



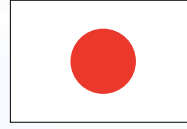
United Nations  
Educational, Scientific and  
Cultural Organization



Man and  
the Biosphere  
Programme



Ministry of  
Environment,  
Kingdom of  
Cambodia



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Korean National  
Commission for UNESCO

# Meeting Report



- ▶ **The 8th Southeast Asia Biosphere Reserves Network Meeting**
- ▶ **The 2nd Asia-Pacific Biosphere Reserves Networks Strategic Meeting**
- ▶ **Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas**

Siem Reap, Cambodia, 15 – 19 December 2014

*Organized by:*  
UNESCO Offices in Jakarta, Phnom Penh and Beijing  
Ministry of Environment, Kingdom of Cambodia

*Supported by:*  
Japan Funds-in-Trust  
Korean National Commission for UNESCO

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**Meeting Report**  
**The 8th Southeast Asia Biosphere Reserves Network Meeting**  
**The 2nd Asia-Pacific Biosphere Reserves Networks Strategic Meeting**  
**and**  
**Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas**

Siem Reap, 15 to 19 December 2014

The meeting held in Siem Reap, Cambodia, from 15 to 19 December 2014 addressed three main themes consisting of:

1. The 8th Southeast Asia Biosphere Reserves Network (SeaBRnet) Meeting which focuses on Biosphere Reserves (BRs) as places for sustainable development through ecotourism and eco-labeling.
2. The 2nd Asia-Pacific Biosphere Reserve Networks (APBRN) Strategic Meeting which focuses on BRs as model for alleviation poverty through ecosystem services.
3. Asia-Pacific Workshop on strengthening capacity for management of Biosphere Reserves and Protected Areas.



# Opening Remarks

## *Day 1 (15 December 2014)*

Before working on the above themes, participants have listened to the welcome remarks from the Governor of Siem Reap, H.E. Khem Bunsong; UNESCO Phnom Penh Representative, Ms. Anne Lemaistre; Korean Commission for UNESCO, Mr. Kang Sangkyoo; UNESCO Jakarta, Mr. Hubert Gijzen and H.E. Say Samal, minister of Ministry of Environment.

In his welcome address, H.E. Khem Bunsong expressed great honor to be invited to open the meetings. He maintained that these meetings had an enthusiastic group of persons representing the BR network country members. Partners involved included line ministries, provincial departments, NGOs, local authorities, local communities, and private sectors. He highlighted the rich heritage of Angkor Wat, the increase of tourists year after year, and the provincial effort to expand tourism services and infrastructure development. He also depicted that the purpose of hosting these meetings are to exchange experiences, share information and initiate most appropriate mechanism for BR management.

Next, in her keynote remark, Ms. Anne Lemaistre, representative of UNESCO Phnom Penh, displayed her sincere appreciation to MoE, UNESCO Beijing, UNESCO Jakarta, and Korean National Commission. She stressed that Biosphere Reserves are areas that have been recognized as Protected Areas by UNESCO and serve to maintain sustainable development. The ecosystem services have been identified as an important tool to promote sustainable development as well as to improve the livelihood of people living in and around the Biosphere Reserves. She also introduced that UNESCO Phnom Penh Office has presented Biodiversity Tool Kit, which has been piloted here in Cambodia in three provinces surrounding the Tonle Sap Lake with corporate and support from MOE and Ministry of Education, Youth and Sports so as to increase awareness and appreciation towards Biosphere Reserves.

Mr. Hubert Gijzen, UNESCO Jakarta, in his keynote talked about the achievements, challenges, and opportunities in relation to BR management. He underscored that the main important goal of the programme is to reach the target date for MDGs and to shape a new global development agenda to follow 2015. He also emphasized that the work on BR presents an opportunity to test and showcase best practices in finding a new balance between people and nature, and between people, by safeguarding the ecosystems and supporting livelihoods of local communities.

Mr. Kang Sangkyoo, the Korean National Commission representative, was thankful to Cambodian Government for hosting such meetings and inspired the way that the Royal Government of Cambodia tries to learn about BR management. With such action, it marks the spirit of friendships among BRs Networks. He addressed that Korea is very delightful to cooperate and actively involved in UNESCO MAB programme.

H.E. Say Samal, in his opening remark stressed that the basis of the five-day meeting is very important to add more knowledge on the management of BRs and exchange best practice experiences. He also highlighted that it would provide a great encouragement to Cambodians to increase the efforts and devotion in the conservation of BR and Protected Areas to become natural heritage assets for the nation and the world. Additionally, it was a great chance to take stock of where we are and how we can contribute in securing a sustainable living to local communities and also reflect on the crucial roles of BRs.

# I. The 8th Southeast Asia Biosphere Reserves Network Meeting

The first day of the meeting undertook the 8th Southeast Asia Biosphere Reserves Network (SeaBRnet) Meeting, which addressed Biosphere Reserves (BRs) as places for sustainable development through ecotourism and eco-labeling.

Experiences about the management of Biosphere Reserves and main challenges to be faced among South East Asia were exchanged through several interesting presentations by experts from different countries within Southeast Asia.

## 1. Introduction on SeaBRnet meeting, Mr. Shahbaz Khan (SeaBRnet Secretariat)

To date there are 631 BRs sites in 119 countries. Basically, a Biosphere Reserve is divided into 3 zones: core zone, buffer zone, and transition zone. The last two can be used for eco-tourism and eco-labeling respectively, aiming at conservation importance and people's livelihoods improvement with ecological perspective. Ecotourism has been implemented in many Southeast Asian countries, but eco-labeling to some extent, is still new to some certain countries and needed further efforts for its implementation. Eco-labeling refers to a voluntary mark used to show when a product or service has a reduced impact on the environment. Therefore, it is so vital to give recommendations on eco-tourism and eco-labeling as well as sustainability design in this meeting in order to maximize the benefits of BR and to promote sustainable development in BRs.

## 2. Biospheres Reserves as places for sustainable development through ecotourism and eco-labeling in Cambodia

### ➤ Wildlife Conservation Society (WCS), Mr. Ross Sinclair

Cambodia can make positive eco-tourism and eco-labeling due to its incredible biodiversity, amazing places with various species, and the massive flying tourists into the country which play a key role in national economic growth, sharing 10% in total. Two important case studies were highlighted:

1. Sam Veasna Centre (SVC) eco-tourism.
2. Ibis Rice, Cambodia. .

Sam Veasna is an independent organization set up by Wildlife Conservation Society (WCS) 10 years ago. It has come up with noticeable remarks with respect to prospective ecotourism sites:

- A wildlife attraction/target species with potential tourist demand.
- Village development goals that align with local conservation efforts.
- Provide significant revenues to the village to motivate behavior changes.

The latter, the Ibis Rice Cambodia, will create sustainable development pathways by:

- Alleviating poverty without habitat destruction.
- Providing premium prices for wildlife-friendly TM products.
- Providing access to new markets for small farmers.
- Involving community members in protected area management.

Consequently, many critical success factors have been produced:

- A product (wildlife or rice) people will pay for.
- Direct link conservation to incentive.
- Social institutions capable of behavior change.
- Generate enough money to change behavior.

In conclusion and based on such incredible natural resources, there are many opportunities to be created. Thus, the main challenge is to bring eco-tourism and eco-labeling together for sustainable development.

#### ➤ **Ministry of Tourism in Cambodia**

Tourism is one of the most essential sectors of green economics which provides job creation, earnings, commercial balance, economic, natural and socio-cultural environment conservation. Cambodia has endured the economic crisis due to political instability, H1N1 disease, etc. However, the Royal Government of Cambodia has put a lot of efforts to secure steady growth by performing information dissemination campaign and clean city competition movement.

In Cambodia, tourism is classified into 4 main managed areas: Phnom Penh capital city, Coastal areas, Northeastern, and Siem Reap (Angkor complexes) which is the long last economic benefit. With the development of Chong Khneas and Tonle Sap Lake, around 80% of tourists visiting Siem Reap experienced aesthetic pleasure therein.

### **3. Country Biosphere Reserve Presentation**

#### ➤ **Indonesia, Mr. Purwanto**

Indonesia has 8 BRs. Indonesia experienced many challenges related to the management of the Biosphere Reserves:

- BR concept implementation has not become a priority for certain local government.
- Weak legal aspect and management institution of Cibodas BR (CBR).
- Zonation systems.
- Socialization is not optimal.
- Illegal activities and conflicts.
- Resources limitation (financial and expert).
- Fragmentation of policy, insufficient coordination.
- Insufficient commitment.



To overcome such problems, beside conducting the socialization, capacity building and real action, Indonesian government also aims to: (1) Strengthen the management institution of CBR; (2) Re-zone system of CBR; (3) Increase development program (Build a comprehensive and integrated management plan for Biosphere Reserve areas (core area, buffer zone and transition area); (4) Build capacity and Prevent and control illegal activities; (5) Improve investment in Ecosystem Services; (6) Increase the capacity of Financial, Social -Economic and Product Branding and Trust Fund; (7) Policy Support, legal aspect, Communications and Program Synergy; and (8) Build cooperation and networking with various stakeholders' commitment.

The main objectives of the forum for Indonesia are to strengthen the coordination and cooperation on BRs development, to learn "success stories" or best practices, to accelerate the BR development programme, and to exchange experience on implementing the development programme.

➤ **Myanmar, Mr. Than Htay**

To date more than one hundred thousand plant species, about 252 mammal species, more than one thousand birds' species and many other terrestrial and marine species were already recorded in Myanmar.

Inlay Lake, the wildlife sanctuary and also the first Protected Area, falls under three administrative townships namely Nyaung Shwe, Pilaung and Peh Kon of Shan State, covering about 640 square kilometers. There are around 160 000 people living around the lake and greatly depend on the lake's resources for their livelihoods. The major livelihoods activities in Inlay Lake are agriculture, hydroponic farming, fishery, blacksmith and goldsmith, weaving, and ecotourism.

Many efforts have been put on Inlay Lake; it could be nominated as the first BR in Myanmar. In collaboration with UNESCO Myanmar Office, the Myanmar national consultation workshop held in February 2013 constructed the plan for the nomination dossier. The Dossier was then submitted to MAB secretariat on 24 September 2013. It was endorsed in the 20th Session of International Advisory Committee for Biosphere Reserve held in Paris on 17 to 20 March 2014. However, the Inlay proposal was deferred and strongly encouraged the authorities to resubmit due to unclear delineation of core zone and the intensive human pressure in buffer zone. The revised dossier has already been submitted. The result of nomination will be released in the upcoming 27th Session of International Coordinating Council.

Moreover, in collaboration with Fauna and Flora International, preliminary studies have been conducted to propose Inadawgyi Lake Wildlife Sanctuary as a BR.

All in all, Myanmar is an example of how through BR concepts move towards the conservation of the diverse fauna and flora and to sustainably improve the livelihoods of local communities.

➤ **Philippines, Ms. Barrientos**

The Philippines continues to adhere to establishing Biosphere Reserves as living laboratories for sustainable development, placing importance on 3 pillars:

- A sustainable framework to enhance people's livelihoods and ensure environmental sustainability.
- A learning place to serve as pilot sites to explore, adopt or implement approaches for conservation and sustainable development.
- A call for action. By raising awareness among local people, citizens and government authorities on environmental and development issues.

The Philippines has two BRs, namely:

- Puerto Galera, one of the most beautiful bays in the world.
- Palawan, with two World Heritage Sites (i.e., Tubbataha Reefs and Puerto Princesa Underground River (one of the New 7 Wonders of Nature).

The two BRs represent the main ecosystem in the country with manifold genetic resources. They are the top tourist destinations in the world. Both BRs are attempting to adhere to MAB's goals, even though, some challenges also appeared in relation to natural resource extraction and at some point jeopardize the survival of indigenous people.

In Puerto Galera, the influx of tourists gave rise to spontaneous, unplanned and poorly managed service sector, high in-migration, massive land use alteration, reclamation of coastal areas, upsurge of waste production, conflicts in water use, poor enforcement and regulation of environmental laws and policies.

To deal with such issues, the Philippines:

➤ **Enacted a coastal resources management plan for Puerto Galera in collaboration with Locsin Foundation, Inc at the World Wide Fund.**

- Issued Municipal Ordinance in 2006 for Environmental User's Fee or EUF (EUF collections will go to environmental projects like coastal and marine, solid waste management project, and water treatment and sanitation facilities).
- Updated the Puerto Galera Comprehensive Land Use Plan and Zoning Ordinance.
- Implementation of the Strategic Environmental Plan for Palawan Biosphere Reserve, the continuing concerns are protection of marine resources, capacity building to adapt and mitigate climate change and sustainability of the implementation of activities or programs that protect Biosphere Reserves.

In order to cope with these concerns, the Philippines has implemented the wise practices through Strategic Environmental Plan (SEP) adopting the UNESCO MAB concepts and strategies. The SEP for Palawan Act established the Palawan Council for Sustainable Development (PCSD) which is a unique body that carries powerful responsibility and locally working only in one province, Palawan. The Environmentally Critical Areas Network of Palawan is a graded system of protection and development control of the whole island province, covering its terrestrial and coastal-marine ecosystems as well as the tribal ancestral lands.

In this sense, the protection of the human population from the real and potential hazards and protection of production areas have been minimized.

➤ **Thailand, Ms. Nuipakdee**

Located in Chiangmai, Mae Sa-Kog Ma BR lies on 4 districts with the total area of 51,051 ha. It hosts many main watersheds feeding families and supporting agricultural practices, hotels, resorts and tourist activities. It contains rich of natural reserves with high biodiversity.

Stakeholders in Mae Sa-Kog Ma BR are divided into 3 main parts: 10% of Research and Logistic, 20% of Development, and 70% of Conservation. The important conservation activities are constructing groups of smart patrol, forest fire control, reforestation, raising awareness, and enhancing ecotourism.

Nevertheless, Mae Sa-Kog Ma still faces some challenges on how to balance between modernization and nature through sustainable management of the area. The related problems are likely:

- A shift from subsidized economy towards high value economy.
- Greater agrochemical use (pesticides, fertilizers).
- Greater irrigation water demands.
- Increased value of labor.

To balance conservation and development in Mae Sa-Kog Ma MAB, Master Strategic Plan has been designed through:

- Participatory conservation and protection.
- Strengthening the sustainable management.
- Enhancing learning, communication and public awareness on the value of Biosphere Reserve.
- Develop mechanisms for participatory cooperation in natural resources management for all sectors.
- Updating database and Research development for BR management.
- To support this master strategic plan, the following actions will be applied:
  - Implementing Payment for Ecosystems Services (PES).
  - Creating a local curriculum for PES and MAB.
  - Creating MAB body structure.
  - Applying MAB activities into local administrative master plan.

➤ **Viet Nam, Ms. Nguyen Thi Thanh Ha**

In Vietnam Biosphere Reserves, many substantial activities/programs have been implemented in order to adapt and mitigate climate change:

**Cat Ba BR:**

- Eco-labeling of BR product and service have been launched
- The introduction of new technology of marine aquaculture to prevent natural disasters.

**Hoi An BR:**

- The Implementation of Community Based Tourism through sharing benefit and sharing responsibility from all stakeholders.

**Kien Giang BR: Sea level rise tendency**

- A success in rehabilitation of Mangrove – a new way of plantation with the fence to wave barrier.

**Mui Ca Mau BR:**

- A positive behavior for the promotion of traditional honey collection practice in U Minh Ha forest and a possible forest fires in dry season.

**Cat Tien BR: Local Knowledge's Improvement on non-timber forest products.**

- Hand-craft for local consumption and tourism
- Pepper culture in buffer zones.

