

The 22nd Session of the International Co-ordination Council of the Man and the Biosphere (MAB) Programme

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NATIONAL REPORT

Indonesian National Committee for Man and the Biosphere (MAB) UNESCO Programme

INTRODUCTION

Indonesia now has seven Biosphere Reserve (BR), namely Cibodas BR (Core area is Gunung Gede Pangrango National Park 21.975 ha, established 1977), Tanjung Puting BR (core area is Tanjung Puting National Park 415,040 ha established 1977), Lore Lindu BR (core area is the Lore Lindu National Park, 229,000 ha established 1977), Komodo BR (core area is Komodo National Park, 173.300 ha established 1977), Leuser BR (core area is the Gunung Leuser National Park, 1,094,692 ha established 1981), Siberut BR (core area is Siberut National Park, 190,500 ha established 1981), and the newly establish Giam Siak Kecil-Bukit Batu Biosphere Reserve (core area is two Wildlife Reserve Giam Siak Kecil and Bukit Batu and forest production of Sinar Mas Forestry Group Consession converted to permanent conservation, 178 722 ha established 2009). In 1989, Komodo National Park was designated by UNESCO as a World Heritage Site. Gunung Leuser National Park together with Kerinci Seblat National Park and Bukit Barisan Selatan National Park has recently also declared as World Heritage site "*Tropical Rainforest world heritage.*"

Biosphere Reserves and its concept should be central to Indonesia in providing the country a management model for sustainable development. Based on the existing conditions, the availability of data, information, physical infrastructure and human resources, work experiences and the present of World Network of BR, MAB Indonesia is continuously promoting Biosphere Reserve to a wider stakeholder beyond National Park Managers to ensure the adoption of BR concept as model for sustainable development. BR also promoted as an *in-situ* learning laboratory for sustainable development. Understanding BR strategic mission which include conservation, research, education and training, economic development, community empowerment is now growing steadily in Indonesia. The involvement of wider stakeholders to innovatively provide solution to a complex management of huge landscape ecosystems is a key success to implement the BR concept and promote sustainable economic development while conserving nature, culture, tradition and local wisdoms.

MAP Target 5. Enhanced cooperation between experts and practitioners in relevant key issues

MAB Indonesia participated in the 11th meeting of EABRN, which was held in Wuyshan Biosphere Reserve (China) from November 10th to 15th, 2009. Participants discussed how to

implement MAP and shared the MAB activities of each country. During the 21st session of MAB-ICC, MAB Indonesia participate in the International meeting on climate change for environment expert (May 26, 2009, Jeju KAL Hotel); International workshop on climate change in Biosphere Reserves (May 27, 2009, Jeju Media Center, Sinsnan Park & Sinsan Gallery); and Asia Pacific Seminar on Eco-Tourism, May 28, 2009; Jeju Honey Crown Hotel 2 F Hall, Korea. The main focus of the meeting has related to climate change and how the biosphere reserves may be used as learning sites to demonstrate its ability in mitigation and adaptation measures. In line with the MAP, climate change is highlighted as one of the key issues for the global societal responses. We are contributing the idea for this issue by presenting it In this meeting. The title of our presentation is *"Synergizing Local Knowledge and Modern Science- Biotechnology to Promote the Implementation of Biosphere Reserve Concept toward Sustainable Development"*. The richness of the Indonesian natural resources and the diversity of culture and traditions and its interaction have lead to the accumulation of local knowledge related to the understanding of the important of natural resources to support life. A large number of plant and animal species were recognized by local community as an important resource for food, fiber, energy and an important ingredient for curing various diseases. Local knowledge is now becoming important factor and even a tool for the development of modern science, biotechnology in exploring the value of biological resources for humanity. However, the synergy between local knowledge and modern science is not properly practiced in developing new discipline of science. There should be ample of opportunity to develop new paradigm in understanding the value of natural resources by merging local knowledge and modern sciences. The combination of local knowledge and modern science could accelerate our understanding and our confident on the value of natural resources. Logistically, such activity could support the smooth implementation of *"biosphere reserve"* concept if it is practiced at the core area and its output is used both in buffer and transition area for ensuring harmonious relationship between people and nature. Combining biotechnology and local knowledge should be instrumental for the prosperity of the people in buffer zone and transition area while protecting core area. Our study shows, that local people from various ethnics in Indonesia do have a local technology not only in managing the richness natural resources and their environment, but also in utilizing a large number of biological diversity for their subsistence life. The application of biotechnology could scientifically improve the local technology in utilizing natural resources. The application of modern science should also important to improve the management of natural resources from landscape ecosystem, population, species and genetic level. In this paper, the use of local knowledge and its harmony with biotechnology will be presented. Possible application of biotechnology in promoting sustainable economic development based on various important species (previously known by local people) in the buffer zone and transition area of biosphere reserve is highlighted. The full paper is available on request.

