

**Report on proceedings at the first Kyoto University – LIPI - Southeast Asian Forum:
In search of new paradigm on sustainable humansphere in Indonesia**

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Date: November 26th – 27th, 2007

Venue: PDII Building 2nd floor, LIPI, Jakarta Indonesia

This two day forum can be seen as the first concrete project of the collaboration between Kyoto University and LIPI. The forum explored the concept of a “Sustainable Humansphere” as well as related themes such as “Bio-energy for Community” and the “Forest as Humansphere”.

Day one (November 26th, 2007)

Opening ceremony [09.30-10.00]

The forum was opened by 4 delegates from the participating organizations. Three of the addresses were delivered at the Forum by: the vice president of Kyoto University, Mr. Masato Kitani; the president of HAKU (Kyoto University Alumni Association in Indonesia), Prof. Supiandi Sabiham; and the deputy chairman of Life Science, LIPI, Prof. Endang Sukara. The representative of CSEAS, Prof. Yoko Hayami, finally, addressed the forum via a live Internet connection from the CSEAS office in Kyoto.

Keynote speech [10.00-11.30]

The morning session consisted of three keynote speeches.

1. Prof. Kaoru Sugihara from CSEAS Kyoto University addressed the forum on the topic of: *The humansphere-sustainable path of economic development; A global historical perspective*. His speech outlined some of the key ideas behind the Global COE research program on sustainability in Asia and Africa and suggested that one of the key topics for Asian and African area studies today is to create an interdisciplinary framework under which to promote sustainability of the humansphere in concrete terms.
2. Prof. Endang Sukara (Deputy of Life Science, LIPI) talked on the subject of: *Mainstreaming forest biological diversity*. His speech highlighted that the biodiversity richness in Indonesia is in many cases yet to be documented properly, and as such unexplored. He also outlined the threats to the existence of this biodiversity, such as forest conversion to support short term economy benefit, illegal logging, poaching, fires, etc.
3. Prof. Narifumi Tachimoto from the Research Institute for Humanity and Nature lastly, discussed: *Futurability of humansphere; Toward global humanics of the Environment*. In his speech he sought to approach environmental-humanic global research from a philosophical standpoint. He argued that the global nature of humanity’s relationship to the environment makes it possible to draw up a plan in building future societies’ potential.

Grand session: Towards harmony between environment and economy: in search of sustainable humansphere in Indonesia [12.30-14.00]

Four panelist delivered presentations on related topics.

1. Prof. Kosuke Mizuno, director of CSEAS, Kyoto University delivered a presentation with the title: *In search of new direction of development in Indonesia; Possibility of sustainable humansphere type development in Indonesia*. In his presentation he attempted to show a new possible direction for Indonesian development, referring in

particular to the concept of sustainable humanosphere that the G-COE research program intends to develop.

2. Prof. Herman Hidayat, from the Research Center for Society and Culture, LIPI, delivered a presentation with the title: *National park management in local autonomy: from the viewpoint of political ecology (case study of Tanjung Putting, Central Kalimantan)*. His presentation discussed the conflicts occurring between central and local authorities in managing the national parks of Indonesia. He also looked at the fascinating prospects of “collaborative management”, currently promoted as an alternative concept in managing national parks, as a solution to these conflicts.
3. Prof. Shuichi Kawai from the Research Institute of Sustainable Humanosphere (RISH), Kyoto University, delivered a presentation with the title: *Seeking Sustainable Society through Science and Technology*. In his presentation he showed the various activities undertaken by RISH in Indonesia (in the field) and Japan (in the laboratory). RISH conducts research in industrial plantation forests of tropical trees in Southeast Asia and organizes inter-disciplinary research projects.
4. Prof. M. Bismark from the Forest and Nature Conservation Research and Development Center held a presentation entitled: *Improvement of potency and rehabilitation of degraded forest through community forest management*. Against the background of community forests in Java, he argued that the function of the community forest is very important as a forest conservation tool, for forest rehabilitation, as well as for improving the economy of the communities involved, especially in agro-forestry located in the buffer zones of conservation areas.

