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2. Research Summary

2.1 Nature-Based Tourism Unit

Development of the method of ecotourism for environmental education (Drs. KOSAKI & IKAZAKI)

Sustainable use of terrestrial ecosystems is always required for our life in harmony and it must be endorsed by confirmed knowledge about right manner of cycling of organic and inorganic components in an ecosystem. Extensive field study was conducted at Ogasawara in Japan, Inner-Mongolia in China, Sahel in Niger, and Peninsular Malaysia, in order to obtain basic data related to soils, vegetation cover, and environmental variables such as temperature, precipitation, soil moisture, and others for understanding and modeling the cycles of the above components in each ecosystem. Those data were further compiled and built up into the contents to be used for planning eco-tours for environmental education in the listed areas.

Activities of “Soil Degradation Research Initiative (SDRI)” (Drs. KOSAKI & IKAZAKI)

SDRI has been funded by the university since 2009 to promote organizing a research group on and disseminating research outcomes of soil degradation control, remediation and rehabilitation in collaboration with domestic and international research and educational institutions. SDRI convened two international symposia in 2011: “Soil degradation and pedology” together with Japanese Society of Soil Science and Plant Nutrition, International Union of Soil Sciences (IUSS) on August 8-10 at Tsukuba, Japan, and “Soil degradation and management” with East and Southeast Asia Federation of Soil Science Societies and IUSS on October 10-13 at Colombo, Sri Lanka. Oral and poster papers were presented in both symposia and 16 of them were selected and published in the special issue of Pedologist (Vol. 55(3), 2012).

Study on the Commodification of Rurality (Dr. KIKUCHI)

I focus on rurality as an option to urbanity in Tokyo metropolitan fringe, and discuss the sustainable commodification of rural space in the area. Following my discussion, I identify some of the conditions that supported the commodification of rurality and their interaction in the outer fringe of Tokyo metropolitan area. In this area, the areal decrease of rural forests (satoyama) has led to the decline of rural landscape; the development of affordable housing lots in the outer fringe and the continuous inflow of urban residents into the newly developed areas have led to serious conflicts between rural and urban land uses. Recently however, activities that aim at recreating rurality, such as conservation of rural forests, have been promoted as a means to mitigate such conflicts, and to develop these areas as nodes of rurality and urbanity. Thus, the perpetuation of rurality has been assured by the sustainable relationships between rurality and urbanity. The conservation of rurality facilitates the commodification of rural spaces, a process which has played an important role in developing rurality-based tourism.

Study on the Food System and Food Tourism (Dr. KIKUCHI)

I made a point of the food system in terms of Japanese organic fresh vegetables based on the case study of Tokyo metropolitan area, and discussed on its potential development for food tourism. The food system is a commodity chain from the production to the consumption, and has emphasized the relationships between them since the 1990s, when the globalization of food supply systems has increased. In Japan, the food system of organic fresh vegetables plays an important role in satisfying consumers of Tokyo metropolitan area, which need fresh vegetables insured safety through an alternative commodity chain. When the food system of organic vegetables has the commodity chain including farm shops and restaurants, it is possible for organic vegetable farming to develop the food tourism.

Study on the Sustainable Development of Nature-based Tourismism (Dr. KIKUCHI)

Nature based tourism is increasing throughout the world and particularly in Japan. Most is based in national parks and restricted areas. But the increase of the population in Japan, it is difficult to protect the flora and fauna unless there are economic benefits to the country as well as to the local people. The conversion of more and more land to agriculture and resort areas leads to loss of habitats that are crucial to animals and plants; disappearance of forests, pollution and construction works also contribute to loss of habitat. Due to the increasing demand of tourism industry in Japan, more land is being converted to resort areas and new
roads. Such hotel and road constructions lead to the destruction of the natural environment. This research suggests that nature oriented tourism can be one means to help achieve sustainability as well as protecting the important world heritage site. Well-planned tourism (the case of Australia and Canada) could provide economic and political incentives for proper management and for conservation and could bring additional benefit to local communities and regional economies.

