factors on students to choose university of Penghu islands in Taiwan. The subjects of this study are 48 freshmen from department of Marketing and Logistics Management of National Penghu University of Science and Technology. This study uses Analytical Hierarchy Process (AHP) questionnaire as a research tool. There are 48 questionnaires send out. Through consistency of test, the study gets 29 valid questionnaires. The valid return rate is 60.4%. The results show that the personal facet is the most important factor in the object level. The second one is consider for department facet. In the attributes level, the top five factors are family economic, entrance scores, public/private schools, interests, future development. The study suggests that when the promotion of university enrollment, the school should be emphasized low tuition, reduce economic burden of parents, and also to encourage students to choose their interesting department and future development of studying



國際島嶼研究學會介紹 (International Small Islands Studies Association)

第十三屆世界島嶼會議暨學術研討會

一、計畫源起

國際島嶼研究學會(International Small Islands Studies Association, ISISA)係由關心小島嶼研究與發展的學者組成之重要學術研究組織，其參與會員包括歐洲、地中海、波羅的海、北海、大西洋、加勒比海、印度洋、太平洋等各區域的島嶼國家、地區代表及島嶼研究相關機構和學者所組成。該學會藉由定期且多元化的國際交流方式(例如舉辦國際會議暨學術研討會、出版國際期刊)，鼓勵學者們探討小島嶼地區的各项資源管理與發展、及自然生態環境問題，並連結各區域的島嶼社群形成關係網絡，共同為島嶼國家或地區尋求永續發展之策略。「世界島嶼會議暨學術研討會」(Islands of the World Conference)為國際島嶼研究學會每兩年召開一次的國際性學術研討會，其主軸在於探討及解決島嶼國家和小島嶼地區所要面對的生態環境維護問題、島嶼社區和經濟發展問題、以及島嶼資源應用策略，並推動島嶼永續發展的相關研究。

首屆「世界島嶼會議」(Islands of the World Conference)暨學術研討會於1986年在加拿大維多利亞島(Victoria Island)召開，之後除特殊原因外，每隔兩年陸續在不同大洋地區的島嶼召開世界會議。ISISA 國際島嶼研究學會係於1992年在巴加海馬舉辦的第三屆世界島嶼會議中成立，正式成為「世界島嶼會議」之推動者，於1994年起在日本琉球等島嶼持續舉辦世界島嶼會議，其規模日漸擴大；並自2002年起創立「全球島嶼網絡」社群(Global Islands Network)¹、2006年起出版「島嶼研究」學術期刊(*Island Studies Journal*)²，在全球島嶼發展網絡及研究上，深具重要影響力。

2014年將在澎湖舉辦的「世界島嶼會議」為第十三屆會議，緣起於2012年在英屬維京群島舉辦的第十二屆世界島嶼會議中，在澎湖縣政府與臺灣師範大學積極爭取下，大會在各爭取主辦之島嶼地區中，決議2014年第十三屆世界島嶼國際會議的主辦島為台灣澎湖群島。歷屆世界島嶼國際會議舉辦區域及主辦島嶼地點如下：

第一屆(1986) 東太平洋	加拿大維多利亞島(Victoria Island)
第二屆(1988) 南極海	澳洲塔斯馬尼亞島(Tasmania)

¹ 「全球島嶼網絡」社群：<http://www.globalislands.net>

² Island Studies Journal: <http://www.islandstudies.ca/journal>



第三屆 (1992) 加勒比海	巴哈馬群島 (Bahamas)
第四屆 (1994) 西太平洋	日本琉球 (Okinawa)
第五屆 (1998) 印度洋	模里西斯島 (Mauritius)
第六屆 (2000) 東大西洋	英國蘇格蘭思嘉島 (Isle of Skye)
第七屆 (2002) 北大西洋	加拿大愛德華王子島 (Prince Edward Island)
第八屆 (2004) 西太平洋	<u>台灣金門島</u> (Kinmen Island)
第九屆 (2006) 太平洋	美國夏威夷茂宜島 (Maui Island)
第十屆 (2008) 西太平洋	韓國濟州島 (Jeju Island)
第十一屆 (2010) 波羅的海	丹麥博恩霍姆島 (Bornholm Island)
第十二屆 (2012) 加勒比海	英屬維京群島 (British Virgin Islands)
第十三屆 (2014) 西太平洋	<u>台灣澎湖群島</u> (Penghu Archipelago)