➤ **Indonesia .Community empowerment efforts in Giam Siak Kecil – Bukit Batu BR, Mr. Pieter Sampetoding & Mr. Supriyatno**

- Giam Siak Kecil Bukit Batu BR is a public-private partnership, which combines biodiversity conservation and utilizes sustainable tropical peat land forest to create an economy based on environmental issues. The main business of the community is the production of sustainable pulpwood.
- Successful Biosphere Reserve Management approaches combines:
  - Industrial Forestry Knowledge and good governance through scientific perspective.
  - Suppress the reduction level of biodiversity.
  - Increase the livelihood of villagers.
  - Increase the social, economic and cultural values.
  - Effective institutional management as agreed by all key stakeholders
  - Royal Belum Forest Reserve, The Potential Third BR in Malaysia, Ms. Zen

Peninsular Malaysia's last contiguous forest frontier covers 320,000 hectares. It is 30 million years old of the tropical Asia rainforest and is older than the Amazon forest in Brazil, specially the 2nd largest forested area in Peninsular Malaysia. The biodiversity has been started to explore in early 1990s, which consists of 10 hornbill species

from 54 species of hornbills known in the world, 300 avian species as Important Bird Areas (IBA), 14 world threatened mammals and 3000 flowering plants (3 species of Rafflesia). Specially, it is the part of the conservation of mega biodiversity resources in Malaysia and environmentally Sensitive Area (ESA) Rank 1 under the Malaysia's Second National Physical Plan Two (NPP-2) .

Issue and Challenges, Malaysia is facing are:

- Perak Integrated Timber Complex (PITC) 30 years concession 9,000 ha working towards certification.
- A dozen firms so far under a forest replanting programme that aims to create plantations of latex timber clone (LTC) rubber trees and acacia.
- Plantation (eg. Acacia & LTC)
- Infrastructure development (oil pipeline, railway)
- Shifting Cultivation by Indigenous People
- Poaching (e.g. tigers, rhinoceros, gaharu etc.);
- Marginalization of local/indigenous people
- Perak State is also pursuing industrialization, ecotourism and sustainable development by the year 2020

There are many Conservation Biodiversity Programmes/ Activities in Royal Belum:

- Pulau Banding Foundation/ Banding Charter
- FRIM's UNDP-GEF CBioD project (Technical Working Group)
- BT Integrated Management Plan process
- MYCAT (Malaysian Conservation Alliance for Tigers) [MNS-WWFM-WSC-TRAFFIC]
- Central Forest Spine Project
- Bird Life Forest of Hope Project
- Environmental Education Awareness.

#### **4. Special Focus on Sustainability Science Cambodia**

##### **➤ Fisheries Management in the Tonle Sap BR and Mekong River, Mr. Pich Sery Wath (FiA)**

Having noticed the rapid decrease in fisheries resource, the Royal Government of Cambodia has formulated the deep reform on fisheries management, whose vision is about "Management, conservation and development of sustainable fisheries resources to contribute to ensuring people's food security and to socio-economic development in order to enhance people's livelihoods and the nations' prosperity. Meanwhile, the Government has striven for Harmonization and alingment in Fisheries by promoting

Program Base Approach, recognizing a participatory in decision making. On 21st May 2006 fishery law was signed by King, which has 17 Chapters and 109 articles. The final reform showed that 158 Fishing lots have been abolished which is equal to 953, 861 hectares while the remaining area for conservation is about 97, 503 hectares sharing 10.23%.

Many activities and programmes have been put in place and taken action so as to conserve the fishery resources:

- Identify important habitats/refuges.
- Survey/research on socio-economic, fishing operation, illegal activity, threat, and stakeholders participation.
- Map layout and boundary demarcation.
- Formulate legal framework mechanism and legislations.
- Planning, Collaborating, Patrolling, and releasing endangered species/important species into the wild.
- Public awareness/ground extension.
- Monitor and evaluate.

However, there are many important issues to be addressed:

- Limited understanding of existing legal instrument, policy, management and conservation measure.
- Limited joint effort in management and conservation of some local authorities/competence.
- Fisheries governance is not good enough to eliminate destruction on fisheries resources.
- Community Fisheries have no budget to well perform area management plan in their management area.
- Households' livelihood problem causing effort in resource utilization for just living; they become offense of the nature and the state.
- Illegal/destructive fishing operation.
- Land/inundated encroachment.
- Other externalities (climate change, hydraulic dam...).

➤ **Education for Sustainable Development: "Biodiversity Education Project in the Tonle Sap Biosphere Reserve" Cambodia, Ms. María Iniguez de Heredia, UNESCO Phnom Penh**

UNESCO initiated pilot projects in 8 countries to strengthen existing education and outreach programmes on biodiversity in UNESCO Biosphere Reserves. The focus

was on school programmes (primary to secondary) that teach the conservation and sustainable use of biodiversity. Actions also included capacity building workshops to support teachers, students, community members, media, professionals and decision makers, as well as the development of resource packages for teachers and trainers. A special focus was on how formal education and learning can mutually support each other, as well as how to better integrate biodiversity and cultural diversity issues in educational programmes. Cambodia was selected as one among them to pilot the project by introducing “Learning about Biodiversity: Multiple-perspective Approaches” toolkit to teachers in lower secondary schools located in Tonle Sap Biosphere Reserve, particularly in three provinces Kampong Thom, Siem Reap, and Battambang.

Biodiversity education project, which has been established under collaboration of Ministry of Environment (MoE), Ministry of Education, Youth and Sports (MoEYS) and UNESCO, was very important in contributing to build capacity of lower secondary teachers, students and public awareness to preserve biodiversity in Cambodia. Even though it was the pilot project with a short period of time, it has produced big impacts through creating spaces for key actors especially lower secondary teachers to gain knowledge on perspectives of biodiversity and method to apply these in their lessons. The initiation of this pilot project and collaboration between UNESCO, MoE and MoEYS to promote the integration of biodiversity into teaching and learning program of lower secondary schools was regarded as a concrete step. This was considered as one of the key tools to improve biodiversity education activities since the project has provided opportunities for teachers to improve their knowledge and skills. The project was also aimed to develop appropriate documents, which are used to support the teaching and learning process of teachers and students.

➤ **The Conservation success project of Prek Toal Core Area of the Tonle Sap BR, Mr. Long Kheng**

Tonle Sap is the largest freshwater lake in Southeast Asia (SEA) which is full of various kinds of fish species and the largest breeding colonies of extensive water birds in SEA.

Prek Toal, the core area in Tonle Sap BR, is a very important and beautiful birds conservation area in Cambodia that has attracted many tourists to visit and also the important habitat for fish, birds and mammals. However, it is under threat due to climate change and human influence.

To sustainably conserve biodiversity in Prek Toal Core Area as well as to increase the bird populations and fish stock, stabilize forest cover, and improve the livelihood of local people, three main pillar models have been put into actions including:

- Permanent watching and patrolling by rangers.
- Community awareness and environmental education.
- Ecotourism for community livelihoods.

Consequently, it has resulted with many positive achievements:

- Reduced bird colony disturbance and collection of eggs and chick.
- Effective water bird protection and its recovery.
- Increased fish stocks for local communities.

➤ **Water Management in Cambodia, Mr. Suy Sovann (MoWRAM)**

Cambodia is located in Southeast Asia, with a total land area of 181,035 km<sup>2</sup> and total water area 2.5 %. According to the draft Sub-decree on water resources management, 39 river catchments were identified. Those river catchments were also grouped into 7 Basin Groups. On 29th June 2007 the Law on Water Resource Management was promulgated by the King. The general purpose of this Law is to foster the effective management of the water resources of the Kingdom of Cambodia to attain socio-economic development and the welfare of the people. Under the Law on Water Resources Management, the Government enacted 4 sub-decrees such as: Sub-decree on Farmer Water User Community, Sub-decree on Water License and Water Distribution, Sub-decree on River Basin Management, and Sub-decree on Water Quality.

The National Water Resource Policy is:

- To protect, manage and use water resources with effective, equitable and sustainable manner.
- To foresee and take measures to assist related institutions to settle the facing problems which might be occurred in water sector.
- To develop and implement the national strategy and formulate the national policy and sector policies on water resources management.
- To direct the water resources development, management and utilization in the Kingdom of Cambodia to all activities of institutions, private sector and public sector.
- To improve and uplift the people living to achieve the national policy on poverty reduction and sustainable national economy development.

The 5 Strategic Priorities (2014-2018) for Ministry of Water Resources and Meteorology (MoWRAM)'s Strategic Development Plan on Water Resources and Meteorology are:

- Water Resources Development and Management.
- Flood and Drought Protection and Management.
- Water Law Development and Implementation.
- Water Resources and Meteorology Information.
- Administration and Human Resource Development and Improvement.

➤ **Interactive Session: "Key opportunities and Challenges on Southeast Asia BRs management"**

- **Indonesia:** To develop the BR we really need hard work as there are many problems appearing in the areas. The main important challenges are waste management, water management, spatial planning design, migration of people into the area, as well as the compatible Local Government Regulation. Interestingly, our experience to follow up the ecotourism is that the first important step is the development of accessibility. The second one is the good road mapping of potency which can attract tourists. Accommodation and acceptability of society are also the case in point.



- **Philippines:** Based on the observation, it can be seen that the local community benefits from ecotourism. Boats are used to transport tourists to the visiting areas. And currently, the business community is actively participating in waste management and in the reduction of energy consumption towards efficiency. For example, there was a collaboration between the tourism industry and Palawan Council for Sustainable Development in the implementation of a project related to energy efficiency for resorts and tourism-related businesses in order to attain zero carbon emission. In addition, people respect Protected Areas and even local people and all business interests. There are also and collaboration between all parties who use and have interest in ecosystem services. Therefore, unless the benefit is equitably shared, it is not possible to have sustainable management of Biosphere Reserves.
  - Question: Do you think people in Palawan know what a World Heritage Site is? Do they understand what a Biosphere Reserve is?
  - Answer: It is a challenge the Philippines government is facing. People are not so familiar with BR. Most of them better understand Palawan as Protected Area because of its strategic environmental plan. Whenever government representatives (such as Provincial Government and PCSD officials or employees) go to the communities, they explain that Palawan was declared as a protected protected area owing to its unique characteristics. The law has formulated a special zonation called 'environmentally critical areas network', which designates specific zones with varying uses such as core zone, buffer zones and multiple use zones. They also explain to the local people that Palawan is a BR, nevertheless, people are still allowed to do certain activities in specific zones with the BR.
- **Vietnam:** In Vietnam there are not many people who know about BR. Due to the participation from local people, the payment for ecosystem services is very successful. However, in some cases the BR management cannot be successfully achieved because the price of wildlife in the market is very high. Therefore, local people do not accept the payment of ecosystem services. They would harvest those wildlife resources and sell them to get money.

## 5. Sustainability Science Initiative, Shahbaz Khan

Why Sustainability Science?

- To manage complexities and inter-relatedness of sustainable development challenges.
- To provide a stronger analytical and scientific underpinning of the concept 'sustainability'.
- To employ inter- and trans-disciplinary approaches in BRs.
- To advance understanding of human-environment systems for eradicating poverty, improved well-being and preserving environment.

Participants were divided into three main groups working on the concept of Sustainability, Ecotourism, and Eco-labeling. As a result, each group came out with

productive frameworks and policies.

### **Sustainability**

Sustainability science is really important for sustainable management of BRs. All UNESCO BRs programs need to be brought into the same framework and make sure they are integrated into a tangible longer-term development plan.

BRs should consider sustainability science projects that are designed to build capacity on a long-term basis so they are not reliant on government resources, but to become sustainable within a BR community.

Many more important criteria have to be taken into consideration such as:

- Developing a Sustainability Science Network within South East Asia and Asia-Pacific.
- Developing a series of case studies (and interactive tool-kit) for innovative resource generation in BR communities to facilitate long-term sustainability science projects;
- Constructing legal framework and policies for BRs protection.
- Disseminating research information among communities and wider BRs networks.
- Establishing comprehensive action plan leveraging the funds/resources allocated under different programs for sustainable development of BR.
- Developing a series of Sustainability Science international research collaborations between BRs who already actively engaged in best practice examples.
- Developing a Sustainability Science mentoring program for leading BR communities o mentor emerging projects.

### **Eco-tourism**

The main characteristic of ecotourism is sustainability including environmental, economical, social and legal sustainability. Four main pillars ensure the sustainability of the ecotourism, namely:

- Well established institutional framework and mechanisms inside the BRs.
- An integrated management, involving all stakeholders along the process and including a monitoring and evaluation.
- A legal framework, providing legal instruments both at community level and at government regulation level which help protect the communities and their ownership and the environment.
- Capacity building programmes for the government, the communities and all stakeholders on ecotourism benefits, opportunities, implementation and management. Empowerment of the community on ecotourism activities is also needed.

The group also came out with a “5A Approach” for sustainable eco-tourism in BRs:

- Accessibility and infrastructures.
- Accommodations.
- Attraction, including destination management objectives.
- Acceptability, including conflict management system and security.
- Agencies cooperation for joint work and market strategy for promotion.

### **Eco-labeling**

Discussion focuses on two main areas:

1. Why is eco-labeling needed?
2. What will be the standard or the framework going for operation of BRs?

Eco-labeling is needed in response to three levels:

- The community level: there are many benefits for the community coming from eco-labeling which generates economic benefits and improves the livelihood of the local community. Germany and Russia have shown some practical experiences on how eco-labeling has improved the life of the local community.
- The policy maker level: Focusing on policy makers is crucial on how to convince them to adopt eco-labeling in the BRs. They should realize of its advantages so that at the policy level the benefits from eco-labeling can be shown and contributed to the national development goals and strategies.
- The business people level: People who will take part to promote the interest and go to make investment. Financial support is a key factor to implement eco-labeling; however, financial incentives are needed.

There are also some key points to keep in mind, namely the linkage between the indigenous and the local knowledge and the product with traditional practice. Another point is the benefit and income generated from eco-labeling in which some parts can be dedicated for BRs conservation.

To establish eco-labeling, there should be a kind of standard or framework on what criteria should be considered in eco-product as well as the procedure itself.

Question: In core zone, can we have eco-labeling of products such as honey?

Answer: For the eco-labeling of honey in buffer and transition zone, the community just goes and takes the honey out without harming the environment. It is a case-by-case management of honey collection in the core zone. For instance, in Cambodia, it is allowed to fish in the core zone as long as they fish in the traditional way.

## **II. The 2nd Asia-Pacific Biosphere Reserves**

# Networks Strategic Meeting: Biosphere Reserves as Models for Alleviating Poverty through Ecosystems Services

*Day 2 (16 December 2014)*

The 2nd APBRN Strategic Meeting was held on the second day of the meeting focusing on Biosphere Reserves as Models for Alleviating Poverty through ecosystem services in APBRs, which is broader than the first day's meeting.

## **1. Introduction and Purpose of APBR meeting, Shahbaz Khan**

To successfully manage BRs in a sustainable way, it is necessary to work with more cooperation and networking, which demonstrate good living practices in BRs as living laboratories for interdisciplinary approaches to conserve biological and cultural diversity. By doing so, it also pictures the show casing of best approaches towards sustainable development and promotes national and international research in monitoring, education, and training.

It also needs to:

- Use social networks and electronic media.
- Enhance linkage with professional bodies within country networking between BRs.
- Link multilevel policy engagement.
- Standardize assessment methodologies and practices at country level.
- Share best practices across region on the conservation based economies.
- Enforce zoning and better harmonization/interactions in/among BRs.
- Exchange branding/market such as eco-tourism and eco-labeling, etc.

The Biosphere Reserves for Environmental and Economic Security (BREES) concept has been highlighted. BREES, funded by the Ministry of Education, Culture, Sports, Science and Technology of the Japanese Government works on 4 main objectives:

- Climate change (CC) mitigation and adaptation.
- CC mitigation and adaptation practices and policies.
- Environmental, economic, and social security.
- Learning alliances through the BR network.

To reach these objectives, a linkage with professional bodies within country networking between BRs is really a key success. Therefore, it is vital to scope two or three concept notes from which a joint action for the BRs regional networking can be established.

## 2. Biodiversity Conservation and Sustainable Development for a New Era of Post-MDFs, Do-Soon Cho, Ph.D

Biodiversity Conservation and Sustainable Development for a New Era of Post-Millennium Development Goals (MDGs) was presented, which came up with the concept of biodiversity and its values, the benefits of ecosystem services, the threats to biodiversity and conservation biology, together with the compatibility of BRs concepts to MDGs as well as Sustainable Developmental Goals (SDGs). Among the 8 MDGs, only one places importance on biodiversity conservation through environmental sustainability. Based on the report 2014 published by UNDP, only MDG-1 can be achieved while MDG-2 and MDG-3 are on road to succeed. But the rests are far from the MDGs. As a result, there are also some criticisms on MDGs:

- The MDGs do not place enough emphasis on sustainable development, especially in poorest countries.
- The data needed to measure progress towards many key MDG indicators is patchy, and there are often significant time lags.
- The MDGs fall short by not integrating the economic, social and environmental aspects of sustainability.