**Understanding of General Flowering Phenomenon in Southeast Asia (Drs. NUNATA and ARIMA)**

General flowering (GF) is supra-annual community-level synchronization of reproduction of many plant taxa in Southeast Asian rainforests. In this region, diverse tree species including dipterocarp species represent reproductive synchronization with 5-7 months at irregular intervals of 1–10 years. GF results in a massive number of fruits in the forests, and therefore GF plays a central role in the successful regeneration of dipterocarp forests in Southeast Asia. We have monitored distribution patterns of GF forests and climatic conditions throughout the Peninsular Malaysia, and confirmed that GF episodes spatially varied from one forest to the peninsular-wide. To explore mechanism of GF, we are analyzing relationship between GF and possible proximate cues.

**Researchers’ Attitudes toward Tourism at Nature Reserves in Malaysia (Dr. NUMATA)**

In many nature reserves and national parks where many tourists visit, many researchers of natural sciences conduct their studies. However there is little information about researchers’ attitude toward tourism and contacts between researchers and tourists. Therefore, we studied researchers’ attitude to find out researchers’ attitudes toward tourism at nature reserves in Malaysia and factors that affect researchers’ decision making. We found that researchers’ attitudes toward tourism were closely related to their research objects, concerns for natural environment and merits of communication. If a new tourism program is introduced in research sites and research activities, zoning and making the rules for tourists are needed to reduce conflict between researchers and tourists, and researchers’ concerns about environmental impacts.

**Wildlife Tourism in a Malaysian National Park (Dr. NUMATA)**

In Southeast Asia, wildlife tourism may have potential because forest fauna is various and high in biodiversity. However, it is known about weak points of Southeast Asian wildlife tourism: difficulty of watching popular mammals in rainforests in daytime. In this study, we studied 1) the current mammalian fauna for visitors, and 2) visitors’ attitude in relation to wildlife. Some references have suggested that there are 95 mammal species in ER. Inhabitants of endangered mammals such as tigers, tapirs and Asian elephants were confirmed, but we confirmed eight out of 95 mammal species by camera trapping survey. Our questionnaire and hearing investigations revealed that only five out 51 visitors could have seen diurnal mammals such as monkey and wild boar. Our surveys also implied that visitors may be more satisfied to wildlife with more display about mammals in ER at visitors’ center. Therefore, good guiding would be helpful to enhance visitors’ satisfaction on wildlife tourism in ER.

**Calculation of Carrying Capacity (Dr. ARIMA)**

However we have lots of operations and systems for managing nature-based tourism, there is no systematic systems in Japan with computer technologies such as Geographic Information Systems (GIS). I am trying to create the more suited systems with GIS for managing the tourist destinations. Nowadays the research is operating on some islands in Tokyo; Ogasawara Islands, Niijima Island, Shikine Island and so on.

**Development of Soil Conservation Technique Both for Preserving Coral and Creating New Tourism Resources in Okinawa, Japan (Drs. IKAZAKI and KOSAKI)**

In Okinawa, corals are being damaged by bleaching, feeding by *Acanthaster planci* and habitat degradation from seawater pollution, and all of which are closely related to the eroded soil materials from the sugarcane fields. The objective of this study, therefore, is to develop an agricultural technique which can control water erosion in the fields and also create new tourism resources conducting a collaborative research with Japan International Research Center for Agricultural Sciences (JIRCAS) and evaluating the effectiveness of *Arachis hypogaea* and *Psophocarpus tetragonolobus* as a cover crop, both of which are indigenous crops and have a high potential for new tourism resources such as local specialties and luxury cosmetics.

