

Equatorial Biomass Society

SPECIAL ISSUE

A Human-Nature Interactions of the Riverine Societies in Sarawak: A Transdisciplinary Approach

Harbour View Hotel Kuching, Sarawak Malaysia 29, June 2012

Edited by Jason Hon

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Grant-in-Aid for Scientific Research (S)

Planted Forests in Equatorial Southeast Asia:

Human-nature Interactions in High Biomass Society



Foreword

The international seminar on “Human-nature interactions of the riverine societies in Sarawak: a transdisciplinary approach” was successfully held at the Harbour View Hotel, Kuching, Sarawak, Malaysia. It was jointly organised by the Centre for Southeast Asian Studies, Kyoto University, Japan; Sarawak Forestry Corporation Sdn Bhd; and Institute of East Asian Studies, UNIMAS.

More than 60 participants attended the one-day seminar. Eight papers were presented, covering a wide spectrum of topics covering oil palm (smallholders and financial mechanisms), water chemistry, bird nest commodity chain, and flora and fauna research in natural and planted forests.

The seminar presented interim reports of the Planted Forest in Equatorial Southeast Asia: Human-nature Interactions in High Biomass Society project, which is funded by the Grant-in-Aid for Scientific Research (S) by the Japan Society for the Promotion of Science. The project started in 2010, and runs for five years.

The project is supported by the Sarawak State Planning Unit and collaborates with local agencies and companies such as Institute of East Asian Studies, UNIMAS; Sarawak Forestry Corporation; Department of Forests, Sarawak; Sarawak Planted Forest Sdn Bhd; Grand Perfect Sdn Bhd; Keresia Plantations Sdn Bhd; Keresia Mills Sdn Bhd; and Zedtee Sdn Bhd.

This proceeding is a compilation of abstracts and comments made during the one-day seminar. A list of participants’ names and their affiliations is also included in the Appendices. For further information and updates on the project, please visit <http://biomasssociety.org/en/>.

Jason Hon
Graduate School of Global Environmental Studies,
Kyoto University

Programme



Opening Ceremony

- 8.30 am Arrival of invited guests and members of the media
- 9.00 am Arrival of YBhg Tuan Haji Ali Yusop
Director of Forests
Managing Director / CEO, SARAWAK FORESTRY Corporation Sdn Bhd
- Welcome Speech by Prof. Dr Noboru Ishikawa, Centre for Southeast Asian Studies,
Kyoto University
- Officiating Address by YBhg Tuan Haji Ali Yusop
- 10.00 am Media Conference

Programme

Session I

Chairperson: Prof. Datuk Dr Abdul Rashid Abdullah, UNIMAS

- 10:00 – 10:30 : Potentiality of oil palm small holdings in rural communities in Sarawak, Malaysia
Ryoji Soda¹ & Yumi Kato²
1. Osaka City University, Japan;
2. Research Institute for Humanity & Nature, Kyoto, Japan
- 10:30 – 11:00 : Material and financial metabolism in oil palm production:
a company's case in Sarawak, Malaysia
Yucho Sadamichi¹ & Fumikazu Ubukata²
1. National Institute of Advanced Industrial Science & Technology, Japan;
2. Okayama University, Japan
- 11:00 – 11:30 : Influence of land-use on stream water chemistry in Bintulu Division, Sarawak,
Malaysia: preliminary results of snap-shot sampling
Naoko Tokuchi¹, Keitaro Fukushima¹, Hiromitsu Samejima² & Osamu Kozan²
1. Field Science Education & Research Center, Kyoto University, Japan;
2. Centre for Southeast Asian Studies, Kyoto University, Japan
- 11:30 – 12:00 : The birds' nests commodity chain between Sarawak and East Asia
Daniel Chew¹ & Tetsu Ichikawa²
1. Institute of East Asian Studies, UNIMAS;
2. Rikkyo University, Japan
- 12:05 – 14:30 : Lunch break and Friday prayers