In enhancing cooperation between experts and practitioners in relevant key issues, MAB Indonesia proposes to host the coming *"SeaBRnet and South-South Collaboration"* meeting. The Governor of Riau shows his interest to host the meeting and he suggested Pekanbaru, Riau be the place to hold the meeting in 2011. Pekanbaru should be a perfect site for the venue to promote conservation and exploring alternatives for the people of Riau to protect the highest carbon deposit on earth and providing the best procedure and solution in

mitigating climate change to be adopted by local and provincial level and GSK-BB Biosphere Reserve.

To promote BR concept, MAB Indonesia together with various stake holders including private sector will also participate the Association of Tropical Biodiversity Conservation (ATBC) 2010 meeting to be held in Bali, Indonesia, 19-23 July 2010 attended by more than 700 scientists from 65 countries. .

MAP Target 6: Communication strategies for each biosphere reserve, integrated with national and higher levels

MAB Indonesia recognizes the important of communication among individual BR and integrates their activities to the national agenda. MAB Indonesia organized a workshop for all stakeholders involved in promoting and implementing BR concept in Indonesia. One of the workshops was held in Bogor on 19 November 2009 and 21 April 2010 with about 50 participants from local government, Ministry of Forestry, Ministry of Environment, Indonesian Institute of Science (LIPI), Bogor Agricultural University, University of Indonesia, public private sector, NGOs, and National Parks that is a core area of BR. In these workshops, participants discussed the cooperation between local government, national parks authority, experts, NGOs and the societies in the future. We discussed also about Institution of BR, management plan, action plan, fund-raising and discussed how to improve the management of BR in Indonesia.

In addition each biosphere reserve held a workshop involving key stakeholders in the region to discuss various issues and action plans.

MAP Target 7: Functional MAB National Committees in each country, managed in a manner assuring adequate representation of biosphere reserve coordinators and other key stakeholders.

The Indonesian Institute of Sciences (LIPI) is acting as permanent secretariat of the Indonesian National Committee of MAB UNESCO Programme. The Deputy Chairman of LIPI for Life Sciences is appointed as Chairman for the National Committee of MAB UNESCO Programme. He is responsible for smooth implementation of MAB UNESCO Programmes in Indonesia by inviting representative of key stakeholders as an active member of the committee. The committee closely works with Indonesian National Commission for UNESCO, Permanent Delegation of Indonesia for UNESCO, UNESCO Regional Office Jakarta.

National Committee of MAB UNESCO Programme chaired by Deputy Chairman of the Indonesian Institute of Sciences (LIPI) while representative from Directorate General of Forest Protection and Natural Conservation, Department of Forestry, Representative from State Minister of Environment act as vice Chair. To run daily activity, LIPI assigned Executive Secretary.

To ensure smooth implementation of MAB Programme in Indonesia, LIPI provide space at Kusnoto Building in Bogor dedicated as permanent secretariat of MAB Indonesia. With this, MAB Indonesia has new address as following: Kusnoto Building, 4th Floor, Jl. Ir. H. Juanda 18 Bogor 16122.

It is crucial to note, that MAB Indonesia focusing the activities on promoting BR concept and strengthens coordination among wider stakeholders particularly local governments, Department of Forestry, Department of Environment, University, Research Institution, NGOs, public private sectors. MAB Indonesia continuously support and develop regional and international cooperation by giving more opportunities to wider stakeholder. .

MAP Target 10. Open and participatory procedures and processes in the designation, planning and implementation of biosphere reserves.