**Development of Land Management System for Sustainable Urban and Rural Environment in the Sahel, West Africa. (Dr. IKAZAKI)**

The Sahel, south fringe of the Sahara Desert, is located at the semi-arid tropics and well known as drought-stricken region. However, there have been more floods in the last 20 years. In 2010, the number of flood victims finally reached one million, the same as drought victims. I made a hypothesis that this coincidental occurrence is caused by the decreased disaster-
prevention functions (water reservoir function and water consumption function) of the agricultural ecosystem and am testing this hypothesis by conducting water dynamics studies using lysimeters and simulation models under a collaborative research with International Crops Research Institute for Semi-Arid Tropics (ICRISAT).

**Effects of Sightseeing Activities on Soil and Vegetation in Hulunbuir Grassland, Inner Mongolia, China** (Drs. IKAZAKI and KOSAKI)

Grassland degradation is a major problem in Inner Mongolia and its causes have been said to be overgrazing, overcultivation, and climate change. However, sightseeing activities (walk, buggy, horse riding) also can be major contributor because the number of sightseer has been sharply increased in the last 10 years in Inner Mongolia (more than 10 times). Therefore, we evaluated the effects of sightseeing activities on soil and vegetation in Hulunbuir grassland, a famous tourist spot, and revealed that not to mention the buggy and horse riding, but even the stamp reduced the amount and quality of the grass mainly though the compaction of the soil.

**Mechanism and Countermeasure of Desertification in the Sahel, West Africa** (Dr. IKAZAKI)

The Sahel is still suffering from desertification. From the field studies under the collaborative project with ICRISAT and JIRCAS (2003-2011), I revealed the mechanism of desertification in the Sahel to be the loss of loose surface soil by wind erosion. Moreover, I developed a “do-nothing” countermeasure against desertification (“Fallow band system”) on the basis of its mechanism and proved it to be effective both for the prevention of desertification and the improvement of crop production in the Sahel. Now I am conducting a collaborative research with Research Institute for Humanity and Nature (RIHN) and investigating the effective dissemination method of “Fallow band system” using the rural sociological technique such as social network analysis.

**2.2 Culture-Based Tourism Unit**

**A Study of Volunteer Guides for Tourists** (Prof. AZUMA)

In Yokohama, Nagasaki and other Japanese cities there are some unique tourist guide organizations which run by volunteers. This study comprises the characters of organizations, including the training programs, and its members’ personal careers.

**A Study of the Relation of Urban Planning and Big Events** (Prof. AZUMA)

Big Events, such as the Olympic Games and the International Exhibition, have contributed the implementation of Urban Planning. This study demonstrates the role of big events in urban planning of Paris, Chicago, London, Berlin and Tokyo in the historical context.

**A Study of Modern Cultural Tourism in a City** (Prof. AZUMA)

Since the 19th century the urban tourism has developed with the modern arts —architecture, music, painting, literature, fashion and peoples’ way of life. This study reveals the transition of cultural tourism in a city through the history of the 20th century.

**A Study on Effects of Boredom on Revisit Intention** (Drs. SHIMIZU, KURATA, and YABE)

Attracting revisit travelers has been regarded as one of the effective measures for tourism promotion. This study deals with visitors’ revisit behavior in Japan. This study applies a new factor, which is visitors’ boredom with a destination, to a study of visitors’ revisit intention. This way, we attempt to examine its effect on visitors’ revisit intention in order to offer measures to foster their revisits. Objective index of visitors’ boredom are also explored. Two popular tourism destinations in Japan, Central Hokkaido area and Naha area in Okinawa Island, are selected as the case areas.

**Planning and Management Scheme for Transport System in Italy** (Dr. SHIMIZU)

This study focuses on planning and management scheme for transport infrastructure development in Italy. The comparative analyses between Italy and Japan is conducted from the following viewpoints; planning process, policy, geographical and socio-economic condition, and so on.