Session II

Chairperson : Mr Oswald Braken Tisen, SFC

- 14:30 – 15:00 : Wildlife and salt licks inside a production forest environment
Jason Hon
Graduate School of Global Environmental Studies, Kyoto University, Japan
- 15:00 – 15:30 : Inventory of wildlife for sustainable forest management
Hiromitsu Samejima
Centre for Southeast Asian Studies, Kyoto University, Japan
- 15:30 – 16:00 : Biodiversity conservation research projects in Sarawak Planted Forest
(Pulp and Paper) Project, Bintulu, Sarawak
Joanes Unggang¹ & Joseph Jawa²
1. Conservation Dept, Grand Perfect Sdn Bhd, Bintulu, Sarawak, Malaysia;
2. Sarawak Planted Forest Sdn Bhd, Malaysia
- 16:00 – 16:30 : Tree diversity in Anap Muput Forest Management Unit, Bintulu, Sarawak, Malaysia
Malcom Demies¹, Rantai Jawa¹ & Hiromitsu Samejima²
1. Sarawak Forestry Corporation, Sarawak, Malaysia;
2. Centre for Southeast Asian Studies, Kyoto University, Japan
- 16:30 – 17:00 : Discussions / Closing remarks / Tea-break
- 17:00 : End

**Officiating Address by
YBHG. TUAN HAJI ALI YUSOP
Director of Forests, Managing Director / CEO, SARAWAK FORESTRY**



On behalf of SARAWAK FORESTRY, it gives me great pleasure to welcome all great people here (because you are dedicated in your research – you even leave your family behind to fulfil your ambition to be researchers) – the participants and delegates, researchers, scientists, academicians and scholars to Kuching. I would like to extend my warmest greetings to everyone present here, especially to our guests from Japan who have travelled a long journey to be with us today. Selamat Datang.

I am delighted to be here in a meeting or rather, an intellectual discourse which is significantly important. This meeting is also exquisite as we could see a melting pot of scientists from two great nations – the Japanese and the Malaysians (I hope there will be more from other countries). For that I must commend the great efforts put together by the collaboration of three great organisations – Kyoto University, UNIMAS, and SARAWAK FORESTRY Corporation.

I also wish to congratulate the effort for putting together a useful seminar where we can all come together and deliberate on a very pertinent issue, encompassing a multi-disciplinary approach on the societies of Sarawak. As we all know, Sarawak has been well-known for its diverse culture, abundant natural resources and high assemblage of biodiversity. In terms of cultural diversity, there are over 30 ethnic groups, each with their unique customs, cultures and livelihood. All in all, they speak close to 50 different languages and dialects. These communities are spread out all over Sarawak, along the coasts, in the interior, the hinterlands or along the rivers.

Ladies and Gentlemen,

The establishments of most settlements in Sarawak begun from small homesteads that sprung along the major river courses. These communities rely on the forests for their livelihood, where they source materials for building their houses, huts, ‘pondok’, ‘sulap’, collect jungle produce and hunt wildlife for subsistence protein. Here, they also work on their fertile lands to plant padi and other perennial crops, for their own consumptions or to be traded with merchants who travel along rivers. In the old days, it would take you more than two or three days using ‘tuk-tuk’ to travel and the Chinese traders went all the way to the ‘ulu’ to trade.

Historically, rivers have been the important features that mapped the transformation of communities in Sarawak. Over time, use of land started to change but the forests and surrounding lands remain an integral part of the people’s life.

Our quest for knowledge about our forest is a dynamic and on-going process, be it the need to understand how local communities depend on them, or the need to improve forests conditions for wildlife continued existence, or to manage them to be sustainably and economically viable for the State in terms of timber production and other forms of land use.

Ladies and Gentlemen,

We are proud to have a forest that is teeming with biological diversity – home to tens of thousands of species of animals, plants, fungi and other life forms. As a custodian to the forests of Sarawak, SARAWAK FORESTRY Corporation will safeguard and sustainably manage them for the betterment of society and future generations. The saying goes, “We don’t own this land, this forest. We borrow them from our future generation.”

In Sarawak, we have over 700,000 hectares of Totally Protected Areas, encompassing of 25 national parks, 4 wildlife sanctuaries and 5 nature reserves. They are home to globally significant species such as orangutan, proboscis monkey, bay cat, just to name a few. SARAWAK FORESTRY Corporation has been entrusted to oversee the management of our protected areas and unique wildlife.