The open working group proposed 17 SDGs in which Goal-14 and 15 relate to biodiversity conservation and terrestrial ecosystems.

The Gangwon declaration on Biodiversity for Sustainable Development in CBD COP12 has called for the further integration and mainstreaming of biodiversity in the post-2015 development agenda. It also stresses the relevance and key contribution of the strategic plan for biodiversity 2011-2020 and its Aichi Biodiversity targets and vision for 2050.

**Question 1:** As human population keeps increasing, there will be intervention on pristine conditions, for example the core zone in BR. The ecosystems can be employed in the wrong or right direction. What is your view?

**Answer 1:** To return the restoration for some areas into pristine conditions, terrestrial regime has to be maintained before human's intervention.

**Question 2:** How do we integrate the scientific technology (GIS) and Environmental degradation so that we can make natural resource management and development more sustainable?

**Answer 2:** Of course, scientific technology can be used to manage natural resources. But sometimes it is difficult to shape specific community structure as human population increases dramatically.

## 3. Presentations of the winners of the 2014 MAB Young Scientist Award, Ms. Mehrasa Mehdadi and Mr. Thomas Edison de la Cruz.

- Sustainable Development of BRs through promoting key ecosystem services, Ms. Mehrasa Mehdadi on behalf of Ms. Atiyeh Kazemi Mojarrad

The topic is about the sustainable development of BRs through promoting key ecosystem services— a case study on small-scale products in Miankaleh BR of Iran.

It is a substantially successful approach which can be considered a best practice and can be applied to other BRs.

The main results of this project are:

- Direct employment of almost 600 people from local communities, drivers, and cooperatives and fruit dealers /sellers.
- Significant reduction in hundreds of cars and motorcycles entering the reserve,
- and less noise and air pollution.
- Local community aware of conservation which resulted in prevention of environmental degradation (destruction of vegetation, cut of trees, etc).
- The local community stopped illegal hunting and poaching that used to occur in this season, etc.

Some essential lessons learnt have been showcased:

- This project showed that participation of local communities in decision-making, management of the reserve and involvement in sustainable economic activity will result in better environmental management and less damage to the ecosystem and biodiversity of the reserve. Getting local communities trust will be possible once they are convinced about the direct benefits generated for them.
- Ecosystem services will become sustainable by participation of local communities and stakeholders, if the proper capacities are built within them.
- There is strong resistance among the local authorities to open up to new approaches- they prefer to continue with their old way of thinking of pure conservation.
- There are also several good recommendations to be mentioned:
- Supporting local communities/cooperatives to find markets to sell products directly.
- Establishment of a mechanism for fund mobilization within Department of Environment to be able to collect income for conservation activities.
- Studying other ecosystem services in Miankaleh BR including raspberry and dairy buffalo products for local community participation.
- Establishment of a pomegranate product factory in a place close to Miankaleh BR.
- Studying on ecosystem services in other Biosphere Reserve of Iran.
- Preparing Biosphere Reserve logo for other biosphere reserves in Iran.

Therefore, this project and its tangible results clearly show the advantage of ecosystem services of a BR and have brought changes for the local communities' livelihood.

**Question 1:**

- How much is the total investment you put into this project until it becomes sustainable and successful?

- How long does it take since you started this initiative until it became successful?
- What is the constraint that you face as it is not easy to implement this project?
- Sometimes it is difficult to engage the communities without the effort from the government as there are social conflicts in some regions. Did the Government support the project?

**Answer 1:** The budget was not too much because working with local authority in the province could be accessed. Local people could be convinced to work with local government. There were lots of meetings with local community with the support from the government. UNESCO's funds supported the two workshops. Besides that the projects got support from the community.

- This project has been started one year ago and it should continue as it has very good inputs and results and many things to learn from. For this project, working with local community is easier than working with local government. Because when they can see the direct income, they welcome the project. By explaining people what is BR and its importance, everyone could answer and comprehend that the BR can be resource income for next generation to come. Of course, it took time to explain the issues to local authority. They were just informed that if they accept the money, the entrance fees for example, people can enter and do everything in the area which can affect the natural resources.

**Question 2:** What is the long-term prospect for the continuous success as you are going to leave this project?

**Answer 2:** The first thing is that the Department of Environment should have authority to spend some money on this area. Based on the national rule, the Department of Environment can have no income from the Protected Areas and BR. However, the Department of Environment has started to negotiate with different officers to change rule. For instance, there are lots of tourists coming into the area, but there is no budget line for that. Thus, to have a trust fund is recommended and should be invested on conservation. Another point is that the local authority was suggested to encourage local community to have factories close to the area. Hence, they can sell their products and can have more income and research so as to produce other products.

**Question 3:** How this project in the future can have influence on poverty alleviation for local surrounding?

**Answer 3:** Local people can get income from the payment of ecosystem services. This income is not too much, but it can support their livings. Therefore, conservation is really needed.

➤ **Biodiversity, taxonomy, ecological patterns and conservation of myxomycetes and macrofungi, Thomas Edison E. dela Cruz**

The study was conducted in Puerto Galera Biosphere Reserve and Sablayan Watershed Forest Reserve. It highlighted the great importance on various kinds of microorganisms and their roles in food chain and food web, medicine, together with nutrients enrichment in soils and potential bioremediation, source of novel biactive,

secondary metabolites, and promising source of common enzymes with industrial application. However, they have not been considered in development decision-making due to their small sizes.

Based on the research, these organisms can be used to promote biodiversity conservation through capacity building by conducting workshops at school so that teachers can identify their specimens. Another method is the development of photo guides which can be brought to community and shown to tourists. In addition, there are learning materials for kids so that they will be motivated to learn more about biodiversity and these organisms.

**Question:** What is the overall action plan for this particular BR that you have chosen to work with? How does your program fit into that particular action plan and how do you expect these two have into the overall BR management?

**Answer:** Actually, what we are planning to do is to come up with publication once the project finishes. Hopefully, these publications can foster people involvement in conservation and management of BR. And on the other hand, what we are trying to do here is to slowly promote biodiversity conservation, namely microorganism conservation in workshops and learning materials as we are preparing.

#### 4. Biosphere Reserves as Models for Alleviating Poverty through Ecosystem Services

##### ➤ East Asian Biosphere Reserve Network Secretariat, Hans Thulstrup

The topic showcased the necessity of MAB networks. Sub-regional networks provide a bridge between the BRs and the global MAB community. So, the networks need BRs and the BRs need networks.

The East Asian Biosphere Reserves Network (EABRN) member countries are Russia, Mongolia, China, North Korea, South Korea, Japan, and Kazakhstan working on three focused areas: eco-tourism, conservation policy, and trans-boundary cooperation. Many research studies and projects have been extensively published which consistently supported by republic of Korea.

The network is an apolitical, science-based forum for collegial exchange across political and geographical boundaries, allowing for the MAB community to share and learn from one another which is a rare and much appreciated function and a tangible contribution to UNESCO's ultimate goals.

The theme for 14th meeting in Japan is likely to include:

- Local community leadership and engagement in BR development and management;
- Biosphere Reserve legislation.
- Therefore, as network it must work to ensure that:
- The achievements at the BRs are shared and thereby benefit others; and
- All BRs feel part of a global family, connected and supported by a worldwide network committed to the MAB principles and available.



➤ **South and Central Asia MAB Network, Mr. Ram Boojh**

South and Central Asia MAB (SACAM) network is a sub-regional network created for closer collaboration within the region. It focuses on various thematic topics for regional collaboration such as: traditional ecological knowledge, biodiversity conservation, forest ecosystems, land degradation, and waste management. SACAM Network contains 14 member countries. To date SACAM network has involved 2 international conferences in Madrid and Dresden and has held 6 significant meetings addressing mainly on biodiversity conservation and sustainable development.

SACAM's way forward will work on some essential key points:

- Set up MAB committees/Biosphere Reserves in countries which have none;
- Incentives to promote BR related research, education, and management;
- Trans-boundary BRs;
- BRs fund/SACAM Trust Fund;
- Formulate Expert group of member countries;
- Visibility.

➤ **Biosphere Reserves in Pakistan, Raza Shah**

There are two BRs in Pakistan: Ziarat Juniper BR in Balochistan and Lal Suhanra BR in Punjab. Pakistan has established planned intervention to sustainably manage BRs in the country by:

- Nomination of more Biosphere Reserves to MAB International Coordinating Council (ICC).
- Establishing UNESCO Chairs at Universities for MAB Programme.
- Supporting young scientists to take part in MAB Young Scientists Awards Programme.
- Promoting sustainable use of natural resources in BRs.
- Developing linkages with the similar sites in World Network of Biosphere Reserve (WNBR) globally and replicate best practices in the BRs of Pakistan.
- Building linkages with the international and regional forums of MAB Programme.

➤ **Interactive Session: "Activities, Questions and Recommendations on BR management"**

**Indonesia:** Regarding BR management, legal understanding between Government and local community is required, in particular, zonation. Many people do not understand which one is buffer zone, which one is transition or core zone. And many people say that they have their own land in the core zone. This becomes a conflict between Government and local community. So, that is why in terms of the local framework, synergistic options amongst stakeholders are needed. Generally, preservation of BR cannot be done through one party or the Government alone. Hence, other actors

have to take part in the management of the BRs. Finally, in Indonesia, in the five-year national planning, it is decided that BR should be one of priorities for national planners so as to promote ecotourism and as well as for environmental strategists through REED+.

**Vietnam:** In Vietnam, the best thing in my view is that they have done a lot of system dynamics modeling. There is a good framework which has been started; hence, those systems can be used by other BRs. There is good interaction between Australian Universities and the people in Vietnam. Thus, this model can be applied in other BRs.

**Kazakhstan:** There should be a changing role, as the key success for assessment of management effectiveness for BR. The different countries have different locations, natural conditions, especially different political systems which are so important. There is general approach for management of BR. But at the same time, the management effectiveness of different BRs cannot be compared. In this case, it would be great if MAB approaches on how to estimate the management effectiveness is created. It is not the comparative analysis approach.

**Kazakhstan:** Regarding how we should coordinate between networks on our activities, the SACAM, for example, there is a big diversity of countries and also in terms of BRs management. We would like to comment the great effort of Kazakhstan, particularly Mr. Jashenko who is active in participation and enthusiastic in the region and especially in BR nomination year after year. First of all, since our colleagues who are from one of the network such as SACAM have presented, we have to go more than that in terms of putting our energy together, working closely with each other and helping the secretariats and learning and sharing from each other. Secondly, I like very much the presentation on Eastern Network when he said that we really have to share amongst the network. I believe this is very important, which is not only within the network, but also in between. We should probably also have meetings by inviting experts and the MAB committee from other parties, with Europe for example, where we can interact, learn and share experiences.

**Nepal:** Currently, there is diversity among combination of BRs. Some countries have no BR, for instance, Nepal. Nepal will try to nominate some BRs. If there is any strategy, it can be combined, initiated, integrated. This is because all networks have to go together. Some countries are very elementary in terms of BR. There is a possibility of diversification within the networks. Thus, there should be some sorts of strategies, methodologies, and initiatives to promote sustainably coordinate amongst networks as a whole.

**Australia:** It could be really interesting the idea of developing accessible platform which could potentially bring together all the big issues with sharing best practices, developing more communication, collaborating amongst networks, publishing and disseminating research, but also raising awareness of BR. If there are more public awareness on the values of BR, that would be catalyst for those who want to prepare for the BR nomination.

## 5. MAB New Strategy 2015-2025 and Action Plan 2016-2025, Shahbaz Khan

The MAB Strategy will be adopted from the 27th Session of the MAB ICC session in 2015. The Action Plan is to be adopted at the 28th MAB ICC session in 2016.

The vision of MAB strategy 2015 – 2025 is “MAB and its World Network of BR”, envisions the world where people and nature live in harmony and in sustainability. Its mission is to assist member states to reach sustainable development goals through biodiversity conservation, sustainability science, policy and action. Also, the MAB’s overarching objective is to provide an effective contribution towards the implementation of the Post 2015 development agenda and the Sustainable Development Goals and related targets.

In addition, the new MAB Strategy 2015 – 2025 Zero Draft is available online in MAB website in early 2015. It has been prepared by MAB Bureau and Reference Group and evaluated from MAP Evaluation.

This new strategy also places some important strategic objective as the following:

- Enhance the conservation and sustainable use of biodiversity.
- Ecosystem services and natural resources.
- Support climate change mitigation and adaptation action.
- Promote the development and applications of sustainability science.
- Contribute to building green economies, societies, and human settlements.

## 6. Strategic Breakout Discussion

### ➤ Strategic Planning Session with sub-networks for Planning AP Projects – Report Back from Breakout sessions

To comply with the MAB Strategy 2015-2025 and Action Plan 2016-2025, the meeting was divided into 3 group discussions working on strategic objectives of the zero draft MAB strategy, MAB programme – Networking, communication and Monitoring, and Promoting the development and applications of Sustainability Sciences in BRs.

Each group produced very fruitful results as following:

#### **MAB new Strategy and others**

Having considered the strategic objectives of the zero draft MAB Strategy, the working group observed:

- All objectives are of relevance to the region and are closely interconnected.
- “Enhancing conservation and sustainable use” and “climate change adaptation and mitigation” capture the region’s priorities well.
- The primary immediate need in the Asia-Pacific region is to strengthen the connection between MAB’s global strategic direction and action at the site level, through the provision of specific guidance to the region’s MAB community. The lack of such guidance in connection with the launch of previous strategies was identified as a problem.

The group proposed three interconnected initiatives to respond to this need:

1. Development of a common framework for assessing Biosphere Reserve progress towards sustainable development objectives.
2. Development of an Asia-Pacific MAB strategy/action plan containing targeted guidance on issues of particular relevance to the region, including:
  - zonation
  - legislative status
  - policy formulation
  - linking national policy to local conditions
  - establishing financial mechanisms
  - enhanced monitoring guidelines
  - communication at the local level
3. Development of Asia-Pacific climate change adaptation and mitigation guidelines for Biosphere Reserves.

### **Networking, communication and monitoring**

The group has created several important strategies:

1. Build a national network of experts as a part of regional system of expertise headed by regional center (rotation in 4 years) followed by sub-regional coordinators (rotation in 2 years) and national coordinators, respectively.

National Coordinator (focal point) for each state builds a list of key national experts working on BR. Upon specific request from Sub-Regional Center or the coordinator organizes a temporary team of national experts working out the specific project; coordinator should communicate to sub-regional coordinator.

Sub-Regional coordinator collects all information, prepares sub-regional report and sends/brings it to regional coordinator. Sub-Regional Coordinator is responsible to organize the sub-regional meeting (one in 2 years) of national coordinators and leading experts.

2. Working out a website including: news and newsletter, information on BRs, E-journal, and publish information on existing journals.
3. General meeting of experts: Regional (every 4 years) and sub-regional (every 2 years) at least.
4. Regional project on comparative analysis on legislation devoted to BRs.
5. Use the common approaches resulted from other monitored projects and best practices in the networks (green economy, Climate Change mitigation and adaptation, ecosystem services, invasive species, etc.)
6. Financial issue.

**Comment:** There are two ideas which are not very clear that must be further discussed:

- The relationship between national MAB committee because most of MAB National Committees include expert members.
- During strategic management plan there were 6 network meetings in which wetland, dry, and climatic network should be included.

To sum up, we can learn from the last year Asia-Pacific meetings such as policies, recommendations to develop expert networks online platform which would be really interesting to combine with the structure we are designing in this meeting.

### **Sustainability Science**

The group came up with 3 essential strategies and some recommendations:

1. Developing new frameworks and reviewing current frameworks:
  - Developing a framework for Biosphere Reserve applications based on best practices and emerging and innovative examples.
  - Develop a framework for public-private partnerships.
  - Developing a Biosphere Reserve strategy for implementation based on sustainability science.
  - Developing a community based knowledge sharing framework.
2. Education and Engagement:
  - Engagement of youth, women and communities by hosting community events & developing online communities to share ideas.
  - Community best practices awards, youth award for innovative strategy.
  - Learning labs, youth camps and immersive educational programs.
  - Documentation and dissemination of research and best practice examples (online platform).
3. Broadening research:
  - Creation of a database of each Biosphere Reserve.
  - Exploring gaps and improving collaborations.
  - Developing better tools for research dissemination that is accessible for communities.
  - Developing frameworks for research outputs that will have more impact in communities.