Cibodas Biosphere Reserve:

Since the 21st ICC MAB meeting, MAB National Committee in cooperation with Gunung Gede Pangrango National Park Management held series of coordination meetings involving representatives from the local governments namely Regency of Bogor, Sukabumi and Cianjur. Private sector, NGOs, and other important stakeholders in the region are also invited to participate in series of coordination meeting. Excellent support of the Regional Coordinating Agency, BAKORPP Region 1 of West Java, the coordination meeting successfully organized. The major achievement is that the consensus among wide stakeholders in the region is achieved and it is believed could revitalize Cibodas Biosphere Reserve management. Key stakeholders participate in this endeavour are Gunung Gede Pangrango National Park Management Team, Indonesian National Committee MAB Programme, BAKORPP Region 1 the Province of West Java, West Java Provincial Forestry Office, Bogor, Sukabumi and Cianjur Regency, private sector e.g. PTP Tea Plantation, the Consortium Gede Pahala (Gede Pahala Society), NGOs and other community members. Representative from UNESCO Regional Office Jakarta also actively participate. Some important results of this coordination meeting are the following:

1. A "*Forum of coordination and communication of Cibodas Biosphere Reserve management*" which involve the various stakeholders is established by the decree of the Governor of West Java;
2. Management plan and strategies for Cibodas Biosphere Reserve which include roles for each stakeholder in the region is now under extensive review.

GSK-BB Biosfer Reserve

Board of Management of GSK-BB Biosphere Reserve called "*Badan Koordinasi Pengelolaan Cagar Biosfer GSK-BB*" is established by the Decree of Governor-Riau No. Kpts 920/V/2010. Management Board is chaired directly by the Governor of Riau. This shows his a strong commitment in implementing BR concept. The Regent of Siak and Bengkalis are act as vice chair to the Management Coordinating Board. The member of this Management Coordinating Board of BR is diverse and representing major key stakeholders in the region.

Establishment of such management Board believes could trigger other BR in Indonesia e.g. Lore Lindu, Tanjung Puting, Komodo, Siberut, and the BR of Leuseur to follow a similar path.

MAP 11: Enhanced legal recognition of biosphere reserves where appropriate

National legislation is found to be important to strengthen the management of biosphere reserve in Indonesia. MAB National Committee Indonesia support any initiative and effort to include biosphere reserve to be part of the national legislation. It is note that the term of BR has already included in the the national Act since 1955 (UU No 5 1995). However, it has to be revised as it is no longer suited to a rapid development of BR as stipulated in Seville Strategy and MAP. MAB Indonesia, Indonesian Institute of Sciences and Ministry of Forestry is now drafting Government Regulation (Rancangan Peraturan Pemerintah) on Biosphere Reserve. It is obvious that BR will be part of the national legeslation in Indonesia. To ensure the new Government regulation on BR could acomodate the concept of BR as stipulated on Seville Strategy and MAP, MAB National Committee Meeting in Bogor establish taskforce and assigned expert to review the draft of government Regulation on BR and report their work to the secretariat of the MAB Committee.

At the main time, Governor of West Java through Governor Decree No S22.51/Kep.157-BKPPW 1/2010. "*Coordination and Communication Forum of Cibodas BR management*" while Governor of Riau establishe "*Coordination Agency of GSK-BB BR management*".

Those Governor Decree could possibly used for the Local Government as the basis for preparing the budget for biosphere reserves development programmes. It is expected that the financial support for biosphere reserves will be included in provincial budgetting policy in the near future.

MAP Target 13: Functional zonation in all biosphere Reserves established, particularly with regard to the transition area and the development function

GSK-BB Biosphere Reserve: The core area as a significant water reservoir supplying the need of water to support human activity at buffer zone and transition area. Core area serves as a site to control floods and forest fire. The buffer zone is composed mainly of industrial plantation forest managed by Sinar Mas Forestry and Partners. Within the plantation buffer zone, riparian habitats, and conservation set asides, each in diverse succession stages creating a network of interlinked forest habitat types. The Transition area of Giam Siak Kecil-Bukit Batu Biosphere Reserve largely developed into oil palm plantation estates, rubber plantation, smallholder farms, and settlements.

Biosphere reserve Giam Siak Kecil, Bukit Batu in Riau have been included on the spatial planning of Riau province dedicated to demonstrate the harmony between conservation and sustainable economic development.