In terms of forestry, it has been and will continue to be a major economic activity for Sarawak. Forest plantations are also being established to meet the increasing demand for global timber produce. To ensure sustainability, the government promotes good forestry practices through sustainable forest management. SARAWAK FORESTRY Corporation is committed to act responsibly to ensure that the forestry industry in Sarawak will be managed in a sustainable manner in accordance with international standards.

Ladies and Gentlemen,

Today’s seminar brings together a wide array of research topics that will be presented. The Sarawak Government has always opens its doors to welcome researchers to work in our unique forests and with our hospitable communities.

The Forest Department Sarawak and SARAWAK FORESTRY Corporation have engaged in research collaborations with various institutions, both locally and internationally. Some of the members from this group have been conducting various researches and studies in Sarawak for over 20 years. With no doubt, this is a testament of our support for academic research in Sarawak.

In return, our staff have also benefitted from academic exchange programmes with their counterparts, and even participated in training abroad, some of which were with the Japanese institutions. We congratulate and thank these Japanese institutions for providing the avenues for our officers to join and gain knowledge in Japan. I would like to encourage foreign researchers to continue engaging with our local people, and jointly share the benefits of your research with them.

Ladies and Gentlemen,

Today, we are glad to see a gathering of a wide spectrum of fields, consisting of social and natural scientists. This project, Human-Nature Interactions of the Riverine Societies in Sarawak: A Trans-disciplinary Approach, runs for 5 years, and started 2 years ago, in 2010. Trans-disciplinary approach is not an easy subject. There are many disciplines to take into account and we must not lose sight or focus on single issue or discipline only. It is timely and befitting, that the interim report will be presented today, halfway through the project period. This

seminar provides the best opportunity for positive exchanges of ideas between Sarawak and Japanese institutions.

To the delegates, especially from the Kyoto University (and other Japanese institutions), please make yourself at home and I hope you will enjoy your stay in this beautiful Kuching. I wish you a successful deliberation and a fruitful seminar ahead.

With that note, I DECLARE THAT THE SEMINAR IS OFFICIALLY OPENED.

Thank you.



Presentation 1

Potentiality of oil palm small holdings in rural communities in Sarawak, Malaysia

Ryoji Soda¹ & Yumi Kato²

1. Osaka City University, Japan

2. Research Institute for Humanity & Nature, Kyoto, Japan

Abstract

Oil palm industry has been rapidly growing in Indonesia and Malaysia, which take first and second ranks of its production and export. The growth of the industry has been driven mainly by large-scale private and government companies, whereas the increase in oil palm smallholding among the indigenous communities has become another vital factor. Previous studies on oil palm, however, mainly focused on the expansion of plantation industries, neglecting the emergence of oil palm smallholders and its socio-economic impacts on rural communities.

The purposes of this study are as follows:

- to make clear the negative and positive aspects of the boom in oil palm planting among rural indigenous communities;
- to consider the changing relations between large-scale companies and smallholders in terms of newly-introduced RSPO certification;
- to evaluate its social and economic impacts on the rural longhouse communities.

The case study was conducted in several longhouse communities in the Bintulu Division, Sarawak, Malaysia, a frontier zone of oil palm industry, where the production by both large-scale companies and smallholders has been rapidly increasing.

Comments

Nelson Ian Mersat

- Is there any conflict or problem between the case company and smallholders?
- The Salcra scheme that was started 20 years ago failed because majority of the participants who were Ibans could not cope with the regimented lifestyles in the oil palm plantation? What are your comments on this?

Ryoji Soda:

- Some smallholders complaint about the low rate of compensation or 'sagu hati'. However, even such people appreciate that the case company does not do excessive development without consensus of the local people. Therefore, so far there have not been any remarkable conflicts between them.
- I do not know much about Salcra case. According to what I was informed, the problem began after the local people (natives) were given legal land titles and a few of them gave up growing oil palm. Instead, they sold their lands to the Chinese merchants. In the case in Bintulu, they are still keen planting oil palm on their NCR land partly because they want secure their land.

Jayl Langub:

- From my observations, in the case study of K company, there is a sense of ownership of the small holders.