### **Recommendations:**

- Develop a Sustainability Science Network within South East Asia and Asia-Pacific Biosphere Reserves that could be designed as an online platform for case studies, best practices examples, research dissemination and interdisciplinary collaborations.

- Develop a series of case studies (and interactive tool-kit) for innovative resource generation in BR communities to facilitate long-term sustainability science projects.
- Develop a tool-kit for publishing research that is accessible to integrate into community engagement projects and educational curriculum across the Asia-Pacific region. As an example, each BR research project could be required to provide a one page template for direct integration into education programs.
- Development of accessible resources on policy implementation and legal framework for Biosphere Reserves.
- Develop a series of Sustainability Science international research collaborations between BRs who already actively engaged in best practice examples.
- Develop a Sustainability Science mentoring program for leading BR communities to mentor emerging projects and communities.

**Question:** From a scientific point of view, how could sustainability science be translated into policies instruments, or management? We should first work on what sustainability science includes.

**Answer:** We are still talking about broad pictures. Of course, a more specific framework needs to be developed.

## 7. An Introduction on Angkor World Heritage and Water Management, Mr. Philippe Delanghe

Built between roughly A.D. 1113 and 1150, which encompasses an area of about 200 hectares, Angkor Watt is one of the largest religious monuments ever constructed. Its name means “temple city”. Originally it is built as Hindu temple dedicated to the god Vishnu. It was converted into a Buddhist temple in the 14th century, and statues of Buddha were added to its already rich artwork. Its 65-meter-tall central tower is surrounded by four smaller towers and a series of enclosure walls, a layout that recreates the image of Mount Meru, which is a legendary place in Hindu mythology that is said to lie beyond the Himalayas and be the home of the gods.

One of the major successes of the Angkor Empire was due to its mystery over the control of water from the Mekong River. Due to their engineering genius, the ancient Khmer built extensive irrigation and drainage system in order to manage the excessive water from the flood. This water was stored in the huge reservoirs such as the East and West Baray, and irrigated to the farmlands during the dry period. In this way, the Angkor was able to cultivate and harvest rice crops two or three times in one year. Such a high productivity of rice helped to strengthen the country’s economy significantly, thus enhancing its prosperity.

### III. Field Trip: Integrating Biosphere Reserves and Water management

#### *Day 3 (17 December 2014)*

A group of roughly 60 participants on the third day of the workshop went for a field trip to Prek Toal Core Zone located in Tonle Sap Biosphere Reserve, in Battambang Province.

Along 6 provinces: Banteay Mean Chey, Siem Reap, Battambang, Pursat, Kampong Thom, and Kampong Chhnang, the Tonle Sap is a unique lake among wetlands because of its prolonged and deep flooding. The lake shrinks and expands from 2500 Km<sup>2</sup> to over 12 000 Km<sup>2</sup> with maximum depth from 10 m to 11m. This change is because of the seasonal rhythm of the Mekong River. In rainy season, the high water level in Mekong impedes outflow from the lake and reverse its flow in Tonle Sap from May until July.

The trip left from Apsara Angkor hotel at 5:00am by buses. On the way to Prek Toal commune, there are many families living on the floating houses, which was a big surprise for most of the international participants. Next, the boats continued and arrived at the Visitor Centre of the Prek Toal commune, Tonle Sap BR. It is a nice place to visit since its beautiful view of floating villages together with lively forest and birds. Participants were guided around over there.

Having visited the Centre, the trip continued straightly with small boats to visit the bird conservation core zone. The group finally arrived at bird watching stations. It can be noticed that there are two bird watching stations on the top of the trees which can load 6 visitors each. As it is not allowed to enter the core area, the group watched the bird through telescope from distance.

After spending around 1 hour there, the group returned back and stopped at Osmose office in Prek Toal commune, the place where the group had lunch. Founded in 1999, Osmose is an NGO whose main vision is to integrate the Environment and Development Project in Tonle Sap BR, working specifically on bird conservation, environmental education, and ecotourism in Prek Toal. In this regards, benefits from ecosystem services can be brought to local communities. There, participants had the opportunity to see various kinds of handicrafts made from water hyacinth, a type of eco-labeling product. The group returned back and arrived at the hotel around 2 pm.

In the afternoon, a visit to Angkor World Heritage Site was organized with the collaboration of APSARA Authority and UNESCO Phnom Penh. Three main temples were visited: Angkor Watt, Bayon and Ta Prohm.

Angkor Watt was first a Hindu, later a Buddhist, temple complex in Cambodia and the largest religious monument in the world. The temple was built by the Khmer King Suryavarman II in the early 12th century in Yaśodharapura, the capital of the Khmer Empire, as his state temple and eventual mausoleum.

Bayon is a well-known and richly decorated Khmer temple at Angkor. Built in the late 12th or early 13th century as the official state temple of the Mahayana Buddhist King Jayavarman VII, the Bayon stands at the centre of Jayavarman's capital, Angkor Thom. Following Jayavarman's death, it was modified and augmented by later Hindu and Theravada Buddhist kings in

accordance with their own religious preferences. The Bayon's most distinctive feature is the multitude of serene and massive stone faces on the many towers which jut out from the upper terrace and cluster around its central peak.

Ta Prohm is the modern name of the temple at Angkor, built in the Bayon style largely in the late 12th and early 13th centuries and originally called Rajavihara. Located approximately one kilometer east of Angkor Thom and on the southern edge of the East Baray, it was founded by the Khmer King Jayavarman VII as a Mahayana Buddhist monastery and university. Unlike most Angkorian temples, Ta Prohm has been left in much the same condition in which it was found: the photogenic and atmospheric combination of trees growing out of the ruins and the jungle surroundings have made it one of Angkor's most popular temples with visitors.

### **Lessons Learnt**

Prek Toal Core Zone and its surrounding areas play an important role for bird conservation, other species, and the life of local people. It is a protected area and a habitat to all kinds of species including the endangered ones. Thus, it really attracts both local and international visitors to spend their holiday and see healthy ecosystems along the Tonle Sap Lake.

However, there are some negative points which can affect to the ecosystem and bird species over there. First, the sound from the boat is so noisy. It really disturbs birds and other species as well as villagers living around. Second, it is a matter of oil leakage from boat. Third, waste management problem is also essential. There should have proper places for waste disposal, thereby improving water quality and reducing water hyacinth growth.

All in all, Tonle Sap BR namely, Prek Toal is a great laboratory site where human and nature live together. Even though it appears with several problems in its management, sooner or later under the deep reform of governmental strategy, these problems will be solved for the sake of conservation and development. Particularly preserving its ecosystems and at the same time improving the livelihood of local communities will be achieved.



# IV. Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas

*Day 4 (18 December 2014)*

## 1. Welcome remarks

The Asia-Pacific Workshop took the last two days of the meeting to be completed. The fundamental objectives of this workshop on strengthening capacity for management of BRs and Protected Areas were to:

- Share best practices to build capacity for strengthened management of BRs and other Protected Areas.
- Encourage sustainable development activities in protected areas through BR examples.
- Strengthen regional cooperation in the area of management of Protected Areas, especially BRs.
- Introduce and spread the concept of Biosphere Reserves to other a wider audience.

**The expected results of this workshop were to:**

- Deepen the understanding of the role of Biosphere Reserves and other Protected Areas in terms of biodiversity conservation and sustainable development.
- Collect good practices for sustainable development in biosphere reserves and apply them to the management of Biosphere Reserves and other Protected Areas.
- Facilitate cooperation among Biosphere Reserves and Protected Areas in promoting biodiversity conservation and sustainable development.

### ➤ Evolution of the BR concept – Environmental Law and Economic Implications, Mr. Shahbaz Khan

The presentation mainly focused on the evolution of the BR concept with the implementation of Environmental Law and Economics Implications.

It began with some key word definitions. Law is the system of rules which a particular country or community recognizes as regulating the actions of its members and which it may enforce by the imposition of penalties. Policy is principle to guide decisions and achieve rational outcomes, which is a statement of intent, and is implemented as a procedure or protocol.

Environmental Law is a collective term describing the network of treaties, statutes, regulations, and common and customary laws addressing the effects of human activity

on the natural environment. It comes from different sources such as Legislation, Regulation, Court decision, International treaties, and foreign regulations. Its targets are to protect Environment against Pollutants, to facilitate Industries but at the same time not to harm Environment, etc.

Establishment of BR must follow its model law consisting of the following articles:

- Article 1: BRs are areas of terrestrial and coastal/marine ecosystems or a combination thereof, aiming to promote a well-balanced relationship between human beings and Biosphere.
- Article 2 – Criteria for designation referring to the inclusion of major biogeographic regions, the signification of biological diversity conservation, exploration opportunity for sustainable development of a regional scale, and demarcation of appropriate zonation.
- Article 3 – Process of designation. BRs are designated by the national administrative body responsible for natural conservation.
- Article 4: BRs are integrated into a National network of BRs, aiming to promote exchanges of experiences and the emergence of a common understanding of sustainable development.
- Article 5 – Functions: Biosphere Reserves aim to associate conservation and sustainable development resulting from the combination of the 3 functions.
- Article 6: Education is really important aiming to respect natural and cultural heritage.
- Article 7 is about the model of sustainable development, focusing on the management of BR.
- Article 8: BR could be able for performing Research.
- Article 9 – Zonation: Biosphere Reserves must fulfill their functions regarding conservation, development and logistic support through an appropriate zonation.
- Article 10 – Public and Private sector: The territory of biosphere reserves can be partly or wholly a public or a private property.
- Article 11 – Integration into protection and development policies:
- Article 12 – Integrated management policies for BR.
- Article 13 – Authority of management of BR: An institutional structure must be developed to manage, coordinate and integrate reserve programs and activities.
- Article 14 – A unified national policy: the identification of BRs from other conservation tools.
- Article 15 – Policy review: The redefining of management policies is an opportunity to review Biosphere Reserve objectives and to translate them into zonation.

### **Economics of Biosphere Reserves**

Opportunity cost: The opportunity cost of a choice is the value of the best alternative forgone, in a situation in which a choice needs to be made between several mutually exclusive alternatives given limited resources. Assuming the best choice is made, it is the “cost” incurred by not enjoying the benefit that would be had by taking the second best choice available.

### **Key Challenges for Biosphere Reserves**

Opportunity cost of enforcing core zone vs. marginal benefits from Ecolabelling, Ecotourism in core/buffer zones and enhanced Sustainable Development in the transition zone.

## **2. Roundtable discussion: field trip reflections, sharing experience from BR nomination and operation experiences**

In addition, there was a great roundtable discussion of experts who gave ideas on BRs nomination and operation – namely a case of Tonle Sap BR management. Many great impressions and challenging concepts were reflected.

### **➤ Impressions**

- The efforts in birdlife research and monitoring.
- The impression of Tonle Sap, the water in particular.
- It is very important to observe the good relationship between management and the local people in the BR.
- Tonle Sap is such a big ecosystem.

### **➤ Challenging concepts**

- This Biosphere Reserve does not adhere strongly to the BR concept, considering many people in the core area. Suggestion: Re-zonation of the site.
- The national MAB committees should include people from several disciplines such as agriculture, water resources, land management and bring all perspectives regarding BR management into the committee.
- The overuse of diesel, many motor-powered boats.
- Significant population in floating village, resulting in pollution.
- Balancing handicraft production with hyacinth and the conservation of the site.
- There is no sign, no entrance marker.
- Noise pollution to birds.
- In Russia there are two lake BRs; therefore, it would be great to make a site-to-site cooperation agreement with Tonle Sap Biosphere Reserve.
- Look at agreements between Ramsar, IHP, MAB to promote conservation of wetlands, bird habitats.
- The balance management of water can contribute towards the ancient system of water management of Angkor World Heritage Site.

- A board should be created to develop international cooperative projects for the Mekong region.
- There is intangible cultural heritage represented by the floating villages – a unique style.

➤ **Response of Cambodian delegate at Ministry of Environment**

Cambodian delegate welcomed to all the reflections and comments made. Surely, it is the fact that the population and tourism in the site are a challenge to the management. However, it is necessary to observe the orientation about how the management has been established. The management structure represents a compromise, an approach that has its roots in the civil war. Security is also an issue – the area was in peace which is only secure by the late 1990s. It took the Royal Government of Cambodia 14 years to develop the BR. And the BR represents the livelihoods for 100,000s of people. With the abolishment of fishing lots in the BR, local people will find it very difficult to make a living. They cannot relocate to the upland. It is great that many comments have been mentioned about resettlements. But it is an impossible case for Cambodia in terms of human rights issues. In addition, Tonle Sap BR already has a core zone which is not allowed for any commercial activities, but scientific research. Sustainable use zone is also established, a community zone where local activities are allowed. This specific zonation system was perhaps not presented to the Region because of the numbers of people lives therein. The BR, and the Prek Toal core zone, can only accommodate a certain number of people, which is like the temples at Angkor. Cambodia has worked closely with stakeholders at all levels and greatly supported the call for cooperation between the MoE and UNESCO Phnom Penh to revisit the zonation system and integration with the provincial management plan. Cambodia really appreciates such opportunities to exchange with experts from around the world. The BR is managed under the PA law, and this is not presently integrated with the overall land use planning legislation. Moreover, Cambodia is currently restructuring under a new government mandate, and considering a single national legislation for all which previously separated for agriculture, fisheries, environment – these could be now brought together.

### 3. Sharing Experience Session

➤ **Network of Biosphere Reserves in Russia, Mr. Valery Neronov**

To date in Russia there are 41 Biosphere Reserves which have been continuously nominated since 1978. BR is divided into 3 zones: Core area, Buffer zone, and Transition zone. The main functions of BR are:

- Conservation of biodiversity and ecosystems.
- Development connection of the environment and development.
- Support World Network for research and monitoring.

Some great BRs and their current activities were presented such as Far Eastern Marine

BR, Sikhote-Alin BR, Baikalskyi BR, Ubsunurskaya Kotlovina BR, Altaisky BR, Katunsky BR, Astrakhanskiy BR, and Kenozersky BR. For instance, Far Eastern Marine Reserve was established on March 24, 1978 and designated as BR in 2003. It is the important BR for MAB programme. Much attention has been paid for conservation of threatened species. The main directions of the scientific research in the reserve are the study and mapping sea bottom and terrestrial communities, inventory of biodiversity, monitoring and evaluation of anthropogenic impacts on biota, and the study of rare biology and threatened species. In addition, Russian Government has signed agreement on trans-boundary BRs with its neighboring countries such as Mongolia, Kazakhstan etc. Many activities have been taken into action in its BRs management such as establishing joint research teams with neighboring countries to protect biodiversity, creating ecological education campaign, adapting sustainable tourism development practices, encouraging cultural heritage management and preservation, etc.

➤ **Sorak Biosphere Reserve, Mr. In-ho Kim (Korea)**

Mountain Sorak Biosphere Reserve (SBR) is closely located to the East Sea at latitude 38°05'25"N ~ 38 °12'26"N and longitude 128°18'03"E ~ 128 °26'43"E. To see the breathtaking scenery of sea and the mountain, approximately 3.8million people are visiting Mt. Sorak BR. It lies on Inje County, Goseong County, Yangyang County, and Sokcho city.

Based on the history, Soraksan was designated as the 5th national park in Korea in 1970 and chosen as a nature monument in 1965. Also, internationally recognized for its rare species, Soraksan was designated as a Biosphere Reserve by UNESCO in 1982. IUCN has recognized its rich natural resources and labeled it category two in 2005. The total area of Mt. Sorak BR is 393 square kilometers which was extended in 1993 and 398 square kilometers of national park.

SBR is having 1621species including goral, otter, Flying squirrel and leopard cat and 1448 plant species such as Creeping Pine and Korean Edeleweiss.