Comments [14.30-15.00]

Prof. Kaoru Sugihara and Dr. Anita Permadi commented on the presentations given during the mornings’ Grand Session.

Prof. Kaoru Sugihara:

- Looking at nature from man’s perspective, it is still primarily seen as capital in land and as a means to create labor, thus nature is changed through differing land-use and labor. There remains a need for comprehensive revision of the economical situation in order to create better, and better sustainable, development.
- In the role of small business versus large-scale business: historically this debate has taken the direction where smaller units may perform better in integrating the welfare of the people and the welfare of the environment.
- In the management of national park management, the approach of political ecology and the interaction of many stakeholders hold interesting possibilities. In general, central and local governments need to institute a “clean” form of government, and to put in place transparent and democratic mechanism to make people agree in issues such as biodiversity. More collaboration efforts are a necessity.
- The conclusions on community forests are positive, but the question remains to what extent this solution can actually encounter the massive forest destruction as a whole.

Dr. Anita Permadi:

- The most important issue is the need for Indonesia to clarify the direction of the country’s future development, taking into consideration matters of decentralization and democratization. The role of these concepts in further development need to be discussed in greater detail to make possible the drawing up of a grand scenario for a clearer direction of the country’s development.
- Kyoto University (RISH) has made a progressive step in research development and technology. The question remains however, what benefits these activities hold for local communities.

- In community involvement in forest management, research activities should be transferred more to address practical issues, with a need to emphasize the importance of the people/local communities.
- This event is to develop better cooperation between LIPI and Kyoto University, to improve capacity building among the Indonesian-Japanese scientist society and to make a better grand scenario for forest development.

Panel Discussion [15.30-17.00]

Moderated by Prof. Bambang Subiyanto (LIPI) and Prof. Kenichi Abe (Center for Integrated Area Studies, Kyoto University).

Two questions/comments were raised by CSEAS participants from Kyoto (via a live internet connection).

1. Prof. Ikrar Nusa Bhakti: why are the research activities of RISH conducted in acacia forests? Why do they not extent to other areas such natural forests and swamp forests? Indonesia has many other types of landscape that are believed to have sufficient potential for exploration.
2. Dr. Dewi S Sitepu furthermore remarked that poverty problems drive nature problems.

Day two (November 27th, 2007)

Scientific session 1: Bio-energy for community [09.30-12.00]

Moderated by Ms. Nuengnam Navaboonniyo (Kyoto University Alumnae from Thailand) and Prof. Bambang Prasetya (Research Center for Biotechnology, LIPI).

Four panelists delivered a presentation:

1. Prof. Supiandi Sabiham from Bogor Agricultural University held a presentation entitled: *Prospect of bio-energy development in rural area*. In his presentation he argued that the development of bio-energy for rural communities is in part solving the problem of energy scarcity, and that the development of bio-energy is expected to have multiple effects in enhancing rural economic activities.
2. Prof. Takashi Watanabe (RISH, Kyoto University) delivered presentation entitled: *Lignocellulosic biorefinery for sustainable society in Southeast Asia*. He discussed the potential of lignocellulosic bio-refinery to replace oil refinery. It has a great potential to accelerate regional economic growth and to generate biomass-based societies in Southeast Asia.
3. Prof. Gede Wibawa (Indonesian Oil Palm Research Institute) delivered a presentation entitled: *Current status of research and development on bio-fuels in Indonesia*. He presented the achievements to date of research and development of oil palm and sugar cane based bio-ethanol industries in Indonesia.
4. Prof. Taro Sonobe (RISH, Kyoto University) held a presentation entitled: *Novel thermal conversion process for bio-energy by microwave heating at Research Institute for Sustainable Humanisphere, Kyoto University*. He presented his research on microwave heating as a pretreatment of the enzyme saccharification of woody biomass for bio-ethanol production.