Other BR which is established before Seville is now following the path of GSK-BB Biosphere Reserves. It is expected to be completed before 2013.

MAP Target 14. Co-operative conservation and development strategies for biosphere reserves

The Giam Siak Kecil-Bukit Batu Biosphere Reserve contains a mix of protected areas including two *Wildlife Reserves* (Bukit Batu and Giam Siak Kecil) managed by Department of

Forestry and **Natural Forest Production** managed by private company (Sinar Mas Forestry and Partners). Those Reserves and Natural Forest Production are fully dedicated as a core area which is permanently conserved.

Peat swamp forest types with its high biodiversity value and unique small lakes (*tasik*) dominated the core area. One of the major landscapes recognized by biologists and ecologists is the lowland forest area of Giam Siak Kecil Wildlife Reserve. This area found to be a diverse ecosystem types that includes wetlands, peat swamp forests, and alluvial bench forests from inland to the sea, covering a myriad of habitats, elevations, and soil types. In this same area, there is another wildlife reserve, Bukit Batu a forest reserve also recognized for its biodiversity richness and do has a significant conservation values.

Hydrological system at the peat swamp plays an important role in preserving and controlling the hydrological cycle. The peat swamp landscape has functioned as water catchments area to control flood, drought, and protecting from the sea intrusion. This area can also prevent the fire disasters.

The function of water catchments area is to protect the water supply for the crops, fishery, animal husbandry, and maintain level river surface for local people's transportation.

Buffer zone mainly comprised of industrial plantation forest managed by Sinar Mas Forestry and Partners. The remaining area preserved as remaining natural forest.

Buffer zone containing industrial plantation forest in the long term will manage as an effective buffer for the core zone from illegal logging, shifting cultivation practices and oil palm and rubber cultivation.

MAP Target 17: Trained biosphere reserve manages and other relevant stakeholders

For the capacity-building of biosphere reserve managers, societies, students, and others stakeholders, we have done training and workshop:

1. Workshop in Cibodas BR (30 April 2010), Lore Lindu BR (2008) and Siberut BR (November 2010) followed by managers and staff of the biosphere reserve, local governments, community leaders and NGOs.
2. Environmental education for students (already conducted since 2003), college students and young researchers. Environmental education for elementary school students, junior and senior high schools in cooperation with the Bogor Botanical Gardens.
3. Award program for young researchers at the national and international level (UNESCO's Young Scientist Award). Need a new format and optimize the participation of Indonesia in MAB Young Scientist Award.
4. Regional Training Course on Plant Taxonomy (already conducted since 1984), training on Taxonomy of fauna, ethnobiology, etc.
5. Training for the communities within and around the biosphere reserve areas in cooperation with the National Parks, Local Government, and NGOs, etc.

MAP Target 19: Biosphere reserves to have research programs on analyses of ecosystem services and their management through stakeholder participation

Research on potency of ecotourism in BRs in Indonesia was done and the result of this study has implemented. For example: Ecotourism program at Tangkahan, Gunung Leuser Biosphere Reserve. Tangkahan is a small village on the border of Gunung Leuser National Park located in North Sumatra. It is situated at the junction of 2 rivers, the Buluh River and the Batang River. Tangkahan, referred to as the hidden paradise of Gunung Leuser National Park, is an ecotourism area in the Langkat district of North Sumatra, just two hours drive from the neighboring ecotourism site of Bukit Lawang or three hours drive from Medan.

Historically, In the 1980s and 1990s, local people were actively cutting down trees illegally from the park for commercial timber. However, after a time the people became aware of the damages wrought by such activity and the errors of their ways, and thus collectively decided to stop illegal logging and transform the area into an ecotourism destination. Thus in April 2001, the residents gathered and passed local regulations prohibiting illegal exploitation of the forest and established the Tangkahan Tourism Institute (*Lembaga Pariwisata Tangkahan*, or LPT). Around 1997, many villagers around the park were earning their livelihood from illegal logging. In order to reduce deforestation, Tangkahan was selected as a pilot project of community based ecotourism. The park was delegated the authority to the community to manage the tourism project by setting up an entrance fee which is then used for the community and for conservation purposes. Local people were trained to become guides and manage the tourism activity, changing their source of living from illegal logging to ecotourism. The community has received a national award for the conservation category from Indonesia's Department of Culture and Tourism.