**Main Activities of Mt. Sorak BR are:**

- Conservation Activities - Soraksan National Park office has put a lot of efforts on:
  - ✓ Restoration of endangered species in Korea (by rescued & treatment, GPS instillation, return to forest, tracking location, installing unmanned camera, and monitoring).
  - ✓ Habitat Restoration of Korea Edelmeiss (by increasing *Leontopodium leiolepis* Nakai and habitat restoration through transplant).
  - ✓ Habitat Restoration of Creeping Pine (by collecting seed, transplant and restoration).
  - ✓ Illegal trail of Restoration: continuous monitoring restored area (native vegetation transplant, 1 year and 2 year observed).
  - ✓ Wildlife Protection Management (by preventing patrons from wild animals, crackdown illegal hunting, recued wild animals & bird, road- kill, and plant monitoring).

- ✓ Law Enforcement on Illegal Acts (night hiking crackdown, demolishes illegal building, bathing in valley, and rock climbing without climbing permit).
- ✓ Partnership with Community (Joining UNESCO ESD program, Local consultative group, Volunteer program, Local festival, International cooperation, and increase in local income).
- Visitor and Facility Service Activities:
  - ✓ Interpretation and Environment Education program (mountain climbing camp, nature interpretation, NP forest kindergarten, visitor satisfaction, Eco-tour program, and visitor center).
  - ✓ Construction and Maintenance Management (falling rock prevention, repair highland facility, bridge safety check, safety facility installation, repair decrepit facilities, and shelter construction).
  - ✓ Safety and Emergency Services (search missing people, rescued sufferer, patient evacuation, rescue training in off-season, first aid, and junior ranger school).

➤ **Sinan Dadohae Biosphere Reserve, Mr. Jang Piljae (Korea)**

Sinan Dadohae Biosphere Reserve (SDBR) is a part of an archipelago consisting of 1,000 islands in sinan-gun, Jeollanam-do, Republic of Korea. This area has a characteristic of a rias coast and its coastal area is irregular. On these reasons, the area has an open tidal flat and many tidal waterways with low water. Therefore, only small boats can come and go free. The core area is composed of a "Patch Mosaic" reflecting various inhabitants, ecology, and the characteristics of the coast like a Forest Reserve, habitats of rare and useful plants, natural monuments, Dadohae Marine National Park, and tidal flat of having ecological diversity.

Thought to be extinct, the rare seaweed, Halliburton, inhabits the oceanic area of SDBR. In addition, there are 24 species of seaweed, 117 species of invertebrate animals, and 233 species of fish.

The management of SDBR associates with 4 main divisions:

- Maritime resource preservation
  - ✓ Establish the management direction: through investigations, monitoring, and research. And we also do our efforts to improve the habitats of species for rich biodiversity and recovery of damaged areas and trails.
  - ✓ Program Activities: Interpretation in eco-exhibition hall, method of monitoring birds, monitoring of the marine resources.
- Environmental Protection
  - ✓ For protection of park resources: (Illegal crackdown, Marine pollution incident response, coastal clean-up volunteers, park and landscape improvement).
  - ✓ Program activities: pushing campaigns continually (Smoking zero movement, Maritime Tort patrol, Coastal clean-up activities, Electric patrol cart).

- Visitor service work

There are efforts to provide high quality services through expansion of facilities and professional programs, and provide information and interpretation programs for park visitors including eco-tourism in SDBR.

- ✓ Environmental education for future generations.
- ✓ Ecotourism in SDBR.
- ✓ Ecotourism in Meongpum Village.
- ✓ Accident Prevention.

- Local cooperative work

To increase benefits to the local community in National Parks zone, there are designation of two villages of Excellence and operation of volunteer programs for local residents.

- ✓ Meongpum Village operation.
- ✓ Public participation in park management.
- ✓ National park residents support.
- ✓ Strengthen community communication.

➤ **Corporate Social Responsibility and Biosphere Reserve Management, Ms. Umi Karomah Yaumidin**

The presentation focused on a case study of Corporate Social Responsibility PT. Sinar Mas Group Tbk. in Giam Siak Kecil Bukit Batu Biosphere Reserve. Corporate Social Responsibility (CSR) guidance involves in three main components: Society, Economy, and Environment. CSR commits to sustainable development that integrates the 3P concepts (People, Profit, and Planet). The criteria of the three components are:

- Social sector: responsibility to stakeholders.
- Economic sector: responsibility to stakeholders in the value chain and to shareholder.
- Environmental sector: responsibility to sustainable resources, support nature and future generation.

To implement CSR, the Synergy Model of Social Responsibility (SR) was created. It results from the involvement of multi-national and international parties including Local Government, Corporations, Society, NGOs, Media, Consumer, etc. The requirement conditions of the Model include:

- Clean of local government: no corruption.
- Participation of local Community: stages model for communities' engagement.
- National government support.

- Volunteer leadership.
- Credibility of trust fund.
- Multiple stakeholder engagements.

Research findings addressed 3 main groups: Local Government, Corporations, and Society.

- **Local Government:**

- Low understanding of SR as well as BR concept.
- Persuasive method: there is no Local Regulation on CSR.
- Regular programs for society empowerment to synergize with CSR programme can be designed.
- CSR form have already existed, but there is no concept, mechanism, and planning particularly for Biosphere preservation.

- **Corporations:**

- CSR programs were implemented by company.
- CSR programs are productive activity and community empowerment. But it can be unsuccessful due to resistance of community mindset.
- There is no best practice guidance and standard used for the CSR programme.
- There are unsynchronized activities with Local Government programs for social economic empowerment.

- **Society:**

- Strong dependency on forest resources.
- Unclear area of boundaries zone. People's land and garden are inside the core area.
- Several potential activities to be established: Farming (pineapple, mushroom, plant nursery), Fish pond, Duck farm, and Micro-small enterprise: pineapple cake, fish crackers.

However, there are some challenges with CSR implementation:

- Community participation.
- Security area.
- Stakeholder's disagreement on CSR.
- Turbulence in the global economy.
- Changes in Government Regulation.

**Comment:** Concept note for having Corporate Social Responsibility (CSR) into BRs program was highlighted. Based on the experience of BR management in India, there are many major multi-parties coming into the BR. There would be huge exploitation of prejudice in the region. People have introduced alternative livelihoods, namely exotic species into the BR by engaging them with production cultivation. And these



invasive species invade into the areas and impact on coral reefs. There is also a special team which engages from the government side for actually expanding these invasive species for the sake of the company's manufacturing products. Because of this experience, there should be rationalization and strict guidelines before CSR enters into the BR. Precaution has to be taken effectively for promoting BR conservation.

#### **4. Best Practices of Ecotourism and Local Product Development for Sustainable Development, Palawan BR, Mr. Madrono P. Cabrestante Jr**

Ecotourism is travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as many existing cultural manifestations (both past and present) found in these areas. Ecotourism is defined by the International Ecotourism Society as "Responsible travel to natural areas that conserves the environment and improves the well-being of local people".

- Six basic characteristics of ecotourism:
  - ✓ Travel to undisturbed natural areas or archaeological sites.
  - ✓ Focuses on learning and quality experience.
  - ✓ Maximize economic benefit for the host or local community.
  - ✓ Ecotourists seek to view rare species or spectacular landscapes.
  - ✓ No depletion of resources, rather, sustains the environment.
  - ✓ Appreciation and respect local culture and traditions.
- Ecotourism Concepts and Principle:
  - ✓ Conservation and sustainable use of biodiversity.
  - ✓ Providing local communities the business opportunities to sustain their wellbeing.
  - ✓ Sharing experience and promoting conservation awareness.
  - ✓ Responsible for any tourism industrial services.
  - ✓ Ensuring appropriate development and visitor control.
- Typical eco-tourism activities can include: biking, hiking, camping, cultural activities, swimming, surfing, snorkeling, rafting and boating. The categories of eco-tourism include adventure travel, such as white water rafting or jungle treks, and nature based eco-tourism, such as wilderness camping trips or responsible use of the land.

#### **Ecotourism Products Development**

An ecotourism product is an experience intentionally put together for the satisfaction and enjoyment of visitors. It is composed of both tangible and intangible elements found on site which collectively contribute to the quality and value of the experience.

- Five Basic approaches in products development:
  - ✓ Address quality, authenticity, and security (Quality gives attention to detail and

understanding customer needs; authenticity is about meeting a visitor aspiration of 'seeing the real thing' while respecting the sensitivities of local communities and environments; and security is about visitor safety).

- ✓ Give priority to the interpretation of nature and culture (inherent quality of the landscape and wildlife and providing both educational and enjoyable experience).
  - ✓ Design and manage service facilities to maximizing sustainability (good practices in this area include: eco-lodge design and management; village based accommodation, home stay programs; use of local produce and traditional dishes; and handicraft production).
  - ✓ Address destination as well as individual product issues (take account of infrastructure, environmental management and visitor services in the destination as a whole).
  - ✓ Relate ecotourism to sustainable tourism activities (some ecotourists are looking for activities such as hiking to complement the product offer in mountain areas; while in maritime locations such as small island states, activities like diving and yachting are more environmentally sustainable).
- The "Mediterranean Experience of Ecotourism Network" highlight the best international ecotourism practices, where the existing ecotourism strategies and approaches worldwide were analyzed. Ecotourism best practices are categorized as to:
    - ✓ Management: plans and programs affecting natural areas, standard and regulations.
    - ✓ Facilities, services, infrastructure: transport, information, or accommodation facilitating tourist enjoyment.
    - ✓ Conservation: promoting sustainable development and environmental protection.
    - ✓ Local communities: inspire local communities to participate in protecting environmental ecosystem for improving the environmental quality and people well-being.
    - ✓ Cultural heritage: preservation, or promotion of cultural heritage.
    - ✓ Monitoring: monitor tourists' profiles or impact on tourism areas.
    - ✓ Marketing: commercialize or promote activities and products.

Some of Palawan BR's ecotourism best practices that were highlighted are being implemented in the following:

- ✓ Tubbataha Reefs Marine Park (user fee system and sharing scheme involves the local government unit, fishers, and divers and dive operators)
- ✓ Kayangan Lake in Coron Island (the indigenous people manage the ecotourism site and benefit from it)
- ✓ Puerto Princesa Underground River (declared as one of the New 7 Wonders of Nature, is among the country's premier eco-tourism destination; jungle trekking and mangrove forest paddle boat tour are being handled by indigenous peoples and local communities).

In conclusion, Ecotourism brings more people movement and consumption, which may lead to local environmental ecosystem conservation or cultural change. Also, Ecotourism should consider the three pillars of sustainable development: Economic Growth, Social Equity, and Ecological and Environmental Conservation.

**Question:** Which are the key challenges which can be the key success for sustainable management of BR in Palawan?

**Answer:** In the past, there was too much exploitation in the island-province of Palawan. However, the National Government has been encouraged by environmental groups to protect the area. In 1992, a special law was formulated in order to conserve biodiversity due to the uniqueness of the island. Palawan actually needs support. Secondly, the key is the lobbying between National Government Agencies and the local government units that Palawan needs to be protected and conserved. The best way of lobbying is the international recognition for Palawan when it was designated as a biosphere reserve.

Without that, it is so difficult to encourage the Government to conserve Palawan's natural resources, as there are already existing communities and local government units in the province of Palawan. People have travelled to and inhabited the Philippines' last frontier owing to its openness area. To overcome problems of unregulated resource use, there were initiatives in conservation supported by the Local Governments of Palawan for the Philippine Congress to pass a specific law for the island province. Ever since the "Strategic Environmental Plan for Palawan" law was passed, the local communities, government agencies or ministries, policymakers, academicians, and the civil society supported it and put effort to conserve the area. And since investments, commercial activities and businesses affecting Palawan's environment have already taken place, it was really difficult for these interest groups to give up their investment interests. However, due to the lobbying of local government leaders and civil society, they were able to convince investors to give up and focus their interest instead towards environmental conservation.

# V. Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas (Day 2)

*Day 5 (19 December 2014)*

The second day of the Asia-Pacific workshop was constituted by 5 main substantial lectures:

## **1. Conservation of Cultural Diversity and Traditional Local Knowledge – Use of Traditional Knowledge to Protected Area Management, Mr. Hans Thulstrup**

The presentation pointed out the BR of small islands in Pacific region. There are three main common perceptions of the Pacific region.

- Vast area with huge cultural and environmental diversity which can attract many tourists.
- Harsh environment human habitation – limited land mass, isolation, exposure to disaster risk – the risk from CC such as sea level rise.
- Colonization and successful settlement possible due to highly advanced indigenous knowledge systems, technologies and management strategies.

There is a need for BR because local and indigenous knowledge and its transmission are under threat – a distribution of risk through tenure and kinship systems for example. To date there are three Pacific Biosphere Reserves: Ngaremeduu, Utwe, and And Atoll BRs. Pacific BRs serve to demonstrate the importance of local community leadership in Protected Area management, the significant role that local and indigenous knowledge can play sustainable management of biodiversity, and the successful integration of high-value conservation area with sustainable human use and access.

However, the region still faces serious issues to be sorted out:

- Continued debate and diverging opinion about the appropriate governance of the core zone.
- BR zonation concept does not allow for consideration of temporal zonation.
- Integration of local and indigenous knowledge systems into BR concepts and management always represents a compromise, an element of validation by a science-based system.

In summary, it is a compromise, but a tremendous opportunity for MAB at the global level, and for ensuring recognition and acknowledgement of local and indigenous knowledge in Protected Area management.

## **2. Promotion and Communication of Biosphere Reserves with Local Communities and the General Public, Ram Boojh**

The presentation basically addressed the UNESCO activities involving local people, particularly education and communication. UNESCO is the first international agency, which started with ecological programme as part of the scientific programme including environment. MAB is one of the main programs therein. It is for the improvement of the relationship between people and their environment globally.

Characteristics, zonation concepts, procedural framework of BRs are highlighted based on Seville Strategy and statutory framework together with the Madrid Action Plan 2008-13.

In response to UNESCO strategic objectives the Five “Cs” referring to Credibility, Conservation, Capacity-building, Communication, and Communities in relation to World Heritage, the BR Interpretation Centre should be built so that it can enhance awareness about the value of BR, promote the visits of people to Natural and Cultural Heritage Sites, impress on visitors the critical link between environment and sustainable development. This can be done through the increased engagement with all stakeholders to build awareness and support. A World Heritage Biodiversity Programme in India (WHBPI) whose objective is to strengthen biodiversity conservation in Protected Areas is a substantial establishment. The programme involves number of actions such as providing scholarships, awareness and advocacy programme for school children and local community, creating a unique ecotourism model, strengthening capacity for protection, improving the quality and diminishing wilderness experience.

Therefore, MAB can leverage progress towards conservation objectives by:

- Building broader public/political support for conservation;
- Defining clear limits to development.

## **3. Biosphere Reserves in Iran: Success and Challenges, Ms. Niloofar Sadeghi**

The presentation addressed two main cases of BR: the success and challenges. To date Iran has 10 BRs. In addition to BRs, there are different management systems. For instance, National Parks are structured straightly Protected Areas and at the bottom, protection is not that much straight anymore. BR in Iran is not a kind of legal setting as RAMSAR site for example. In 1970, the concept of BR was introduced in Iran. Only until 2010, the UNESCO BR's concept was registered and appreciated by international organizations.

Regarding the BR management, it is really interesting on how BR becomes challenging. But even so, it has become very successful. It is the fact that the BR is surrounded by wetland area. However, the wetland is drying up very rapidly. Another thing is that large amount of water in wetland was consumed for agriculture. Also, farmers are depending very much on wetland. To solve this problem, from a UNDP project, there was an initiative to come and train the farmers on new water saving method for irrigation. Having trained, farming practices were set up and later applied in the farmers' farms. By doing so, farmers have learnt a lot from such innovative mechanism:

- Understand new irrigation method.
- Learn how to make new compost and use it as fertilizer.

- Select and cultivate crop that demand less water.
- Increase economic benefit: i.e. yield has increased to 148 more times.
- Steward the natural resources.

In the project there was also great emphasis on women involvement. There was a group of women whom were trained and go back to villages as ambassadors of the project in order to share the knowledge to households and community. Also, small grant fund was established and run by women. The trust fund were managed and given to those who really need for farming activities, conservation importance, and investing on new irrigation technology.

At the beginning, there was a lot of resistance from both farmers and especially Ministry of Agriculture. But when they can see tangible resources and economic benefits, they are happy and are willing to adapt and apply to other places.

However, one method cannot fit for all BRs. The case of Lake Umir is a really good example. The Lake has dried up now and is shrinking since 1984. There are 3 main reasons contributing to such problem.

- The huge river system and catchment area are used for feeding the village.
- The number of dams increases.
- The growing water dependent agriculture.