2014 年適逢聯合國公告的「國際小島國年」(International Year of Small Island Developing States)、聯合國 1992 年「二十一世紀議程 Agenda 21」第十七章「小島與小島國永續發展」專章衍生的「1994 巴貝多宣言：小島永續發展行動計畫」之第二十週年(『巴貝多+20』BPoP+20)、以及 ISISA 成立 20 年；無論是聯合國小島國組織 (SIDS) 或是各主要島嶼研究組織皆將有重要會議，以提昇廣布於佔地球百分之七十面積的海洋上無數島嶼之發展議題的重要性。此次在澎湖群島承辦 2014 年世界島嶼會議，將與聯合國「國際小島年」及「巴貝多+20」等重要國際亮點活動呼應，是澎湖走向國際的重要里程碑，也將在國際歷史上留下重要紀錄。

台灣為一大型海島且擁有豐富而多樣的各類型離島，而澎湖群島位於台灣海峽，由大小 90 個島嶼組成，總面積約 128 平方公里，近年來澎湖縣政府積極推動低碳示範島計畫，運用當地的風力資源推動兼顧能源、經濟和生態的永續發展，並在國際島嶼網絡平台 (Global Islands Networks) 上被推薦為永續島嶼「綠能島」(Green Islands) 之範例³。因此，藉由澎湖在島嶼發展的經驗，可增進與各島嶼地區研究學者之對話，探討島嶼型地區所共同面臨的永續發展之問題與解決策略、提昇國際能見度，並促進國際合作與交流。本次會議將由澎湖縣政府主辦，國立澎湖科技大學承辦，並結合「國際島嶼研究學會」秘書長(德國漢堡大學 Beate Ratter 教授)、會長(澳洲雪梨大學 Grant McCall 教授)、副會長(馬爾他大學 Godfrey Baldacchino 教授)、多位執行委員會委員、國內幾位長期參與國際與臺灣離島研究、以及澎湖研究之學者專家，共同策劃會議議程與舉辦。

³詳見網站：<http://www.globalislands.net/greenislands/index.php?region=11&c=39>



(一) 會議舉辦時間：民國 103 年 9 月 22 日至 9 月 27 日

(二) 會議舉辦地點：國立澎湖科技大學 海洋科技大樓

(三) 會議目的

國際上的小島嶼地區均有面臨面積小與土地資源有限的相似發展議題，然而海洋的連結、島嶼的生態文化特色，卻又為全球島嶼帶來許多美好及創新發展的可能。島嶼與海洋在全球之連結，已隨交通與科技之發達而日見緊密；島嶼發展的挑戰，也因氣候變遷及全球政治經濟發展而充滿挑戰與新的可能性。

島嶼發展當前議題，常圍繞在當地的「經濟與產業之發展問題」、「社區住民生活品質之改善問題」、以及「島嶼生態自然環境之保育問題」，而本次會議暨學術研討會將此三大議題納入研討會主題。其中，根據「經濟與產業之發展問題」衍伸的層面，包括島嶼觀光休憩產業、水產養殖產業、及綠色能源產業之永續培育與創新發展（包括數位通訊產業）；而「社區住民生活品質之改善問題」衍伸的面向，包括島嶼社區建設與發展（包括澎湖地區醫療發展）、人文歷史保存與維護、以及在地教育紮根與技能訓練；最後，由「島嶼生態自然環境之保育問題」衍伸的議題，包括澎湖島嶼區域計畫發展、海洋國土結合議題、島嶼產業發展對於自然環境之衝擊與因應的問題、以及在全球化下島嶼永續發展之對策與省思。並且在此次會議後，整理與會專家學者提出的相關寶貴意見與策略，收錄於會議論文集專書中，且納入計畫成果報告，以提供澎湖地方政府機關參考。