**“Urban Festival-Scape” Theory: It Contributes to the Creation of Public Spaces with a Role as Stages for Human Cultural Activities** (Drs. KAWAHARA & OKAMURA)

We have numerous traditional festivities to pray to a god or for agricultural fertility in Japan. Recently, with its regional and traditional characteristics, these festivities are considered not only as Shinto rituals but also as events to maintain and develop local communities and to vitalize tourism. We assumed that observation of “Parade type festival (A festival where mikoshi, portable shrines, floats and dancers parade through roads, key junctions and community spaces)” will suggest that urban public space structured for the purpose of traffic convenience should...
have another role as a stage for human cultural activities or as an important viewing spot.

To pursue this study, we conducted surveys on 18 famous Japanese parade type festivals, and defined 1) the landscape containing symbolic facilities and geography of festival towns, 2) meanings and characteristics of urban space transformed or appeared at the time of festivals, and 3) the space consisted of portable shrines, dancers and spectators as “Urban festival-scape” and categorized into nine patterns as follows.

(Festival-landscape, Parade Festival Area, Community-based Festival Area, Space for Performance, Space for Spectators, Festival Back-office, Conservation and Succession Festival Facilities, Festival Inspiration Facilities, and Equipment Designed with Consideration for Festivals)

In light of these research and analysis, we organized planning systems for conserving or controlling, rebuilding the above-mentioned urban festival-scape and spaces. According to this research, we hope that public spaces will be created with consideration for more flexible uses, and role as a space for human cultural activities.

Development of a New Methodology and Planning Practice of Industrial Tourism In Ota Ward, Tokyo (Drs. OKAMURA and KAWAHARA)

This research aims at making a platform for creative industry, enhancing a chance to access to manufacturing, and creating valuable urban spaces by taking a synthesizing approach of industrial development and town planning in an industrial area in Ota ward. Firstly, we conducted interviews with over 70 factories for 3 years in order to understand their wide range of attractiveness. Secondly, we made a survey regarding infrastructures and landuse. Thirdly, we conducted a field survey to collect and analyze buildings for manufacturing.

Based on these surveys we organized “Ota Open Factory” on the 4th of February in 2012 to promote not only manufacturings that have paramount techniques and products but also attractiveness of town. In the process of this event we collaborated city council and several bodies associated with manufacturing to create a new movement.

A Study on funds for Conservation Projects in Japan and UK (Dr. OKAMURA)

This study focuses on funds for conservation projects managed by public-private partnership and reveals their schemes in Japan and UK. In Japan Minto-Kiko initiated this kind of funds named “Comminuty-Based Development Funds” and I conducted several case studies in Kyoto, Joetsu, Kishiwada, and so on. On the other hand in UK English Heritage and Heritage Lottery Fund have more sophisticated schemes. I also conducted several case studies in Glasgow, Annan, and Long Eaton. Based on these surveys I discussed the necessity of understanding the historical environment comprehensively and preparing funds from both public and private bodies for improving existing schemes.

2.3 Tourism Policy and Tourism Information Unit

Study on Destination Marketing: Field study on “Aizu and Yonezawa Tourism Area”, Reported to Japanese Tourism Agency, Ministry of Land, Infrastructure, Transport and Tourism (Prof. HOMPO)

Aim of this study is firstly to verify whether Destination Marketing Theory can provide with a useful and effective framework for tourism policy planning, tourism strategy building and other policy making process, and secondly to analyze to what extent “Act on Promotion of Tourists’ visit and stay through development of Tourism Area” is useful and effective as a tool for tourism area development. This study was carried out with a sponsorship by Japanese Tourism Agency and in corroboration with University of Yamagata and Prefecture of Yamagata. This study made it clear that there remain many outstanding issues to be tackled to get an expected outcome by the Act and that Destination Marketing Theory may provide with a promising framework for tourism policy making process.