The Government has big political will to solve this problem. Some important suggestions have been proposed:

- The appropriate zonation.
- Method for water saving during the agricultural processes.
- Alternative livelihoods from MAB programme.
- Training courses on functions of BR.
- In case of Lake Umir, the core zone is at lower part of the lake. So there is suggestion to be review by ICC.

#### **4. Biosphere Reserves: Zonation and Management, Professor Roman Jashenko**

The presentation comprised the principle of zonation and management of BRs. To date there are 631 BRs site in 119 countries. BRs' criteria are being assessed to create special tools in management of BR given the fact that there are BRs which do not meet the criteria.

In the statutory framework of the World Network of BRs (WNBRs), the combination of the tree functions (conservation, development, and logistic support) is essential for the management of BRs. In addition, to provide legal zonation, it is necessary to use the 7 important criteria for BR design:

- The inclusion of ecological system representative of major biogeographic regions.
- The significance for biological diversity conservation.

- Exploration opportunity and demonstrative approaches to sustainable development on a regional scale.
- Appropriate zonation to serve the three functions of Biosphere Reserves.
- Appropriate zonation should include a legally constituted demarcation of core area, clear buffer zone identification, and an outer transition area in relation to the function of each corresponding zone.
- Dissemination the organizational arrangements of BRs to all stakeholders involved;
- Provisions should be made for
  - a. Mechanisms to manage human use and activities in the buffer zone or zones;
  - b. A management policy or plan for the area as a Biosphere Reserve;
  - c. A designated authority or mechanism to implement this policy or plan;
  - d. Programmes for research, monitoring, education and training.

The integration between the ideal model scheme of zonation of BR and its function has also pointed out. To send proposal to UNESCO for BR nomination, it is important to identify the border of the transition zone. Previously, there was no legislation of BR management for transition zone which was the weakness in the past. However, now it is a restricted requirement.

In Kazakhstan, the main problem in BR zonation and management is how to bridge between BR UNESCO concepts to BR national system of natural Protected Area. Nevertheless, they can find the way to correspond UNESCO concepts. Based on national legislation, the core zone is called zone of strictly protections and the regime corresponds to buffer zone of BR; therefore, it is easy to design BR and propose to UNESCO. There are cluster core zones in Kazakhstan, because some areas cannot be avoided using for the benefit of local community, such as the Ural River. Additionally, core zone cannot lie on border. If it does, the boundary of core zone should be offset one or two kilometers from the border which should be then considered buffer zone.

For transboundary BR nomination, Kazakhstan decided to combine zonation of Katunskiy BR and Katon-karagay BR with Russia in which several cluster core zone lie.

The concept of Green Economy is really important to introduce in BR, especially in transition zone. Green Economy works on 7 main key trends:

- Introduction of renewable energy sources.
- Energy efficiency in housing and communal services.
- Organic farming in agriculture.
- Improving waste management system.
- Improving water management.
- Development of “clean” transport.
- Conservation and effective management of ecosystems.

As population is growing up, mental illness of people, which is not favorable for living, is a case for concern. Green economy is a key role to encompass the effective resettlement stability to make people live with nature.

## **5. Building Social Capital, Mr. Colin Campbell**

The main objective of this interactive lecture was how to use social capital for BRs management and how to build it. Social capital is the glue that holds societies together. Without it, there can be no economic growth or human well-being. It can also find the way to engage the communities and how to get them involved.

In addition, the topic focuses on how to create a sustainable economic development in a way that supports the value of BRs and Economic benefits in the BRs.

In Scotland, Assist Social Capital (ASC) supports communities, organizations and groups to tap into their internal strength and assets by enabling social capital. Nowadays, there are two modern BRs in Scotland that apply social capital.

In the framework to develop the social enterprise, four factors are necessary to be included:

- Factor 1: Viable business Model: the values based but not grant that protects sustainability, viability, and independence.
- Factor 2: Finance Social Investment (SI): investment for a social return rather than just a financial return.
- Factor 3: Market opportunities: interests in opening up public procurement which allows BRs to get into the bigger market. The importance of using local products, job and also providing short supply chain help reduce CO2 that is sustainable.
- Factor 4: Public Participation. Something UNESCO requires for BRs and especially in transition zone but not only in this zone and in every aspect which will be interrelated, thereby providing benefit for community.

When it comes to Social Enterprise: The more connected you are the more likely you are able to be in the market and sustain your products and outputs for social and environment benefits. There are manifold positive outcomes for BRs within short term, medium term, and long-term benefits. Be in mind that social capital is the operating system of every community. Based on the research, with high social capital, people can live longer. And with participation from different communities, the system will become resilience which procures more opportunity. In addition, it also enables community to increase its capacity to self-organize and move from dependency towards resilience which can be reached through rational elements constituting Shared norms and Values, Trust and Reciprocity.

For instance, every individual in the world is unique; however, there is a basic framework that the unique identity can be built. Social capital is like building lodge community. It is a basic operating system where people can build the value of the cultural heritage, thus creating the uniqueness which can be identified though Trust and Reciprocity. Reciprocity is about two- way relationship; Trust is always the key success, but it is very difficult to be trusted. Nevertheless, it can happen among people through the opportunity of working together and learn from each other. And finally, social network can be constructed. If the



network is taken away, the achievement will be limited. The way it is described is Bonding, Bridging, and Linking. Bonding refers to the relationship which is close and relevant to the community to exist. Bridging is bringing the community or organization that relates to each other together. The World Network of BRs is being discussed. And each network of BR has different characteristic, so it is necessary to build social network. In addition, if the values of all stakeholders in the BRs have been taken into consideration, there will be different interests from different BRs or Network of BRs. Consequently, there will be social conflicts within all stakeholders of different perspectives as there are different values of individuals. However, social network still can be established by bringing the important interests of them together and create the opportunity to work together.

➤ **Plenary discussion on appraisal of training and future training program**

**Question 1:** In IRAN, what is the Government going to do? Should the Government invest some money to the resettlement of people in Lake Umir?

**Answer 1:** Actually there is a lot of effort from the Government right now. The Government is spending 500 million US dollars for the sake of lake restoration. However, it does not happen overnight. It takes years and a lot of effort and commitment from local people themselves. Because they are the ones who should give up some of water consumption they are consuming for the sake of the lake. Hence, a lot of things are being done right now and there is so much money to be invested.

**Question 2:** IRAN has many regions which are famous RAMSAR regions. How many RAMSAR sites in the country? And what is the relationship within them?

**Answer 2:** IRAN has around 20-30 Ramsar sites but they are not parts of the legal environmental framework. So, although they do have the status, the legal framework and regulation governing them is pretty much a national system. From UNESCO side, it would be the necessity to launch a project to develop the capacity building within the National Government and also from top-down reforming to expert levels at the different Local Governments, universities. Hence, they would be prepared and have the same mindset to start to adopt and come up with some changes in the national level to accommodate the BR conservation. Otherwise, main leader protection system will all respect IUCN categories.

**Question 3:** Do you have resource zonation in IRAN? If so, do you have committee and how this committee integrates these resources? So, can people use the resource regarding to the zonation? And finally, what model is being used for management of watershed in the lake?

**Answer 3:** Model is being used; however, all of these models have limitations and uncertainties. Therefore, it is very essential to calibrate and verify whether the model is compatible to the local context. Interesting has been put in producing a kind of model that can be used by decision-makers. Another problem that could come is the downscaling as BR is very small.

**Question 4:** There are 10 BRs in IRAN. Can you tell what kinds of institutions, mechanisms that you have for these BRs management? And whether you keep that for success or challenges?

**Answer 4:** Actually it is not from UNESCO side. Firstly, observation has been made. Then technical assistance was provided whenever needed. The institution for BR management is not anything different from the national system. And the national system has put Protected Area as National park. It is not much align with BR system. It just carries BR status but when it comes to legal setting and legislation, it is just much a national park. And it is virtually based on IUCN classification management part, not based on UNESCO BR management zonation part. So, this is yet to be achieved. What can be done is to work from top-down and bottom-up at the same time with various experts from different fields. Hopefully, BR management could enter into legislation system in the near future.

**Question 5:** As a general comment for updating the discussion, I have observed that we had a kind of discussion which is not the soft version BR in terms of restriction or utilization of resources in BR, the so-called “3 zones”. I think the ultimate goal is to achieve ecologically sustainable for this particular BR. Giving context of developing countries, Cambodia for example. The restriction and regulation imposed on each zone, it varies from country to country, from context to context. Thus, I would like to some extents discuss the responsibility on how can we integrate the restriction and regulation so that we can get better understanding on how BR could be manageable, implemented in the view of the ecological management of BR.

**Answer 5:** This is a very good comment. It needs to be discussed how BR can be used. Of course, it is various from country to country. There is no successful number one BR. It is different from case to case as it is just a learning site. Such gathering to share experience, to see how others are doing is really a great point.

To sum up, the meeting has brought together the case studies knowledge and experience on BRs management from the Southeast Asia and Asia-Pacific Region as a whole. It has also formulated firm frameworks and recommendations on how to leverage the BRs for alternative livelihood through sustainability design, ecotourism, and eco-labeling. Discussions on how BRs can serve as models to contribute to the implementation of Post 2015 Development Agenda and Post Map WNBR management, together with the future cooperation activities between Asia-Pacific BRs and MAB national have been profoundly raised and stressed. Finally, the management of BRs and Protected Areas concepts has also been delivered, so that in the future BRs can contribute to the aim of Poverty Alleviation and other Post-2015 great aims through their ecosystem services.

# Annex I: Agenda

## Meeting Report The 8th Southeast Asia Biosphere Reserves Network Meeting The 2nd Asia-Pacific Biosphere Reserves Networks Strategic Meeting and Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas

Siem Reap, 15 to 19 December 2014

### Programme

Venue: Apsara Angkor Hotel

National Route 6, Airport Road

Siem Reap / Angkor

Tel: (855)63-946 999; E-mail: [hotel@apsaraangko.com](mailto:hotel@apsaraangko.com)

URL: [www.apsaraangkor.com](http://www.apsaraangkor.com)

Day 1 – Monday 15 December		
SeaBRnet Meeting: Biosphere Reserves as places for sustainable development through ecotourism and eco-labelling		
08:30-09:00	Registration	Master of Ceremonies: Cambodia
09:00-10:00	Formal opening session of the joint event and welcome remarks (Master of ceremony from local host)	<ul style="list-style-type: none"><li>• Cambodian National Anthem</li><li>• Governor of Siem Reap (H.E Khim Bunsong)</li><li>• UNESCO Phnom Penh (Ms Anne Lemaistre, Director &amp; Representative of UNESCO Phnom Penh)</li><li>• Korean National Commission for UNESCO (Mr Kang Sangkyoo, Director of Sciences)</li><li>• UNESCO Regional Science Bureau for Asia and the Pacific (Hubert Gijzen, Director UNESCO Jakarta)</li><li>• Minister of Environment of Cambodia (H.E. Dr. Say Samal)</li></ul>

10:00-10:30	Photo Session and Coffee break	
10:30-10:45	Introduction on SeaBRnet meeting	SeaBRnet Secretariat (Mr Shahbaz Khan, UNESCO Jakarta)
10:45-11:15	Keynote addressess: Biosphere Reserves as places for sustainable development through ecotourism and eco-labeling	Ministry of Tourism Cambodia and Wildlife Conservation Society Cambodia
10:15-11:30	Q&A on meeting objectives and keynote Moderator: Mr Shahbaz Khan	
11:30-12:15	Country BR presentation (part 1) 10 min each plus 5 mins Q&A Moderator: Ms Kristine Tovmasyan	Indonesia (Mr Purwanto, Mr Supriyanto), Myanmar (Mr Than Htay), Philippines (Ms Barrientos),
12:15-13:15	Lunch	
13:15-14:45	Country BR presentation (part 2) 10 min each plus 5 mins Q&A 15 mins discussion at the end Moderator: Mr Hans Thusttrup	Thailand (Ms Nuipakdee), Vietnam (Ms Nguyen Thanh Ha), Malaysia (Ms Zen, Royal Belum)
14:45-15:00	Coffee break	
15:00-17:00	Special focus on Sustainability Science Cambodia (Moderator: Mr Shahbaz Khan) <ul style="list-style-type: none"> <li>• Introduction to Sustainability Science</li> <li>• Fishery Management in the Tonle Sap Biosphere Reserve &amp; Mekong River</li> <li>• Education for Sustainable Development: “Biodiversity Education Project” in the Tonle Sap Biosphere Reserve</li> <li>• Tonle Sap BR</li> <li>• Water Management in Cambodia</li> </ul>	FiA (Mr Pich Serey Wath) UNESCO Phnom Penh (Ms Iñiguez de Heredia) Tonle Sap BR- MoE (Mr Long Khen) MoWRAM (Mr Suy Sovann)
17:00-18:00	Strategic Discussions on SeaBR Future (focusing on Ecotourism, Ecolabelling and Sustainability Science). Summary and conclusions	Group facilitators and SeaBRnet Secretariat (Mr Shahbaz Khan, UNESCO Jakarta)
19:00-21:00	Welcome Dinner by MoE Cambodia	

## Day 2 – Tuesday 16 December

### APBRN Strategic Meeting: Biosphere Reserves as Models for Alleviating Poverty through Ecosystems Services

(Master of ceremonies – Ms Siti Rachmania, UNESCO Jakarta)

09:00-09:30	Introductions and Purpose of APBR meeting	Mr Shahbaz Khan, UNESCO Jakarta
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09:30-10:00	Keynote speech: Biodiversity Conservation and Sustainable Development for a New Era of Post-MDGs (20 min) Q&A (10 min) Moderated by Mr Philippe Delanghe	Do-Soon CHO, Ph.D. Professor at the Department of Life Sciences, The Catholic University of Korea
10:00-10:30	Coffee break	
10:30-11:10	Presentations of the winners of the 2014 MAB Young Scientist Awards 15 min each plus 10 min Q &A Moderated by Ms Niloofar Sadeghi	<ul style="list-style-type: none"> <li>• Ms Mehrasa Mehrdadi, Iran</li> <li>• Mr Thomas Edison E. dela Cruz, Philippines</li> </ul>
11:10-12:15	<b>Biosphere Reserves as Models for Alleviating Poverty through Ecosystems Services</b> Sub-network reports aided by MAB National Committees and individual BRs	<ul style="list-style-type: none"> <li>• EABRN Secretariat (Mr Hans Thulstrup, Mr Valery Neronov)</li> <li>• SACAM Secretariat (Mr Ram Boojh, Mr Raza Shah)</li> <li>• SeaBRnet Secretariat (Mr Shahbaz Khan)</li> </ul>
12:15-13:15	Lunch	
13:15-14:00	MAB strategy 2015-2025 Discussion	Presented and moderated by Mr Shahbaz Khan
14:00-15:30	<b>Biosphere Reserves as Models for Alleviating Poverty through Ecosystems Services</b> Strategic Planning Session with sub-networks for Planning AP Projects on the meeting theme with emphasis on: <ul style="list-style-type: none"> <li>• Regional experts networking and communication</li> <li>• Sustainability Science</li> <li>• MAB new Strategy and others</li> </ul>	All in 3 sub groups assisted by flip charts, etc. Group facilitators with overall coordination by Ms Leah Barclay.
15:30-16:00	Coffee break	
16:00-17:00	Strategic Planning Session with sub-networks for Planning AP Projects - Report Back from Breakout sessions	Break-out session facilitators with overall coordination by Ms Leah Barclay
17:00-17:30	Summary report and conclusions	UNESCO Jakarta, Mr Shahbaz Khan
17:30-17:45	Introduction on Angkor WH and water management	UNESCO Phnom Penh, Mr Philippe Delanghe

UNESCO Program Science Officers Meeting 1800 to 1900 hours – coordinated by Ms Siti Rachmania.

The local host will provide reporter(s) in coordination with Ms Maria and Ms Joana to prepare the meeting reports and photo documentation.