本次會議暨學術研討會將藉由來自世界各地的學者，分享島嶼研究成果和經驗，從不同的主題探討島嶼永續發展之策略，以促進台灣與國際各島嶼地區長期地互動交流與建立合作關係，並且提升澎湖群島在國際社會之知名度、行銷澎湖低碳示範島經驗，同時學習國際島嶼的發展策略，配合澎湖地區特有的海島資源與觀光休閒環境，結合澎湖當地社區資源，協助發展地方特色產業。並經由此會議加強澎湖及臺灣各島嶼與全球島嶼網絡之連結、創新思維、邁向永續發展。



General Information

The Venue:

“The Most Beautiful Bays in the World”

Headquartered in central France, the Most Beautiful Bays in the World was founded in 1997. Among the 39 bays which are recognized by the organization are San Francisco Bay, Qingdao Bay, Ha Long Bay, etc. This international NGO supported by the United Nations Educational, Scientific, and Cultural Organization works to preserve natural resources, i.e. the world’s bays. The organization is constantly on the lookout for new partners in its work to grow across the globe, and through individual and group action seeking better water and resource management and a balance between human activity and symbolic scenic areas.

The Penghu Archipelago consists of some 90 islands. Penghu’s coastline extends 448 kilometers, covering a total land area of 127 square kilometers. The scenery created by the archipelago’s unique ocean geology has influenced and interwoven with local culture, adding to the splendor of our bays. Our long-term effort to conserve the natural resource is that our bays have won the approbation of the “Most Beautiful Bays in the World”, and Penghu has been a formal member of the organization since a recognition ceremony in Paris on November 12, 2012. Penghu will conduct exchanges and cooperate with other members on oceanic environment management, bay culture preservation, and other related issues. This will increase Penghu’s international visibility and bring our fair archipelago onto the world stage, helping to meet a founding principle of The Most Beautiful Bays in the World.





Penghu Archipelago

Penghu is located on the Taiwan Strait between China and Taiwan in Asia. It is the only island county of Taiwan. When the tide is on the ebb, more than one hundred isles appear. Therefore, the number of the total isles varies. Generally speaking, at a rising tide, 90 isles are scattered between north latitude $23^{\circ}12'$ to $23^{\circ}47'$ and east longitude $119^{\circ}19'$ to $119^{\circ}43'$. The utmost east isle is called Zhamu Isle, the utmost west isle Hua Isle, the utmost south isle Chi-mei Isle, and the utmost north isle Dogiao Isle. The utmost west isle is also the utmost west boundary of Taiwan. Something unusual about Penghu isles is that the Tropic of Cancer goes through Hoojing Isle, one of the 90 isles.

The Penghu archipelago scatters all over the ocean and extends around 60 km north to south, 40 km west to east. The total area of the 90 isles is around 127.9636 square kilometers. Among the isles, 19 are populated and the total area is 124.9392 square kilometers. However, 71 isles are not inhabited and the total measure of the area is 3.0244 square kilometers. The biggest isle is Magong Isle, and another 4 big isles in the order of size are Yuweng Isle, Baisha Isle, Chi-mei Isle and Wang-an Isle.

Its geology is made by the Pleistocene volcanism and is formed by pluton of andesite and pluton of basalt. Some rock layer formed after the last phase of the tertiary period is also mixed up within. As to the structure of it, penghu layer can be divided into 4 groups. From the newest to the oldest, they are seashore pile-up layer, Husi layer group, and the hua isle made by silicon rock layer is even older. It is the rock body of the Paleozoic era to Mesozoic era. And the layer which most penghu people inhabit is mostly yuweng layer group.

National Penghu University of Science and Technology (NPU)

Address: 300, Liu-He Rd., Magong City, Penghu County, Taiwan, R.O.C.

Tel: +886-6-9264115 Fax: +886-6-9278912

Website: <http://www.npu.edu.tw>

Brief School History

1991: Penghu Branch of Kaohsiung Marine Academy

1995: National Penghu Marine Academy

2000: National Penghu Institute of Technology

2005: National Penghu University of Science and Technology



Academic Development

NPU is a comprehensive university of technology that is committed to research areas of aquaculture, leisure and tourism, and green energy. NPU emphasizes the link and cooperation between local industries and practical teaching to empower our students with world visions, creative thinking, and professional skills. This ensures that NPU graduates meet the needs of the fast growth of national economy and local industries.