Development of a Computer-aided Interactive Tour Planner (Dr. KURATA)

Yohei Kurata with University of Tokyo and JTB, we have been working on a JST-funded research project aiming at the
sophistication of Japanese tourism-related services based on service engineering approaches. In this project, Kurata developed a computer-aided tour planner, called CT-Planner3, with which people can make their own tour plan in an explorative and efficient way, simply by interacting with a tourist map displayed on the computer screen. This tool enables the users to consult their tour plans from anywhere at any time in various languages. Accordingly, this tool is expected to be a highly helpful tool for foreign tourists who are planning to a trip to Japan.

**Semi-Automated Visualization of Tourists’ Interest on a Map (Dr. KURATA)**

Yohei Kurata Kurata developed a method for generating "potential-of-interest maps", which visualize the locations where tourists get interested in a tourist area. While existing tourist information tools have tended to provide overwhelming amount of information, this new tool aims at the "simplest" information aid, which helps tourists to find interesting resources by themselves as much as possible. Kurata demonstrated that the data of tourists’ photo-shooting locations can be applied to evaluate their interest and created a series of potential-of-interest maps from online photos with geo-tags uploaded at a photo-sharing service, Flickr. In addition, making use of these potential-of-interest maps, he implemented an Android application for tourist navigation.

**Sophistication of GPS-based Tourists’ Activity Surveys for Micro-Scale Areas (Drs. KURATA, YABE, and ARIMA)**

Junya Kawase, Naoto Yabe, and Yohei Kurata Recently, GPS loggers have become widely used for surveying tourists’ activities. However, they are primarily used to measure the time that the tourists spend at each area, even though tourists may not be involved in touristic activities during their stay. Thus, based on our GPS and video data collected at Tama zoological park, we developed a statistical model with which we can presume from a tourist’s GPS log and attributes whether he/she has been watching an attraction or not at each moment. With this technology, we will be able to evaluate the value of each attraction more precisely with less cost.

**Elicitation of Structures of Evaluations of Historical Districts Using Photographs (Dr. NAOI)**

This study employed a participatory method (the Caption Evaluation Method), which involves photographing by subjects, to elicit structures of visitors’ evaluation of historical districts as tourism destinations. The results indicate that objects of visitors’ focus and their perceptions of the objects may vary depending on whether they seek guided experiences or exploration. Resultantly, this study offers insights into visitors’ needs that could be fulfilled by the combination of tourism promotion and conservation of alleyways and by attempts to increase visitors’ spending. The outcomes of this study were published in a referred article.

**Visitors’ Evaluations of Aspects of Local Lives in Historical Districts (Dr. NAOI)**

This project aimed to elicit elements that visitors may focus on in historical districts as aspects of local lives and also to examine residents’ perceptions of objects of visitors’ gaze. The literature review indicates that visitors may pay attention to local lives because they wish to appreciate genuine objects that are not marked as must-see objects. The results of the questionnaire surveys to visitors and residents in a historical district imply the importance of visitors’ perception of the ways in which the districts are utilized. Some similarities and differences between visitors’ and residents’ views of what to consider as aspects of local lives were also elucidated. The review was published in a bulletin article whereas the outcomes of the surveys were presented at an overseas conference and in a research report.

**Models of Destination Development and Regeneration (Dr. NAOI)**

As part of a three-year project, travel magazine articles about Important Preservation Districts for Groups of Traditional Buildings (IPDGTBs) and tourism in Kurashiki-shi and Takayama-shi were subjected to content-analysis. According to the findings, historical districts are depicted not only as architectures but also in relation with human activities. Moreover, mundane aspects of local lives as well as traditional culture are described. While the articles’ focus seems to have shifted from historical elements to walking as regards Takayama-shi, the recent emphasis on accommodation and crafts in Kurashi-shi is implied. Likewise, newspaper articles about the IPDGTBs and tourism in Takayama-shi, was analysed, and the outcomes point out that tourism was often mentioned in the earlier period of stagnation while townscapes appeared frequently in the sluggish recent years.
3. Biography

3.1 Nature-Based Tourism Unit

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