Day 3 – Wednesday 17 December		
Field trip: Integrating Biosphere Reserves and Water management		
5.00	Pick up all the participants from the hotel and transport them to the port	<ul style="list-style-type: none"> <li>• Ministry of Environment</li> <li>• OSMOSE</li> </ul>
5.40	Trip to Prek Toal Floating Village (Breakfast will be included in the boat)	
6.10	Visit the Bird Sanctuary	
10.00	Visit the environmental education class at the floating village and Sray Tonle (water hyacinth handicraft Projects of OSMOSE)	
10.30	Typical lunch in the community restaurant	
11.30	Back to Siem Reap	
13.30	Arrival to Siem Reap and heading to Angkor World Heritage Site	<ul style="list-style-type: none"> <li>• APSARA Authority</li> <li>• UNESCO Phnom Penh</li> </ul>
14.00	Visit two temples in Angkor World Heritage Site: Angkor Wat and Ta Prohm	
17.30	Back to the hotel	
19:00-21:00	Dinner provided under invitation	

Day 4 – Thursday 18 December		
Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas (day 1)		
Master of ceremonies Ms Maria and Ms Joana, UNESCO		
08:30-09:00	Welcoming remarks Introduction of participants	<ul style="list-style-type: none"> <li>• UNESCO Regional Science Bureau (Mr Shahbaz Khan)</li> <li>• UNESCO Beijing (Mr Hans Thulstrup)</li> </ul>
09:00-10:30	Evolution of the BR concept – Environmental Law and Economics Implications	Mr Shahbaz Khan
10:30-11:00	Coffee break	
11:00-12:00	Roundtable discussion: field trip reflections, sharing experience from BR nomination and operation experiences Moderated by Ms Sadeghi and Mr Raza	All interested participants
12:00-12:30	Sharing experience session Moderated by Ms Sadeghi and Mr Raza	<ul style="list-style-type: none"> <li>• Mr Neronov (MAB Rus.)</li> <li>• Mr Jang Piljae (SDBR, ROK)</li> <li>• Mr Kim Inho (Mt.SBR, ROK)</li> <li>• Ms Umi (GSKBB BR, Indonesia)</li> </ul>

12:30-13:30	Lunch	
13:30-15:00	Best Practices of Ecotourism and Local Product Development for Sustainable Development	Mr Madrono P. Cabrestante Jr Palawan Council for Sustainable Development
15:00-15:30	Coffee break	
15:30-17:00	Tools for Connecting Communities	Ms Leah Barclay, Noosa BR, Australia

Day 5 – Friday 19 December		
Asia-Pacific Workshop on Strengthening Capacity for Management of Biosphere Reserves and Protected Areas (day 2)		
09:00-09:45	Conservation of Cultural Diversity and Traditional Local Knowledge – Use of Traditional Knowledge to Protected Area Management	Mr Hans Thulstrup, UNESCO Beijing
09:45-10:30	Promotion and Communication of Biosphere Reserves with Local People and the General Public	Mr Ram Boojh, UNESCO New Delhi
10:30-11:00	Biosphere Reserves in Iran: Success and Challenges	Ms. Niloofar Sadeghi, UNESCO Tehran
11:00-11:15	Coffee break	
11:15-12:30	Biosphere Reserves, zonation and management	Professor Roman Jashenko, MAB Kazakhstan
12:30-13:30	Lunch	
13:30-15:30	Workshop: Building Social Capital	Mr Colin Campbell, Assist Social Capital, Scotland
15:30-15:45	Coffee break	
15:45-16:45	Plenary discussion on appraisal of training and future training program – supported by a proforma	Moderators – UNESCO Almaty (Ms Kristine Tovmasyan) and UNESCO Jakarta (Ms Joana Vitorica)
16:45-17:00	Formal closing session of the event	UNESCO Beijing (Mr Hans Thulstrup)
19:00-21:00	Farewell dinner provided under invitation	

## Annex II: Local participants

### LOCAL

No	Full name	Position	Organization
1	Dr. Say Samal	Minister of Environment	Ministry of Environment
2	H.E. Yim Kimsean	Secretary of State	Ministry of Environment
3	H.E. Sao Sopheap	Director of Cabinet	Ministry of Environment
4	H.E. Chay Samith	Director General	GDANCP
5	H.E. Chan Sophal	Provincial Governor	Battambang Province
6	Representative	Provincial Governor	Kampong Thom Province
7	Representative	Provincial Governor	Siem Reap Province
8	Ken Srey Rotha	Deputy Secretary General	GG, Ministry of Environment
9	Seng Soth	Deputy Director General	GDANCP
10	Srey Sunleang	Director	Department of Wetlands and Coastal Zones (WCD)
11	Choub Chansophal	Deputy Director	WCD, MoE
12	Kong Kimstreng	Deputy Director	WCD, MoE
13	Long Kheng	Office Chief/Director of the Core Area	WCD, MoE
14	Sun Visal	Vice Chief	WCD, MoE
15	Representative of MoWRAM	Director General/Director of Department	Ministry of Water Resources and Meteorology
16	Representative of MoT	Director General	Ministry of Tourism
17	H.E. Nao Thouk	RGC's delegate, Director of FiA	Fishery Administration
18	H.E. Tan Theany	Secretary General	National Commission for UNESCO in Cambodia
19	Khem Sarey	MoE's ranger	Prek Toal Core Area
20	Uy Kimse	Community Representative	Prek Toal Core Area
21	Representative of TSA	Secretary General	Tonle Sap Authority
22	Te Navuth	Secretary General	Cambodia National Mekong Committee (CNMC)
23	Dr. Siek Sopheath	Director of Environment Faculty	Royal University of Phnom Penh
24	Choub Sarun	Director	Provincial Department of Environment, Battambang
25		Director	Provincial Department of Environment, Kampong Thom



26		Director of Environmental Department	Provincial Department of Environment, Siem Reap
27	Representative of MAFF	Director General	Ministry of Agriculture, Forestry and Fishery
28	Representative of MoP	Director General	Ministry of Plan
29	Representative of MWA	Director General	Ministry of Woman Affairs
30	Representative of MoLMU	Director General	Ministry of Land Management and Urbanization
31	Representative	Director	FFI
32	Representative	Director	WWF
33	Representative	Director	IUCN
34	Representative	Director	UNDP
35	Representative	Director	OSMOSE
36	Representative	Director	Conservation International
37	Representative	Director	FACT
38	Ross Sinclair	Director	WCS
39	Suwanna Gauntlett	Chief Executive Director	Wildlife Alliance
40	Sy Ramony	Director	Department of Wildlife Sanctuary
41	Sokheng Norvin	Director	Department of National Park
42	Srey Marona	Director	Department of PAC Research and Development
43	Chan Somaly	Director	Department of International Convention and Biodiversity
44		Director	Department of Environmental Education and Awareness Raising
45		Director	Royal University of Agriculture, Chamkar Dong
46		Director	Pannhsatra University of Cambodia
47		Director	Prek Lieb National University
48	Vann Monineath	Deputy Director General	Technical Directorate of MoE

## Annex III: International participants

### INTERNATIONAL PARTICIPANTS

Country	No	Full name	Position	Organization	Email
Australia	1	Ms Leah Barclay	Independent research consultant	Noosa Biosphere Reserve	info@leahbarclay.com
China, PR	2	Mr Wang Ding	Secretary General	Chinese Committee for MAB	wangd@ihb.ac.cn
India	3	Ms R. Dalwani	Adviser	Min. of Environment, Forests & Climate Change	r_dalwani@yahoo.com
Indonesia	4	Mr Yohanes Purwanto	Executive Director	The Indonesian Man and Biosphere Programme National Committee/ Indonesian Institute of Sciences (LIPI)	mab-lipi@mab-indonesia.org purwanto.lipi@gmail.com
	5	Ms Umi Karomah Yaumidin	Researcher	Economic Research Centre, Indonesia Institute Of Sciences (LIPI)	yaumidinuk@gmail.com
Indonesia	6	Ms Diah Setiari Suhodo	Researcher	Economic Research Centre, Indonesia Institute Of Sciences (LIPI)	diahsuhodo2@yahoo.com
	7	Mr Supriatno	Project Coordinator, Giam Siak Kecil-Bukit Batu BR	Sinar Mas Forestry	supriatno.supriatno@sinarmasforestry.com
	8	Mr Pieter Sampetoding	Giam Siak Kecil-Bukit Batu BR	Sinar Mas Forestry	Pieter.Sampetoding@sinarmasforestry.com

Iran	9	Ms Mehrasa Mehrdadi	Project Deputy	GEF/ UNDP Caspian Hyrcanian Forest Project	mehrasa.mehrdadi@gmail.com
Kazakhstan	10	Mr Roman Jashenko	Chair	Kazakhstan National MAB Committee	rjashenko@kazmab.kz
Malaysia	11	Ms Irina Safitri Zen	Director/ Senior Lecture/ Researcher	Office of Campus Sustainability, Universiti Teknologi Malaysia	irinasafitri@utm.my
Mongolia	12	Mr Gonchig Ganzorigt	Specialist for Human Resources Management	Administration of Bogdkhan mnt. SPA	zorig17@yahoo.com
Myanmar	13	Mr Saw Doh Wah	Programme Analyst (Climate Change Mitigation)	UNDP Myanmar	
	14	Mr Than Htay	Deputy Director	Nature and Wildlife Conservation Division, Forest Department, Ministry of Environmental Conservation and Forestry	nwcdmof@gmail.com
Myanmar	15	Mr Wai Van Phyo	Range Officer	Inlay Lake Wildlife Sanctuary, Nature and Wildlife Conservation Division, Forest Department, Ministry of Environmental Conservation and Forestry	wai.yanphyoe90@gmail.com
Nepal	16	Mr Umesh Kumar Mandal	Associate Professor	Central Department of Geography	umesh_je@hotmail.com

Philippines	17	Ms Lindsay A. Barrientos	Deputy Executive Director II/ Licensed Environmental Planner	Philippines National Commission for UNESCO	lenbarrientos@yahoo.com
	18	Mr Madrono P. Cabrestante Jr	Project Development Officer V and Head of the Environmentally Critical Areas Network-Policy, Monitoring, and Knowledge Management Division	Palawan Council for Sustainable Development Staff	mcabrestante@yahoo.com
	19	Mr Thomas Edison E. dela Cruz	Professor/Faculty Researcher	University of Santo Tomas	thomasdelacruz@yahoo.com
	20	Mr Gay Alfred Blanco	Development Management Officer III	Philippines National Commission for UNESCO	freddieablanco@yahoo.com
Rep. of Korea	21	Mr Do-Soon Cho	Professor	The Catholic University of Korea	dscho@catholic.ac.kr
	22	Jang Piljae	Chief	Shinan Dadohae BR	sanjiki32@naver.com
Rep. of Korea	23	Kim Inho	Junior Assistant	Mt. Sorak BR	cafemaru608@naver.com
	24	Mr Kang Sangkyoo	Director, Division of Sciences	Korean National Commission for UNESCO	skkang@unesco.or.kr
	25	Mr Jang Seokjun	Programme Specialist	MAB National Committee of the Republic of Korea	onemind83@naver.com
	26	Mr Lee Sangchul	Manager, Partnership Department	Korea National Park Service	gremlin24@hanmail.net
Russia	27	Mr Neronov Valeriy	Deputy Chair, Ecologist	Russian MAB Committee	rusmabcom@gmail.com

Scotland	28	Mr Collin Campbell	Executive Director Assist Social Capital CIC	Assist Social Capital CIC	colin@social-capital.net
Thailand	29	Ms Wimonmart Nuipakdee	Forestry Technical Officer, Professional Level	Department of National Parks, Wildlife and Plant Conservation	nuipakdee@yahoo.com
	30	Mr Chaowit Chomketkaew	Forestry Technical Officer, Senior Professional Level	Department of National Parks, Wildlife and Plant Conservation	c_chaowit@hotmail.com
	31	Mr Aumporn Panmongkol	Forestry Technical Officer, Senior Professional Level	Department of National Parks, Wildlife and Plant Conservation	doisutheppui@gmail.com
Vietnam	32	Ms Nguyen Thi Thanh Ha	Deputy Director, Department of Natural and Social Sciences	Ministry of Science and Technology Vietnam	nttha@most.gov.vn
UNESCO Islamabad	33	Mr Raza Shah	National Professional Officer (Natural Sciences)	UNESCO	r.shah@unesco.org
UNESCO Jakarta	34	Mr Shahbaz Khan	Deputy Director and Senior Programme Specialist for Science	UNESCO	s.khan@unesco.org
	35	Ms Joana Vitorica-Onaindia	Assistant Programme Specialist for Science, Ecological Sciences Unit	UNESCO	j.vitorica-onaindia@unesco.org
	36	Ms Siti Rachmania (Itot)	Programme & Administrative Assistant, Ecological Sciences Unit	UNESCO	s.rachmania@unesco.org
	37	Mr Hubert Gijzen	Director	UNESCO	h.gijzen@unesco.org

UNESCO New Delhi	38	Mr Ram Boojh	Programme Officer Ecological Sciences	UNESCO	r.boojh@unesco. org
UNESCO Tehran	39	Ms Niloofar Sadeghi	Programme Officer for Natural Sciences	UNESCO	n.sadeghi@ unesco.org
UNESCO Beijing	40	Mr Hans Thulstrup	Programme Specialist, Natural Sciences	UNESCO	h.thulstrup@ unesco.org
UNESCO Almaty	41	Ms Kristine Tovmasyan	Programme Specialist	UNESCO	k.tovmasjana@ unesco.org
UNESCO Phnom Penh	42	Anne Lemaistre	Representative	UNESCO	a.lemaistre@ unesco.org
	43	Philippe Delanghe	Culture Programme Specialist	UNESCO	p.delanghe@ unesco.org
	44	María Iñiguez de Heredia	Natural Sciences Focal Point	UNESCO	m.iniguez-de- heredia@unesco. org

## Annex IV: SeaBRnet group discussions

### The 8th Southeast Asia Biosphere Reserves Network (SeaBRnet) Meeting

15 December 2014

Siem Reap, Cambodia

#### Breakout Session

#### ECOTOURISM Discussion Group (15Dec)

The breakout group focusing on ecotourism compiled and discussed the main ideas learnt from the different presentations and comments during the SeaBRnet, regarding how to make ecotourism as a key sector in the Biosphere Reserves framework.

Prior to any ecotourism action, a comprehensive feasibility study is needed to ensure the viability of any future ecotourism development in a determined area. The viability, both economical and ecological, should be maintained in the long term.

In the same way, spatial planning is a basic need in order to establish where (in which zone of the BR)

the ecotourism will be implemented and where its impacts will be noticed.

The main characteristic of ecotourism is sustainability, including environmental, economical, social and legal sustainability. Four main pillars ensure the sustainability of the ecotourism, namely:

1. Well established institutional framework and mechanisms inside the BR, regarding national and local governments but also the BR itself and the communities living in and around it.
2. An integrated management, since the pre-actions, during the actions, and until the post-actions, involving all the stakeholders along the process and including a monitoring and evaluation system.
3. A legal framework, providing legal instruments both at the community level and at the government regulation level. The legal protection of the local communities and their ownerships, together with the legal protection of the environment itself, are key factors.
4. Capacity building programmes for the government, the community and all the stakeholders on ecotourism benefits, opportunities, implementation and management. Empowerment of the community on the ecotourism activities is crucial.

In addition, partnerships are indispensable for the ecotourism development. Communication, coordination, joint work and also benefits sharing among government, community, private sector (industry) and academia (scientists) for a good quality ecotourism are essential.

To conclude the discussion on ecotourism in BRs and recommendation for future actions, the group came out with the “5 A approach”:

### **5 A for Ecotourism**

1. Accessibility and infrastructures
2. Accommodation
3. Attraction, including destination management objectives
4. Acceptability, including conflict management system and security
5. Agencies cooperation for joint work and market strategy for promotion

### **Summary of discussions of ECO-labeling working group 15 December 2014,**

Discussions of the group were around two main areas:

- Why do we need eco-labeling?
- Development of a framework document that serves as a guiding document for regulation of the process of eco-labeling

### **Why do we need eco-labeling?**

In general, there are many benefits from eco-labeling which the group identified some of them including, first and foremost less impacts on the environment, income generation for the local communities, production of goods that have less harm to human health, sustainable practices for production of eco-products, less migration from rural areas to cities (as there will be more job opportunities), traditional customs and finally indigenous knowledge will be preserved and incorporated in the eco-labeling processes.

The group identified three levels of stakeholders who will be involved and impacted by eco-labeling within BRs:

#### **1. Local communities:**

As long as there is clear economic benefit, the local communities are convinced to adopt eco-labeling.