NPU forms close partnerships with local businesses and industries, and puts a lot of emphasis on the connection between theory and practice. NPU provides a supportive living environment that encourages students to connect with others who share a similar academic program or interest area. Besides, NPU allows easy access to campus facilities, as they are often in close proximity to classes and offices related to the student's program of study or interest area.

NPU has a low student-teacher ratio to benefit our students by increasing student achievement, enhancing student academic performance, and providing lasting academic benefits. Teachers and staff at NPU are more than happy to help our international students with all the issues and problems they might face at school for a smooth transition to university life.

Concerning academics at NPU, there are several one-of-a-kind programs that showcase the local industries, including the green energy, tourism and leisure, marine sports, and the Penghu Summer School programs. Experienced professors and experts from various fields come together to design and teach these courses.



Service

1. Pick up service at Tao-Yuan International Airport (Taipei)

The local organizer will arrange a free pick up service at Tao-Yuan International Airport (Taipei) on Monday, September 22nd. The pick up service will provide transportation from the airport to National Taiwan University (NTU) Guest House–Just Sleep.

Please inform us of your arrival time and flight number at your earliest convenience.

2. Accommodation in Taipei

All participants who have booked accommodation in Taipei through the local organizer will stay at the NTU Guest House. For more information about the hotel, please visit the web site: <http://www.justsleep.com.tw/NTU/en>

3. Domestic flight from Taipei to Penghu

Airports:

Taiwan Taoyuan International Airport (TPE): <http://www.taoyuan-airport.com/english/Index/>

Taipei Songshan Airport (Domestic airport) (TSA): <http://www.tsa.gov.tw/tsa/en/home.aspx>

Penghu Magong Airport: <http://www.mkport.gov.tw/english/include/index.asp>

All participants who have booked local flight tickets from Taipei to Penghu by local organizers will take the flight departing at **10:35 am on Tuesday, September 23rd** (Mandarin Airlines). The flight will depart from Taipei Songshan Airport. There will be a free bus service from the NTU Guest House to Songshan Airport. The bus will depart at **8:30 am** from the NTU Guest House. There is also a free bus service from Magong Airport to the Pescadores Hotel, Penghu.

4. Accommodations in Penghu

All participants who have booked accommodation in Penghu through the local organizer will stay at the Pescadores. For more information about the hotel, please visit the web site: <http://www.pescadoresresort.com.tw/>.

5. Registration

On-site registration for the guests of ISISA Islands of the World XIII (Small is Beautiful: Island Connections and Innovations) will take place in the main building of National Penghu University of Science and Technology. The open hours of the registration desk are:

- Tuesday, 23rd September 1:30 p.m. until 2:00 p.m.
- Wednesday, 24th September 8:30 a.m. until 9:00 a.m.
- Thursday, 25th September 8:30 a.m. until 9:00 a.m.