Presentation 2

Material and financial metabolism in oil palm production: a company's case in Sarawak, Malaysia

Yucho Sadamichi¹ & Fumikazu Ubukata²

1. National Institute of Advanced Industrial Science & Technology, Japan

2. Okayama University, Japan

Abstract

Oil palm industry is one of the important agro-industries in Sarawak and Malaysia. It has been steadily developed during the past several decades, and thanks to the recent biofuel boom in northern countries, its industrial potential is expanding further. This rapid expansion, however, has also raised social and environmental concerns. How can the industry seek the betterment of the mode of production? Taking the case of one plantation company and a smallholder in Bintulu District, Sarawak, Malaysia, this study examines both material and financial flows of oil palm production, and discusses some of the potentials and constraints toward a sustainable and socially harmonized development of the industry.

Comments

Oswald Braken Tisen:

- Would you consider spinoff effect of money generated from the oil palm and smallholders' industry? The industry employs a lot of foreigners and they send back moneys earned (and will have little effect on the local economy), whereas in the case of smallholders, the money earned is spent locally and will have greater local spinoff effect. Would you consider that as an important part of your study?

Fumikazu Ubukata:

- I agree on the spinoff effect created by local smallholders. To evaluate this, it has to be part of the social impact analysis and we will collaborate with the previous study (Kato & Soda).

Presentation 3

Influence of land-use on stream water chemistry in Bintulu Division, Sarawak, Malaysia: preliminary results of snap-shot sampling

Naoko Tokuchi¹, Keitaro Fukushima¹, Hiromitsu Samejima² & Osamu Kozan²

1. Field Science Education & Research Center, Kyoto University, Japan

2. Centre for Southeast Asian Studies, Kyoto University, Japan

Abstract

Recently land-use has dramatically changed in Sarawak from natural forests to oil palm and acacia plantation etc. It causes changes in the environment; air, soil and water. The stream water is especially important in this region, because there are many people live in longhouses along the rivers and use the water for daily life. However, the information of the influences of land-use change on the stream water is not enough in Sarawak. To clarify the influences of land-use change on stream flows and the factors determining stream water chemistry, we have studied the Kemena (including Jelalong, Pandan and Binyo) and Tatau (including Anap) rivers since 2010. In this presentation we compare and discuss the stream water chemistry among the different land-use in Bintulu Division (Kemena-Tatau river basins); oil palm plantation, acacia plantation and the natural forest under sustainable forest management. Preliminary results showed that there was a clear difference in the stream water chemistry among the watersheds covered by different land-use. However the stream water chemistry was also variable among the areas.

Comments

Charles Leh:

- Place sampling points at interval distances downstream or upstream along the river to determine (point sources of discharge) or you could also consider incorporating the study of biological indicators such as fish or other aquatic invertebrates. The knowledge of bio-indicator (will be helpful) for the local and common people e.g. from the village to tell from visual observations about the quality of river
- Nitrate is a good indicator. There (could be) a relationship between water quality and the insects (from river) which are consumed by swiftlets. Nitrates in the water are taken up by swiftlets through the food chain, and this resulted in high concentration of nitrite and nitrate in swiftlets. Can you consider microfauna studies in your research?

Naoko Tokuchi:

- Thank you. I would like to include microfauna studies and look forward to future collaboration / assistance.

Presentation 4

The birds' nests commodity chain between Sarawak and east Asia

Daniel Chew¹ & Tetsu Ichikawa²

1. Institute of East Asian Studies, UNIMAS

2. Rikkyo University, Japan

Abstract

Birds' nests have since the distant past been collected in Borneo and sent to China as a highly sought after commodity. Birds' nests are arguably one of the most valuable and expensive animal products, prized for its perceived culinary and health benefits, and status value.

Sarawak is one of the sources of nests supply, with Hong Kong a leading world importer which re-distributes the product to the Chinese mainland and to the rest of the world where the Chinese diaspora resides. In this paper, the authors use the conceptual framework of the commodity chain to analyze the complex overlays and relationships in the different stages of the commodity procurement, processing, trading and consumption.

The two approaches to the commodity chain, while not eschewing value added production, are those of cultural anthropology and political economy. What facilitates the different stages of the commodity chain, starting with Sarawak, are the social and economic relationships between the Chinese towkay/financier and indigenous cave owner/collector, and within the Chinese trading diasporic network from Sarawak to Hong Kong, China, and including Indonesia, the notion of "guan xi" in trust and relationships which wheels the commerce of demand and supply of birds' nests. As the major end point of consumption is the big mainland Chinese market, Chinese government policies which intervene in the market, can affect the chain of demand and supply.