Comments [12.00-12.30]

Prof. Kosuke Mizuno commented on the presentations held during scientific session 1.

1. Within the development of bio-energy, a number of issues should be given further consideration, such as:
 - the global environment, national energy security, and the continuation of economic development;
 - the enhancement of rural economies;

- the relationship between the high potential of biomass resources and the increase of (fossil) oil prices;
 - are energy crop monocultures consistent with the sustainable humanosphere?
3. Local supply of rural energy. Bio-diesel and bio-gas are conventional technologies for generating energy locally. However we should not forget to look at the economic feasibility of these technologies in the setting of the local economy.
 4. Who actually needs these alternative energy-sources? Deeper consideration of this question is warranted.

Scientific Session 2: Forest as Humanosphere [13.00-16.00]

Moderated by Prof. Kono Yasusuki (CSEAS, Kyoto University) and Dr. Dorothea Agnes Rampisela (Hasanudin University).

Four panelist held a presentation:

1. Prof. Toshiaki Umezawa (RISH, Kyoto University) gave a presentation entitled: *Biotechnology of tropical acacia*.
2. Prof. Parikesit (Padjajaran University) delivered a presentation entitled: *Man made forest as humanosphere component*. He illustrated many of the important roles that man-made forests can play and the challenges that man-made forests face through a case-study conducted at the Citarum Watershed, West Java, Indonesia.
3. Prof. Kenichi Abe (CIAS, Kyoto University) held a presentation entitled: *Human security in Peat Swamp Forest*. He argued the importance of “vernacularism” for the principally immigrant community of the peat swamp forests.
4. Mr. Keron A. Petrus (University of Indonesia) and Dr. Motoko Shimagami (CIAS, Kyoto University) gave a presentation entitled: *Empowering local institution for sustainable forest management: Lesson from “facilitated research” on community forestry in Sumber Agung Village, Lampung Province*. They presented the experiences at Sumber Agung Village’s where it came to the front that in order to make local institutions function effectively in managing the forest, it is crucially important that the State officially recognizes local community’s rights to the forest.

Wrap up session: Resolutions and future perspectives [16.00-17.00]

Moderated by Dr. Masaaki Okamoto (CSEAS, Kyoto University).

In this session Prof. Kono Yasusuki (CSEAS Kyoto University), Prof. Takahasi Watanabe (RISH Kyoto University) , and Dr. Wahyu Dwianto (Research and Development Unit for Biomaterials, LIPI) report on the findings from the scientific sessions.

The objectives defined from the forum were listed as follows:

- to seek a new Indonesia;
- to define what is national development;
- to explore the concept of a sustainable humanosphere;
- to anticipate global warming, climate change and MDG’s;
- to develop a forest model for a sustainable humanosphere;
- to intensify the number of studies on biodiversity of flora and fauna.

What is understood to comprise a “humanosphere” was identified as follows:

- Human activities and how they interact with their surrounding environments.
- A humanosphere is not only a term to refer to the scientific study of material, energy flows and conversions, but should also include all interactions between man and nature, including human and social responses to the environment.

- Kyoto University's Global COE Project (2007-2012) is to create an interdisciplinary framework under which to promote sustainability of the humanosphere in concrete terms.

Problems and solutions from socio-economic & environmental perspectives

PROBLEMS	SOLUTIONS
Two critical problems face the Tanjung Punting National Park: (1) illegal logging and mining activities; (2) conflicts of interest between central and local governments (H. Hidayat)	National Park Management: (1) collaborative management of reforestation programs, (2) law enforcement, (3) hard sanctions, and (4) socio-economic empowerment of local people (H. Hidayat)
Benefits from forests are currently still dominated by benefits from timber, while erosion prevention and water arrangement benefit only in small measures (M. Bismark).	The function of community forests located in the buffer zones of conservation areas is very important as (1) a forest conservation tool, (2) for forest rehabilitation, and for (3) community economy improvement (M. Bismark).
State-based centralized forest policy neglects the role of local people living in and around forest area and has shown many failures (K.A. Petrus & M. Shimagami).	In community forestry policy the forest is a basis of communities' livelihoods, therefore they utilize the resources in a way that seeks harmony with the characteristics of the forest (K.A. Petrus & M. Shimagami).
The crisis facing mankind: population explosion, energy crisis, and global warming (S. Kawai).	Interdisciplinary research with a broader perspective is urgently required to solve such critical issues (S. Kawai).