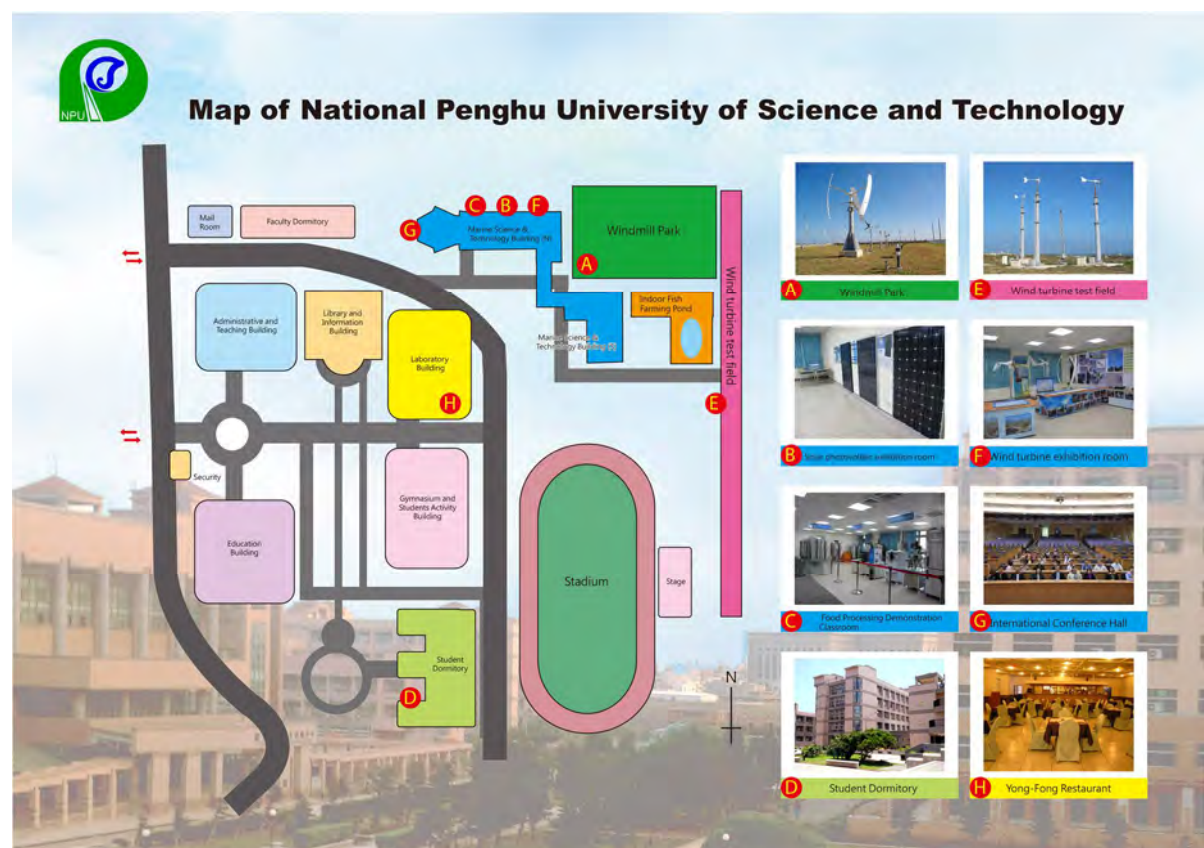
6. Meeting Venues

Conference venue:

NPU: <http://english.npu.edu.tw/>

<http://2014isisa.npu.edu.tw/island/>

The conference will be held at National Penghu University (NPU), Penghu, Taiwan. The school address is: No.300, Liu-he Rd., Magong City, Penghu County 880, Taiwan (R.O.C.). The Opening Ceremony and the Closing Ceremony will take place in the Marine Science & Technology Building of NPU, and the Congress Dinner will take place in the Pescadores Hotel.





7. Internet access

Free Wi-Fi internet access is available to all participants. A code accessing the university's Wi-Fi will be provided to each participant during registration. Depending on the intensity of use by conference participants, the speed of the Wi-Fi connection might be suboptimal in peak hours. (the code is from isisa001 ~ isisa200, and will be shown on each participant's ID card).



8. Domestic flight from Penghu to Taipei

All participants who have booked local flights from Penghu to Taipei will take the flight departing at **16:30 p.m. on Saturday, September 27th** (Mandarin Airlines). There will be a free bus service from National Penghu University of Science and Technology to Magong Airport. There will also be a free bus service from Taipei Songshan Airport to Howard International House, Taipei.



9. Field trip (Sept. 24th & Sept. 26th)

The field trips to Penghu Main Island culture & Nature Site Visits and Chi-Mei Island are scheduled on Sept. 24th and Sept. 26th respectively. Participants will take a bus to Penghu Main Island at 15:00 pm on Sept. 24th, and to Chi-Mei Island by ship at 8:30 am on Sept. 26th. The detailed information will be available at the conference venue.

10. Taxi service

If you need a taxi service in Penghu, please contact our staff at the service center or call the number: + 886-6- 9273388 or +886-6-9272955

11. Poster Exhibition – 20 years of ISISA

There will be a “Poster Exhibition – 20 years of ISISA: From Okinawa to Penghu” at the Marine Science and Technology Building of NPU during the conference period.