Lastly, as a commodity which responds to its high monetary value, the supply of birds' nests has responded to ecological shifts, switching from unsustainable wild harvesting in caves to the 'farming' of nests in man built structures where swiftlets are encouraged to build nests.

Comments

Charles Leh:

- Focus study within Sarawak to come up with recommendations for swiftlet management and economic development in Tatau and Kemena regions, and recommend how operators can shift from tradition always of collecting nests, which may have an effect on the quality as nests from Sarawak fail to meet the quality requirements of China. This study can perhaps look into water quality and the community as a wholer

Daniel Chew:

- This study is much bigger than just focussing on the local community chain, and a nexus of connection between global and local, hence the need to include China

Braken Tisen:

- The study should in fact expand to beyond China and Hong Kong to include Australia and New York (United States). We need to add more values to bird nests from Sarawak rather than restricting it to the traditional trade routes

Jayl Langub:

- What do the public think about (swiftlet houses) in town areas, especially the environmental impacts and what are the councils reactions to this?

Daniel Chew:

- From news reports, this is a source of conflicts (which however) is not taken up by the authorities.



Presentation 5

Wildlife and salt licks inside a production forest environment

Jason Hon

Graduate School of Global Environmental Studies, Kyoto University, Japan

Abstract

The island of Borneo is regarded as one of the most biologically rich region in the world, containing some of the oldest remaining tropical rain forests. However, it also suffers high levels of deforestation and degradation to meet the demands for timber extraction and agricultural activities. In Sarawak, areas gazetted as permanent forests account for 35.2% of the land area, much of which are already opened up for timber extraction.

On the other hand, protected area only constitute to less than 5% of land area, and are mostly sparsely distributed. Therefore, forests outside these protected areas are crucial towards the conservation of wildlife. For long-term wildlife conservation to remain significant, attentions must focus on how logging activities are carried out and how habitats for wildlife within these logging concession areas are being managed.

A study was carried out in a logging concession in central Sarawak, which practices sustainable forest management. The objectives were to document the composition of wildlife, their use of key habitat sites and the effects of forest disturbances. Camera trapping exercise was carried out from August 2010 to March 2011, and is still ongoing. Preliminary results indicated that older logged over forests and riparian strips contained higher number of species of animals. The detection probability of wildlife by camera traps is affected by the proximity to villages, indicating the effects of hunting pressures on animals' behaviour. In area nearer to villages, the relative encounter rates for large ungulates such as sambar deer and bearded pig were lower than sites that were not accessible by the local people. Overall, 19 species of animals were recorded to have visited salt licks, with the ungulates recorded the highest numbers. Patch occupancies by sambar deer *Rusa unicolor* and mousedeer *Tragulus* spp. were higher nearer to salt licks than further away. The decrease in patch occupancy probabilities away from the salt licks was more drastic for the smaller bodied mousedeer as compared to the larger sambar deer. In forests that were logged seven years ago and left behind to recover, the Bornean bay cat *Catopuma badia*, a globally significant species was recorded. This result indicates the importance of sustainable forest management and some of the roles logging companies can engage in towards the conservation of wildlife in a production forest environment.

Comments

Wong Ing Yung:

- In the mission towards forest certification exercise, as a logging manager, we don't have the ability to understand what is required for apart from what is already prescribed for in the Wildlife Masterplan (WMP) and Forest Management Plan (FMP). How can we engage Protection Areas and Biodiversity Conservation Unit (PABC) and this study in our certification exercise?

Oswald Braken Tisen:

- From the wildlife management point of view, Sarawak has laws and policies such as Wildlife Protection Ordinance (WPO) and WMP. However, they are based on research findings that are more than 10 years ago. With new research findings, there is opportunity for PABC to relook at what are the best options and solutions for wildlife in a win-win situation and to pass on the knowledge to timber managers.

Henry Chan:

- Your study concluded that there is a possibility for a well managed forest to enable wildlife to sustain. Perhaps a study should be carried out in a protected area where there is no logging activity for more valid comparison.