#### **2. Policy/decision makers**

Once they see the relevance and link to national development strategies, they will accept such initiatives. Sharing experience of other countries will be very helpful in this regard. The SWOT mechanism can be an effective tool for presenting and showcasing the added values of eco-labeling to decision-makers.

#### **3. Business/private sector**



Many times, factories are located in the buffer zone of a BR site in which their processes are not ecologically sound. To encourage them to opt for eco-productions, their needs to be incentives for them such as tax exemption or loans.

On the other hand, the private sector is the ultimate target group whom should be attracted to invest in eco products/labeling. Therefore again it is very important to define incentives for the private sector (such as tax exemption) to come and invest in this sector.

### **Development of a framework document for eco-labeling**

The group agreed that there should be a framework document to serve as a guiding tool that gives clear definitions of what is considered as an eco-product and that what are the criteria for receiving eco-labeling. There can't be a single universal document that would apply to all products, but UNESCO MAB has to set some minimum standards to ensure quality of both the production line as well as the final product before being eligible to use the eco-labeling. Otherwise the organization's credibility will be at risk; especially that eco-labeling entails economic benefits which can be easily misused.

For this, example of recent FAO initiative on registering "Globally Important Agriculture Heritage Sites (GIAHS)" was mentioned in which products produced in these sites are sold in higher prices, but accompanied with a small brochure that clearly explains what was the production process, the ecological foot prints, reduced impacts on the environment and information about the quality of the final product.

### **Other points discussed:**

- Whether eco-labeling shall be applied in the core zone of a BR? The group discussed two examples to respond to this question.

The first was in an imaginary case where natural honey is produced in the core zone of a BR naturally by bees. Would it be ok if the local communities are trained to go inside the core zone and collect the honey for selling in the market? The majority of the group agreed that once the core zone is opened to the local community, it will not be possible to properly protect it any longer. However the second example was brought up that in the case of Cambodia, traditional fishing is practiced in the core zone of a BR which is sustainable despite bringing economic return. So the group agreed that this question should be dealt case-by-case.

- Often, the final eco-products are so expensive that the communities can't afford these products although they had been involved in all the stages of production. So it will be very important that the benefits of the local communities are envisaged in the process and some share of the benefits is put aside for conservation of the environment.

## **Sustainability Science Breakout Session**

### **The 8th Southeast Asia Biosphere Reserves Network (SeaBRnet) Meeting**

**15th December 2014**

#### **Initial Reflections:**

- There are many synergies between the concepts of Sustainability Science and the main goals of Biosphere Reserves, the group suggested the opportunity to bring all the programmes together in order to be under the same framework and be more effective.
- We need to be more innovative and active in how we approach research in Biosphere Reserves.
- It is critical to break down the silos and encourage people to work together; otherwise the outcomes are irrelevant and repetitive.
- There are incredible opportunities for Biosphere Reserves to lead dynamic, innovative research that facilitates interdisciplinary collaborations in sustainability science.

#### **Key Points Discussed:**

- Opportunities for reviewing the Madrid Action Plan and Sevilla Strategy; Biosphere Reserves are the most important and critical sites for sustainable development and we should emphasize this on a micro and macro level.
- We need to bring all UNESCO Biosphere Reserve (and sustainable development) programs into the same framework and make sure they are integrated into a tangible long-term development plan.
- It is critical we find better tools to facilitate trans-disciplinary approaches to research projects and management in Biosphere Reserves.
- We need to make policy advocacy a priority and review and implement more effective policies for sustainability science to be effective in Biosphere Reserves.
- Biosphere Reserves should consider sustainability science projects that are designed to build capacity on a long-term basis so they are not reliant on government resources, but are designed to become sustainable within a BR community.
- We need to explore the synergies of scientific approaches and community involvement; how can communities be more engaged in sustainability science and how can we create more public awareness on sustainability? Education and training are the foundation of implementing sustainability projects within Biosphere Reserves.
- We must reinforce legal frameworks and make sure BRs are managed effectively.
- We should develop more accessible tools for knowledge sharing and the evaluation and monitoring of BRs across local, regional and international networks to understand the diversity of research successes and outcomes.
- We need legal frameworks and policies that offer communities of BRs protection against exploitation (on an environmental, social-cultural and economic perspective).

- We need better tools and opportunities for disseminating research among communities and wider Biosphere Reserve network.
- There are significant opportunities to develop a dynamic online platform for knowledge sharing and research dissemination.
- There are great opportunities for BRs to develop innovative resource generation tools for communities (project funding through ecotourism, public-private partnerships & developing conservation projects designed to build capacity and reduce poverty in the BR community, payment for ecosystem services).
- There are many opportunities to develop education programs based on existing research projects that can empower other communities of BRs.
- We can develop case-studies on public-private partnerships in BRs to assist other communities in developing sustainable models.
- There is a need for revitalizing the presence of public-private partnerships for ensuring sustainable development and preventing exploitation. This could be achieved through a set of guidelines for public-private partnerships in BRs.
- There could be a component of 'resource generation' that is made an integral part of all action plans for BR management, to ensure long term sustainability of these resources with less reliance on government and existing funding programs.

### **Recommendations:**

- Develop a Sustainability Science Network within South East Asia and Asia-Pacific Biosphere Reserves that could be designed as an online platform for case studies, best practice examples, research dissemination and interdisciplinary collaborations.
- Develop a series of case studies (and interactive tool-kit) for innovative resource generation in BR communities to facilitate long-term sustainability science projects.
- Develop a tool-kit for publishing research that is accessible to integrate into community engagement projects and educational curriculum across the Asia-Pacific region. As an example each BR research project could be required to provide a one page template for direct integration into education programs.
- We recommend the development of accessible resources on policy implementation and legal framework for Biosphere Reserves.
- We recommend a comprehensive action plan leveraging the funds/resources allocated under different programs for sustainable development of a BR.
- Develop a series of Sustainability Science international research collaborations between
- BRs who already actively engaged in best practice examples.
- Develop a Sustainability Science mentoring program for leading BR communities to mentor emerging projects

## Annex V: APBRN group discussions – 16 December 2015

Promote the development and applications of Sustainability Science in Biosphere Reserves

1. Developing New Frameworks & Reviewing Current Frameworks
  - Developing a framework for Biosphere Reserve applications based on best practice and emerging and innovative examples
  - Develop a framework for public-private partnerships
  - Developing a Biosphere Reserve strategy for implementation based on sustainability science
  - Developing a community based knowledge sharing framework
2. Education & Engagement
  - Engagement of youth, women and communities by hosting community events & developing online communities to share ideas
  - Community best practices awards, youth award for innovative strategy
  - Learning labs, youth camps and immersive educational programs
  - Documentation and dissemination of research and best practice examples (online platform)
3. Broadening Research
  - Creation of a database of each Biosphere Reserve
  - Exploring gaps and improving collaborations
  - Developing better tools for research dissemination that is accessible for communities
  - Developing frameworks for research outputs that will have more impact in communities
1. Develop a Sustainability Science Network within South East Asia and Asia-Pacific Biosphere Reserves that could be designed as an online platform for case studies, best practice examples, research dissemination and interdisciplinary collaborations.
2. Develop a series of case studies (and interactive tool-kit) for innovative resource generation in BR communities to facilitate long-term sustainability science projects.
3. Develop a tool-kit for publishing research that is accessible to integrate into community engagement projects and educational curriculum across the Asia-Pacific region. As an example each BR research project could be required to provide a one page template for direct integration into education programs.
4. We recommend the development of accessible resources on policy implementation and legal framework for Biosphere Reserves.
5. Develop a series of Sustainability Science international research collaborations between BRs who already actively engaged in best practice examples.

6. Develop a Sustainability Science mentoring program for leading BR communities to mentor emerging projects & communities.

### **MAB programme: Networking, communication and monitoring**

1. Build a national network of experts as a part of regional system of expertise
  - Regional Center (rotation in 4 years)
  - Advisory Committee
  - Sub-Regional Co-ordinators (rotation in 2 years)
  - National Co-ordinators
2. Working out a website including:
  - News and Newsletter
  - E-Journal
  - Publish information on existing journals
3. General meeting of experts
4. Regional project on comparative analysis on legislation devoted to BR:
  - Regional: 4
  - Sub-Regional: every 2 years (at least)
5. Use the common approaches resulted from other monitored projects and best practices in the networks (green economy, Climate Change mitigation and adaptation, ecosystem services, invasive species, etc.)
6. Financial issue

### **MAB Strategy and further needs**

Having considered the strategic objectives of the zero draft MAB Strategy, the working group observed:

- That all objectives (in addition to sustainability science, covered by another group) are of relevance to the region and are closely interconnected.
- That “enhancing conservation and sustainable use” and “climate change adaptation and mitigation” capture the region’s priorities well.
- That the primary immediate need in the Asia-Pacific region is to strengthen the connection between MAB’s global strategic direction and action at the site level, through the provision of specific guidance to the region’s MAB community. The lack of such guidance in connection with the launch of previous strategies was identified as a problem.

The group proposed three interconnected initiatives to respond to this need:

- 1. Development of a common framework for assessing Biosphere Reserve progress towards Sustainable development objectives.**
- 2. Development of an Asia-Pacific MAB strategy/action plan containing targeted guidance on issues of particular relevance to the region, including:**
  - a. Zonation,
  - b. Legislative status
  - c. Policy formulation
  - d. Linking national policy to local conditions
  - e. Establishing financial mechanisms
  - f. Enhanced monitoring guidelines
  - g. Communication at the local level
- 8. Development of Asia-Pacific climate change adaptation  
Development of Asia-Pacific climate guidelines for Biosphere Reserves.**

## Annex VI: Roundtable discussion summary

### **Asia-Pacific Workshop on Strengthening Capacity for Management of**

### **Biosphere Reserves and Protected Areas**

**18-19 December, Siem Reap**

#### **Roundtable discussion:**

#### **Biosphere Reserve nomination and operation experiences**

#### **Impressions from the field visit**

The discussion began with some reflections on the field trip to the Tonle Sap Biosphere Reserve and Angkor World Heritage site. The group appreciated the opportunity of visiting this interesting Biosphere Reserve and commended the efforts of the Government in its management.

The efforts in birdlife research and monitoring were well demonstrated and appreciated by the group. The importance of the good relationship that exists between the management and the local people within the BR was highlighted. Participants took note of the significant successes achieved in stimulating sustainable local livelihoods, including water hyacinth handicraft production, the eco-club and other initiatives. In terms of future direction, participants took note that the Biosphere Reserve could undertake further work in order to seek a balance between livelihoods (including cultural heritage) and conservation of the site.

The Tonle Sap BR has communities living in - and using resources from - the core zone. This is perhaps unusual in BRs in some countries, and a suggestion for reconsidering zonation of the BR was discussed by the group. Among the challenges observed in and around the Prek Toak core zone were the following: heavy reliance on diesel fuel, many motor-powered boats, significant population in floating villages with resulting pollution, significant growth of water hyacinth as indicator of pollution, and tourism use with the resulting disturbance. It was noted that the zonation of the site has not been updated since the declaration of the BR in 2001.

Representatives of the Biosphere Reserve agreed that the population and tourism in the site are a challenge to the management. However, they also asked that the history and dynamic nature of the site be taken into account in the overarching management of the site. Security has been a major issue – the area was only considered safe by the late 1990s. The declaration

of Tonle Sap as a BR represents the culmination of a long process, and the site provides for the livelihood of 100,000s of people.

Were fishing lots to be abolished, the local population cannot be relocated to the dryland, which is densely populated already. It was noted that resettlement might be an option in developed countries, but perhaps not in Cambodia. It was further noted that supporting livelihoods is a human rights issue.

Finally, it was noted that some fishing is seasonal only, and no commercial fishing is allowed in the core zone (except with the approval of the Minister of Environment). However, scientific research is allowed and there is a sustainable use zone, a community zone where local activities are allowed. Regarding population and tourist use, the BR and the Prek Toak core zone can only accommodate a certain number of people; there is a limit – just as with the Angkor World Heritage site.

A suggestion was put forward for UNESCO to create a network of Aquatic Biosphere Reserves to promote networking and exchange of knowledge among aquatic/wetland Biosphere Reserves, such as the network of Island and Coastal BRs.

Russia suggested establishing a site-to-site cooperation agreement with Tonle Sap BR for exchanging experiences, sharing, databases and developing joint publications. It was also recommended that agreements be established between Ramsar, IHP and MAB for the promotion of wetlands and bird habitat conservation, based on a holistic look at the guiding principles of these instruments.

Another point of the discussion was how to manage water sustainably, with reference made to the water management achievements of the Angkor civilization. Revitalizing such a sustainable system could be an extra contribution towards the ancient system of water management that made the Angkor culture possible. It was discussed how to connect the BR with the local land use plan of the area, and thereby better integrating the role of local communities in the management of the BR. This is also a challenge in other BRs and protected areas, for example in the Philippines and Nepal.

The group noted that part of Tonle Sap BR is fed by the Mekong River, which is an international river basin shared by several countries. It was pointed that upstream activities may impact the ecology and livelihood of the settlements at the downstream of the lake and this BR. The Mekong River Commission has four members (Vietnam, Laos, Thailand and Cambodia) and upstream partners (Myanmar, China); and there are plans for further hydropower development projects upstream with significant impacts on the downstream countries, including the Tonle Sap Biosphere Reserve. It was also noted that the National MAB Committees should include people from several ministries besides the ministries of environment – including agriculture,

water resources - who are in charge of water and land use. Similarly, it was recommended that people be included from several disciplines – legal, scientific disciplines, NGO representatives, media, and education.

It was suggested to engage the Mekong Region in a Russian Symposium on great rivers, organized every year. It was also proposed to create a new hydrological sciences network - a Mekong River International Hydrological Programme (IHP) network-to develop international cooperative projects. It was noted that without maintenance of traditional hydrological systems - as demonstrated during the visit to the Angkor World Heritage site - it will not be possible to maintain the related ecosystems.

The intangible cultural heritage represented by the floating villages – a unique lifestyle – is a strong potential which is yet to be explored. This could represent an important aspect of indigenous knowledge, one that could help attract attention and further protection to the site – by making use of this knowledge resource.

It was noted that the Tonle Sap Biosphere Reserve is managed in close consultation with stakeholders at all level. However, the BR is managed under the PA law, and this is not presently integrated with the overall land use planning legislation. There is the need to consider a single national legislation for all the ministries involved in the BR management. Cooperation is ongoing between MoE and UNESCO PNP to revise the zonation system and strengthen integration with the provincial management plan. Opportunities like this week's meeting, with exchanges between experts from around the world - are much welcomed and appreciated by MoE.



# Annex VII: Photos of the Meetings and Workshop on Strengthening Capacity



Group photo for the opening meeting



Activities during discussion

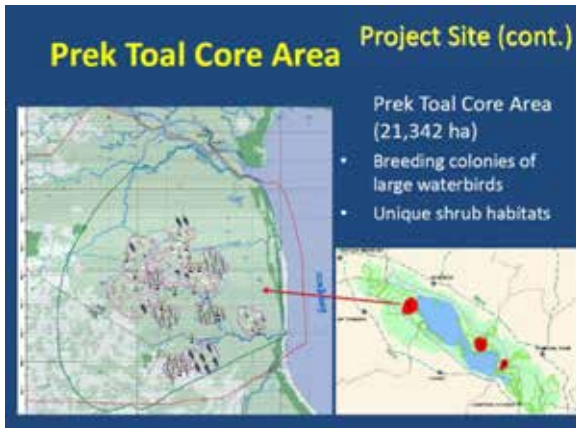
## Annex VIII: Photos of the Field Trip at Prek Toal, Tonle Sap Biosphere Reserve



On the way to Prek Toal Commune



Floating village in Prek Toal



Prek Toal Core Area Boundary



Prek Toal bird-watching station



Bird-watching through telescope



Prek Toal Core Area's view

**Photographs by:**

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## **UNESCO Office, Jakarta**

Jl. Galuh II No. 5  
Kebayoran Baru  
Jakarta 12110  
Indonesia

Tel : (62 -21) 739 9818  
Fax: (62 -21) 7279 6489  
Email: [jakarta@unesco.org](mailto:jakarta@unesco.org)

[www.unesco.org/jakarta](http://www.unesco.org/jakarta)