12. Contact Persons

Dr. Shi-Liang Yu, National Penghu University, Taiwan: slyu@gms.npu.edu.tw

Cell Phone: +886-988-215-578

Dr. Jia-Wei Tang, National Penghu University, Taiwan: jiawei@gms.npu.edu.tw

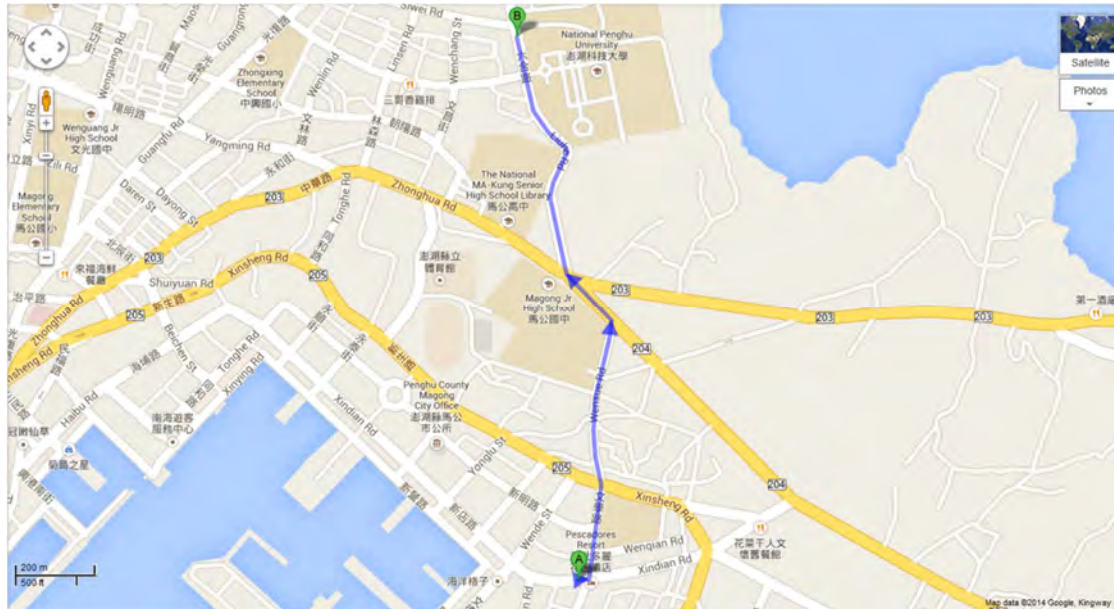
Cell Phone: +886- 931-937-060

Dr. Huei-Min Tsai, National Taiwan Normal University, Taiwan: hmtsai@ntnu.edu.tw

Cell Phone: +886- 933-921-658



MAP (Location of Hotel & Conference Venue)



Field Trip I

Nature-culture tour on Penghu main island (Sept. 24th)



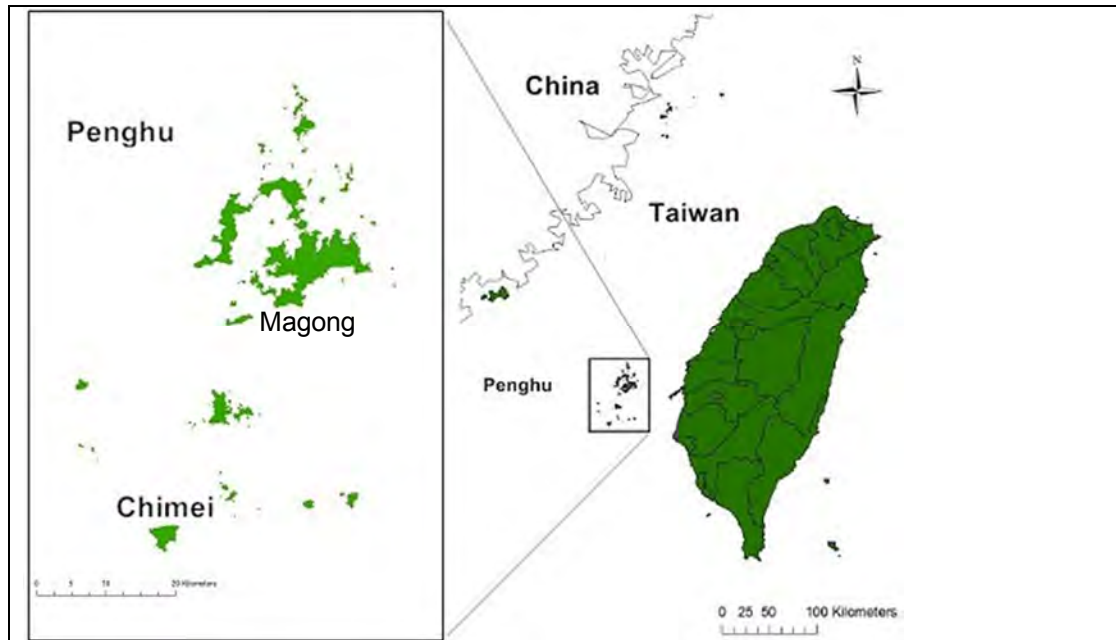
(Map source: Penghu National Scenic Area Administration, Tourism Bureau, Ministry of Transportation and Communications, ROC)