Jason Hon:

- This study is to show that SFM may hold answer to long term conservation of wildlife. After all, Sarawak is many years behind in trying to go for SFM and it is time that we push for it by giving more encouragements to timber managers.

Oswald Braken Tisen:

- To make a note, some countries do not have protected area systems but still have wildlife. Thus, we would like to see how wildlife can continue to exist (in non-protected areas).

Jayl Langub:

- How important is salt lick to animals and is there a law to protect it?

Jason Hon:

- There is none in Sarawak and not mentioned in the ordinance. However, its protection is prescribed for in the FMP following SFM under high conservation value forests (HCVF) and is also mentioned in the WMP.

Oswald Braken Tisen:

- The WMP is a legal policy adopted by the Sarawak government and there is a legal protection. We need further research on how to reconcile current knowledge with existing policy.



Presentation 6

Inventory of wildlife for sustainable forest management

Hiromitsu Samejima

Centre for Southeast Asian Studies, Kyoto University, Japan

Abstract

Borneo Island is one of the richest regions of biodiversity on earth. Biodiversity produces many resources for the local communities and societies, and have contributed to ecological and social resilience. However, most of area is allocated for timber production now, thus sustainable management of natural forests is the pragmatic and effective measure to maintain the regional biodiversity. To archive biodiversity conservation through sustainable forest management, the biodiversity status should be verified and monitored.

In Anap-Muput Forest Management Unit, eight sampling plots were established. Each plot is one kilometer in diameter and has 8-10 random points inside. Infra-red sensor cameras were installed at each point which took images of animals passing in front of the cameras. The survey was carried out for 10 months. A total of 2,730 images of 29 species including many endangered species we recorded.

Three main points of the results were:

1. Current forest management in Anap-Muput is working well for the conservation of animal biodiversity. Species richness, total trapping rate and species composition between before and after logging were not significantly different.
2. Muntjacs (red muntjac and yellow muntjac) and yellow throated marten were vulnerable species to the impacts of logging. The trapping rates of these species were well correlated with above ground biomass (botanical plots were also established at all sampling plots). These species can be good indicators to monitor logging impact on biodiversity.
3. Kerangas area may have unique species composition. Even though only one plot was established in the Kerangas forest, species composition was different from the other plots. The trapping rates of bearded pig and sambar deer were low. A unique species, the otter civet was recorded from this area. The Kerangas area should be managed as a different unit for conservation in the forest management.

Comments

Valentine Risel:

- You mentioned that muntjacs are vulnerable to logging. Please clarify on this

Hiromitsu Samejima:

- The trapping rate of muntjac is correlated to above ground biomass. However, the recently logged sites still have above ground biomass exceeding 200 tonnes per ha, which is still high and more than enough for muntjacs.

Wong Ing Yung:

- What is the progress on the biomass estimation and the implications of this study? Does it show that the 200 tonnes per ha threshold is sufficient for wildlife?
- In relations to similar studies done at other sites in Borneo, are the results comparable in term of scale?

Hiromitsu Samejima:

- The threshold of 200 tonnes per ha is for certain species such as muntjacs and yellow throated marten in sustainably managed forests. Other vegetation type such as kerangas forest have much lower above ground biomass.
- Other similar studies are also being carried out in other sites in Borneo and comparisons will be made to take into considerations of other factors such as terrain and management practices.

Charles Leh:

- There are two species of muntjacs and they use different types of forests. In this case, it is not a good indicator species. Logging may help some species to proliferate (such as muntjacs). The study should consider hunting pressures and determine how common species breed and how they can contribute towards the sustainability of the local community.

Hiromitsu Samejima:

- I am also interested to see how wild boar contribute to the subsistence of the local communities and aim to conduct interviews in several selected villages to document their meals and hunting activities.