The scope for science and technology was identified as follows:

- The tropical region receives the highest concentration of solar energy which is the ultimate energy source of all organisms of earth and is the driving force of global atmosphere dynamics and of the production of plants (S. Kawai).
- Humanosphere science covers a wide range of research fields on the humanosphere, from the ground, to the atmosphere, and the space for human existence (S. Kawai).

Research fields should:

- organize inter-disciplinary research projects that include (1) the evaluation of tree bio-mass production by tree growth analysis and remote sensing technology, (2) environmental monitoring and assessment through atmosphere and biodiversity observations, and (3) bio-technology for enhancing tree functions.
- develop the academic and technological solutions to establish a cyclical system of resources and energy in the region, and which supports the harmonization of ecology and economy.

Problem and resolution from the science and technology perspective

PROBLEMS	RESOLUTIONS
Global warming and deficiency of fossil fuels (T. Watanabe).	Lignocellulosic bio-refinery plays a key role in replacing the oil-based chemical industry because bio-mass is a carbon-based renewable resource with large quantities of lignocellulosics (T. Watanabe). The biodegradation in combination with thermo-chemical and physical treatments can be applied to the production of

	<p>bio-methane, bio-ethanol and feed for cattle (T. Watanabe). Technological innovation: the effect of MW irradiation has been investigated to improve the enzyme saccharification rate of woody biomass for bio-ethanol production (T. Sonobe et al.)</p> <p>Bio-fuel development in Indonesia should involve:</p> <ol style="list-style-type: none"> (1) empowerment of rural communities to produce bio-fuel for their own energy consumption/needs. (2) empowerment of small and medium scale enterprises (SME) to produce bio-fuel for local markets. (3) encouraging big scale companies to produce bio-fuel for its own use/needs. (4) encouraging private enterprises (national and foreign) to commercially produce bio-fuel for domestic and export markets.
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A number of observations add background to the perspectives identified during this 2 day forum. These observations are:

1. There remains a big gap between bio-diversity conservation and large-scale plantation development;
2. The quick answer is to give up on conservation efforts and continue to do both in the present way, so we must jump at this challenge;
3. Environmental conservation requires reconsidering the basics such as talun, vernacularism, and CF;
4. Tree plantation and bio-technology have still to mature;
5. Our thoughts on the humanosphere are still limited and we have to expand them to include the bio-sphere and geo-sphere;
6. The time-scale for developments is a basic issue within the discussion; energy prices ultimately decided the feasibility of bio-fuel production by large-scale plantations;
7. CF expires after 5 years, but there is a need to develop good forest for a longer period;
8. Nobody thinks about the future of PSF;
9. How to synthesize the differences in time-scale between the humanosphere, bio-sphere and geo-sphere may be a serious question.

The following perspectives for the future will be possible when supported by the Government politically and through law enforcement:

- Intensified biodiversity studies (E. Sukara);
- The development of sustainable humanosphere industries (K. Mizuno);
- Reforestation by forest-based communities (H. Hidayat; M. Bismark; K.A. Petrus & M. Shimagami).
- Bio-mass production from plantation forests (S. Kawai) and man-made forests as humanosphere components (Parikesit);
- The development of appropriate bio-energy (S. Sabiham; T. Watanabe; G. Wibawa; T. Sonobe) and tree bio-technology (T. Umezawa);
- Stopping the exploitation of timbers from natural forests, and utilizing more lesser known wood species for different purposes (W. Dwianto).