Time	Place	Activity Schedule	Remark
15:00-15:30	Penghu Living Museum	Penghu Living Museum is the first city museum in Taiwan. To make the exhibits close to real life, real specimens, documents, images, ecological landscaping, and miniature models are presented; virtual reality and multimedia are alternately applied.	
16:00-16:30	Tongliang Great Banyan Penghu Great Bridge	In front of the Baoan Temple in Tongliang Village, there is an old Banyan dated over 300 years, it is the oldest and largest tree in Penghu, with a total of 95 aerial feet, circling a square for people to rest under its	

		shadow in front of the temple. The Penghu Great Bridge is 2,494 long. It strides above the Houmen Waterway between Baisha and Xiyu Islands.	
16:30-17:00	Erkan Historical House	Towards the end of Ming Dynasty, Mr. Chen Yanyi came to Penghu across the sea from Kinmen, came ashore at today's Dachih Village and went into fishery.	
17:00-17:30	Daguoye Columnar Basalt	During the Japanese occupation, a wharf was planned to be built at the seaside of Daguoye to improve marine communications between Magong Island and Xiyu. While the workers were digging earth and stones away, they found the impressive columnar basalt which had been buried and had been in sound sleep for thousands of years. We can say that it is the most accessible columnar basalt in Magong Island.	
18:00-	Aimen Beach	If the Shan-Shue Beach is Golden Sand, then Aimen Beach is the most romantic Love beach. There are not many visitors on Aimen Beach in common days. You can see a pavilion where visitors can have a rest, and moving forward, you will see that the white beach melts into the blue sea and sky. At Aimen Beach, you can enjoy BBQ.	

Field Trip II (Sept. 26th)

Chimei Island: Adaptation and Innovation on the Small Island



Location of Chimei Island in Penghu Archipelago





Friday, September 26, 2014

- 08:00 Buses depart from Pescadores Hotel
- 08:30-10:00 Boat trip to Chimei (Sightseeing: small islands on the sea)
- 10:00-10:20 Nanhu Port, Bus services
- 10:20-11:20 The Origins of culture in Chimei and its linkage to the world,
Seven Beauties Tomb / Nankang Prehistoric Lithic Workshop
- 11:20-11:50 Basalt and formation of the island- Chimei Yueli bay
- 12:00-13:00 Lunch: Reception at Senior Citizens' Activity Center, Zhonghe Village
- * Lunch- local cousins
 - * Exhibition: local art, cultural and creative items
 - * Dayu Cultural & Lifestyle Museum
 - * Meet with local people and the research team of Chimei's development planning
- 13:00 -14:30 Island Community Forums
- 14:30-15:00 Innovations for the sustainable future- Solar Energy Park / Reservoir & proposed Nature School
- 15:00-15:30 Island livelihoods, adaptation and traditional knowledge: "Lungcheng" and "Little Taiwan" (wave-cut platforms) /Twin Hearts Stone Weir (stone fish weirs in the intertidal zone) / Caizhai (stone-walled vegetable gardens)
- 15:30-16:00 The transformation of fishery and seafood in Chimei Nanhu Port in Chimei: From coastal and offshore fishery to far-sea fishery and abalone aquaculture
- 16:00-17:30 Sunset cruise heading back to Magong



Visiting sites on Chimei Island