LPT established through the signing of MoU with Gunung Leuser National Park Management in April 2002 to manage the Tangkahan forest for ecotourism purposes. LPT developed the Community Tour Operator (CTO) system, which provides accommodation and local tour guides for visitors. Tangkahan specializes in eco-tourism activities like jungle trekking and Elephant trekking.

Reforestation of degraded land through tree nursery and replanting projects in Forest Block of Sei Serdang, Gunung Leuser National Park is supported by UNESCO and Spain Government. This project involves the restoration of cleared forest in the Sei Serdang region of the Gunung Leuser National Park. This program is work in close collaboration with national park authorities and local people to undo damage caused through illegal conversion of protected land into plantation agriculture (palm oil plantation). This project has facilitated the establishment of a group of farmers in this area who are committed to supporting the rehabilitation of GLNP and actively participate in the protection of the national park from further encroachment. In addition to forest rehabilitation, the project provides sustainable alternative livelihood schemes for local people living adjacent to the park. They benefit from the restoration of natural ecological services (having previously suffered droughts as a result of high water uptake from the illegal planting of oil palms), and also receive agroforestry and business development training. Indigenous tree species planted include sungkai (*Peronema canescens*), pulai (*Alstonia scholaris*), durian (*Durio sp.*), jengkol (*Archidendron pauciflorum*),

merbau (*Instia bijuga*), meranti merah (*Shorea leprosula*), cengkuang (*Scrutinantho brunnea*), cempedak (*Artocarpus champedan*), etc.

MAP Target 20: Biosphere Reserve have research programme linked to the development of the management plan and zoning.

GSK-BB Biosphere Reserve:

- Research Collaboration between Indonesian Institute of Sciences (LIPI), Kyoto University and University of Riau in Research and Development of GSK-BB Biosphere Reserve (Biodiversity, Carbon, Climate change, Biofuel, Water management, etc.)
- Research Program of the Centre of Excellence (CoE), Kyoto University on Biodiversity assessment and multidisciplinary research in GSK-BB Biosphere Research).
- Research on Sustainability of Industrial Forest Plantation in ASEAN Country (Conducted by LIPI and CSEAS, Kyoto University)
- Survey focused on biodiversity assessment and sociology, cultural, and socio-economy of local people. Survey conducting by Research Centre for Biology-LIPI, Research Centre for Culture and Society-LIPI, University of Riau, Research Centre for Freshwater Fishery, Research and Development Centre for Forestry, Ministry of Forestry, etc.
- Study on Lesitin and omega-3 content of local species of *labi-labi* (*Amyda* spp.), fish-culture (fresh water), conducting by Research Center for Biology-LIPI and Sinar Mas Forestry.
- MoU on research and development of GSK-BB Biosphere Reserve: LIPI, BBKSDA, Research and Development Agency of Riau Province, University of Riau and Sinar Mas Forestry) sign on 19 February, 2009

Lore Lindu Biosphere Reserve

Research at Lore Lindu has been a tradition for more than 15 years under the collaboration of Bogor Agriculture University, Tadu Lako University and the *University of Gottingen*, Germany. The research staff of LIPI also take part in various project related to their expertise. Recently, LIPI also included on the LoA (*Letter of Agreement*) to enhance collaboration between LIPI and Gottungen University through the expansion of STORMA project of the University of Gottingen Germany. The accumulation of data and data base develop by STORMA Project is handed over to LIPI and managed by MAB Secretariat and Biology Research Center of LIPI. For the process of transferring data, Research Center for Biology assigned IT Staff and being trained in Gottingen funded by the *University of Gottingen*, September 2009.

Cibodas Biosphere Reserve

- Research on biodiversity assessment was done by Research Center for Biology-LIPI, University of Indonesia, Bogor Agricultural University, Research and Development Center for Forestry, and NGOs.

- Research Center for Biology-LIPI has established Plot Permanent for ecological study and biodiversity monitoring method.
- Research on Carbon stock linked to plant diversity on Gunung Gede Pangrango National Park as the core area of Cibodas Biosphere Reserve has conducted by Cibodas Botanical Garden-LIPI, etc.