Oswald Braken Tisen:

- There are pertinent points from the two presentations (by Jason Hon and Hiromitsu Samejima). In these studies, we note that: we need to know the critical distance of salt lick to wildlife; we need to know what are the key indicator species of forest health; and human component such as hunting is important in terms of management of wildlife

Presentation 7

Biodiversity conservation research projects in Sarawak Planted Forest (Pulp and Paper) Project, Bintulu, Sarawak

Joanes Unggang¹ & Joseph Jawa²

1. Conservation Dept, Grand Perfect Sdn Bhd, Bintulu, Sarawak, Malaysia

2. Sarawak Planted Forest Sdn Bhd, Malaysia

Abstract

The Sarawak Planted Forest (Pulp and Paper) Project (SPFP is a tree plantation project), located in the Bintulu Division of Sarawak, Malaysia within a gently rolling lowland landscape, and apart from the bordering south-eastern ridges (of the northeast to southwest regional strike), most topological features rarely exceed 200m in elevation. Conservation programme was initiated in 2004 to implement biodiversity conservation within SPFP. Conservation programme conducts research collaboration works with various international and local institutions. Transfers of skills and technology from the researchers to Conservation Programme staff are vital for SPFP. Researches conducted are mainly on monitoring of Flora and Fauna species and inventory of species for High Conservation Value Forest (HCVF) identification. Current results have also helped us to understand more on wildlife and landscape alteration correlation within a tree plantation. There are still a lot of potential researches that can be done in SPFP especially in understanding the effectiveness of conservation effort done in the project.

Comments

Jayl Langub:

- Do you consider (bearded) pig wallows and migration routes important in your research (planted forest area)?

Joanes Unggang:

- We have collected many bearded pig skulls from villages and have kept them for further research. We welcome any study on this.
- Previous study has shown that the population of bearded pig was estimated at 30,000 individuals. Bearded pigs also create and use wallows which were formed by tire tracks during planting exercise. However, there are no studies done to date. On bearded pig migration, tracking the animals is necessary but we have not heard of any news of mass migration of bearded pigs in the plantation yet.

Wong Ing Yung:

- For the purpose of forest certification, we (AMFMU) have to rely on PABC and researchers to address the indicators and verifiers. This is an indication of need in relation to forest concession area (as compared to Sarawak Planted Forest (SPF) which has the support from the government).

Joanes Unggang:

- It is not a big investment to set up a conservation unit. SPF has five people working in the conservation unit and manages over 420,000 ha of area.

Presentation 8

Tree diversity in Anap Muput Forest Management Unit, Bintulu, Sarawak, Malaysia

Malcom Demies¹, Rantai Jawa¹ & Hiromitsu Samejima²

1. Sarawak Forestry Corporation, Sarawak, Malaysia

2. Centre for Southeast Asian Studies, Kyoto University, Japan

Abstract

The Anap Muput Forest Management Unit (FMU) managed by Zedtee Sdn. Bhd. is located in the Tatau District of Bintulu Division. The study was undertaken to determine the diversity and species composition of trees in Anap Muput FMU. 17 circular plots with 20 metres diameter were established. A total number of 1,660 individual trees comprising 435 species from 57 families and 146 genera were recorded. Dipterocarpaceae, Euphorbiaceae, Myrtaceae, Actinidiaceae and Myristicaceae are the dominant families revealed from the study area, *Macaranga hosei* was the most numerous species with 41 individuals per hectare. There were 777 individual trees per hectare. Most of the tree species and individual trees enumerated were from the middle storey. The significance of findings will be discussed in the paper.

Comments

Henry Chan:

- Will the results be linked to the wildlife component?

Malcom Demies:

- The data at this stage is insufficient and the presentation today is only a preliminary finding.
Yes, it will be linked to the wildlife component in the future.

Valentine Risel:

- *Macaranga* spp. appeared to be very common. What does this imply?

Malcom Demies:

- The plots were set up randomly. The high numbers of *Macaranga* spp. show that the forests have been disturbed before, perhaps more than 10 years ago in order for the trees to grow to their current size.

Discussion Forum

Jason Hon (convener):

- We would like to have opinions from the floor on what the project have not achieved? Are there any knowledge gaps that need to be addressed?
- What are the future directions for this project?

Wong Ing Yung:

- Collaboration is a necessity for people to actually deal with nature and ecosystems. The number of requirements placed on a particular person or department for forest certification is quite daunting. The Sarawak Forest Department may now play the principle in taking the leadership to provide enabling condition and engagement with stakeholders to move the certification process forward. The support and collaboration with other state agencies such as PABC, SFC, Kyoto University (consortium of Japanese institutions) and other research institutions is vital, as there are gaps in our (forest manager) ability.