MAP Target 21. Decade of Education for Sustainable Development (DESD) programmes with educational and research institutions

MAB Indonesia participates in the preparation on Asia Pacific RCE Conference on the Implementation and Action of ESD in formal and informal education to be held in November 2010 in Yogyakarta, Indonesia.

MAP Target 28: Exchange between biosphere reserves

South-South Cooperation in Science and Technology (SSCST) is a vital strategy in the balancing of global power and the transformation of developing countries into economically independent nations with a diversity of modern, technology-driven economy sectors. Recent discussions have led to a plan for cooperation among three large Southern nations: Indonesia, the Democratic Republic of Congo (DRC), and Brazil.

During the twenty-first session of the International Coordinating Council (ICC) of the Man and the Biosphere (MAB) Programme was held at the Jeju KAL Hotel, Jeju, Republic of Korea from 25 to 29 May 2009, the Council welcomed the launch of South-South Cooperation Network for capacity building for sustainable development in the humid tropics.

The SSC activities implying the three largest Humid Tropical regions, via a collaborative network between the following academic and research institution: The Council expressed its support for South-South Cooperation Network and indicated that the representatives of the **Brazilian** (UNESCO Chair in “*South-South Cooperation for Sustainable Development*” of the Federal University of Para, Belem); **Indonesia** (National Committee of MAB-UNESCO Programme Indonesia, Indonesian Institute of Sciences), and **Democratic Republic of Congo** (UNESCO “*Regional Post Graduate Training School on Integrated Management of Tropical Forests and Lands*” ERAIFT (University of Kinshasa, DRC) intend to sign an MoU during a ceremony at 16:00 on Thursday 28 May 2009 at the Jeju KAL Hotel, Jeju Island, Republic of Korea.

We propose tri-national coordination meeting for SSCST in 2010 in Pekanbaru, Riau. This meeting includes presentations at a special symposium on “*Capacity building in tropical biology and conservation science: the role of South-South Cooperation*”.

Objective of the SSC meeting:

1. To planned and implemented SSC activities the three largest humid tropical regions of the World: the Amazon, the Congo Basin and the Southeast Asia Tropical Humid regions, via a collaborative network between the following academic and research institutions: Federal University of Pará through the UNESCO Chair in South-South Cooperation for sustainable development (Belém, Brazil), the University of Kinshasa through the Regional Post-graduate Training School on Integrated Management of Tropical Forest and Lands-ERAIFT (Democratic Republic of Congo) and the National Committee of MAB-UNESCO Programme Indonesia and the Indonesia Institute of Sciences;
2. To share information from each other of *"the parties"* the existing capacity for training, research, and other activities related to sustainable development in the humid tropics in order to establish cooperative actions to maximize the use of human and capital resources;
3. To facilitate technical missions between *"the parties"* to examine concrete cooperation activities;
4. To implement the exchange of professors, researchers, managers, practitioners, and students, through internships, fellowships for some specific research themes, joint workshops, publications, and other initiatives;
5. To design and implement partnerships on BR development.
6. To implement the joint efforts to obtain sufficient funds to implement the actions of the network;

MAP Target 29: Promote partnerships

Indonesian MAB Programme National Committee together with public private sector (Sinar Mas Forestry and partners), Ministry of Forestry and local government has cooperated to nominate new BR *"Giam Siak Kecil-Bukit Batu Biosphere Reserve"*. This BR was accepted and approved by ICC-MAB UNESCO in Jeju, Korea, 26 Mei 2009.

Private Sector (Sinar Mas Forestry) is a vital partner on the GSK-BB management and development of this BR. Establishment and development of GSK-BB Biosphere Reserve is an initiative of private sector, Sinar Mas forestry.

MAB Indonesia has also initiative to invites private sector concerning their role in the development of biosphere reserves in Indonesia. Sinar Mas Forestry has participated and gives of grant for research and development in GSK-BB Biosphere Reserve in Indonesia.

MAP Target 30: Transboundary Biosphere Reserve

The MAB Indonesia has supported to propose of new transboundary biosphere reserves (Transboundary of Borneo Biosphere Reserve). A potential transboundary biosphere reserve in Indonesia will be Transboundary Borneo Biosphere Reserve. To designate Transboundary Borneo Biosphere Reserve and its adjacement areas as a biosphere reserve has been in progress as a national project.