Oswald Braken Tisen:

- Need to share all information from studies carried out, where they can be merged and managed at a landscape level.
- In the previous Hornbill 2009 Workshop, the theme focussed on ecosystem management at landscape level and one of the issues discussed was SFM and sustainable use of resources. Sound scientific based management prescriptions are needed and it would be helpful to know how this research (by Japanese institutions) can be consolidated to be made available for managers of logging concession and protected areas.

Henry Chan:

- The importance of this on-going research is based on a landscape perspective approach (between Kemena and Tatau watersheds). We also need to look at policies (on how the state divides its land use). This study should also integrate social sciences and natural sciences. WWF-Sarawak has included cross-cutting disciplines in its 2012-2020 conservation strategy, and would like to invite the Japanese research group to collaborate and present your results to us.

Noboru Ishikawa:

- The preliminary findings of the research have been presented in today's seminar. This seminar is to let you all know what we have done. The next step is to involve relevant agencies and see how we can collaborate on further projects.
- We would like to learn as much as we can from our collaborators and stakeholders, and we acknowledge the importance of knowledge transfer to people on the ground. Please advice on how we (Japanese institutions) can assist in regards to policy matters in terms of practical ideas and we are more than willing to collaborate.
- Our project still have three more years and we will return and present the final finding at the end of the project (in 2015).

Jason Hon :

- Prof Ishikawa brought up a pertinent issue about policy, and being an outsider (Japanese institutions), we have to be careful on how to address this issue. Perhaps at this point, is not a good time to seek the answer but if this is something in regards to policy that you can share with us, please let us know.

Abdul Aziz bin Zainal Abidin:

- We are happy to be here. The results obtained from these studies are good for (the company) and oil palm plantation smallholders and help bring us to the next level. (The company) is gearing towards ISCC (International Sustainability and Carbon Certification) and will continue to welcome researchers to the site as there are many more to do in terms of research.

Wong Ing Yung:

- In relation to sustainability and in reference to the earlier presentation, the oil palm development in Sarawak is a major undertaking a certainly a very important human-nature interaction.
- In regards to LPF, 20% of the licensed area can be converted to oil palm but limited to one cutting cycle. In relation to small holders and (the operators), what shall happen after the expiration period (25 years later) must be taken into considerations by the researchers and how to affect government policies in relation to land development in the long term? This is a pertinent issue that needs to be addressed in relation to sustainability (of oil palm industry within the LPF) and the effects on small-holders.

Jason Hon:

- Mr Wong brought a pertinent issue and touching on policy. We have to consider about what happens to “life after planted forest (after 25 years)”. We hope the research team can think about this in our research.

Closing Remarks

Noboru Ishikawa:

- I am so happy to see people staying back since the morning. We have learnt a lot as much as I hoped that you have learnt from our presentations.
- Today seminar is an interim report and we promise that we will come back again (to present the final outcome).
- Thank you very much.

Press Conference



From left: Prof Dr Noboru Ishikawa, Tuan Hj Ali Yusop, Prof Datuk Dr Abdul Rashid Abdullah

Group Photo



Front row from left:

Evelyn Jugi, Naoko Tokuchi, Wong Ing Yung, Yumi Kato, Abdul Aziz, Ryoji Soda, Noboru Ishikawa, Malcom Demise, Oswald Braken Tisen, Lucy Chong, Alex Jukie, Belden Gimán, Margarita Naming, Melvin Goh

Back row from left:

Alvin Teo, Calvin Ligong, Logie Seman, Jocelyn Jonip, Henry Chan, Jason Hon, Yucho Sadamichi, Het Kallian, Fumikazu Ubukata, Daniel Chew, Jayl Langub, Keitaro Fukushima, Joanes Unggang, Anthony Shabolt, Hiromitsu Samejima.

Photo credit: Sarawak Forestry Corp.

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INTERNATIONAL SEMINAR

Human Nature Interactions of the Riverine Societies in Sarawak
A Transdisciplinary Approach

*June 29, 2012
Harbour View Hotel, Kuching*

Jointly organised by
Centre for Southeast Asian Studies, Kyoto University
SARAWAK FORESTRY Corporation
Institute of East Asian Studies, UNIMAS