The case of the German Technical Cooperation in supporting sustainable resources management in Lore Lindu Biosphere Reserve, Central Sulawesi – Indonesia

Ismet Khaeruddin*
Forests and Climate Change Programme (FORCLIME), a German supported programme implemented by Gesellschaft für Internationale Zusammenarbeit (GIZ), in Central Sulawesi

*Corresponding Email: ismet.khaeruddin@giz.de

Abstract. Established in 1977, Lore Lindu Biosphere Reserve was one of the first generation of Indonesia’s biosphere reserve as living laboratory for sustainable development practices based on science. Various forests functions and land allocations with different management authorities remain challenges for the biosphere reserve to effectively demonstrate its existence as a model for sustainable development laboratory for decades. The development of special national policy on biosphere reserve designation and management at the level of government regulation as mandated by Law 41 / 1999 on Forestry is essential for effective management for the Indonesia’s biosphere reserves in the future, particularly Lore Lindu.

1. Background
Referring to the Laws on Forestry (No. 41/1999) and Spatial Plan (No. 26/2007), terrestrial biosphere reserve ecosystems may consist of five different land and forest functions, including conservation, protection, production, other uses and community or development centers, like municipalities. Within the Indonesian context, this is unlike as usually other management areas consist of only one, two or maximal three land or forest functions. For example, a national park has only one forest function: conservation; while the production forest management unit (P-FMU) could have two or three forest functions: production, protection and conservation, as long as the area covered by production forest in the FMU is bigger than the other areas.

This situation challenges biosphere reserve management to achieve its development goals as a living laboratory for sustainable development which is demonstrating harmony and a balanced relationship between human and nature. The authorities responsible for land-based management, including the non-forest land areas, are under different institutions in central or local governments. Moreover, such conditions become more challenging with the absence of a special regulation on biosphere reserve management, as legal basis for government and other institutions to allocate resources for the biosphere reserve management [1]. Consequently, the biosphere reserve management body has no power over the management authority of the core area, as local government offices at the buffer zone and the transition area have the legal basis for managing their respective area. In addition, within the Biosphere reserve it can happen that there is a lack of common goals to improve community prosperity and sustainable development in the areas [1].
2. The Lore Lindu Biosphere Reserve – A brief analysis on the current status
Scope of this case study was Lore Lindu Biosphere Reserve in Central Sulawesi Province, Indonesia, from January 2017 to May 2018[2].

The Lore Lindu Biosphere Reserve (LLBR) is a good example for this challenging situation. The two million hectares of integrated landscapes of Lore Lindu in the Heart of Sulawesi/Celebes has already been declared by the UNESCO MAB Programme as biosphere reserve in 1977. A management forum was established in 2011 based on the Governor’s decree. However, in the past, the Forum was not functioning effectively. Effective management is important for successful maintaining and improving the conditions of the significances of the biosphere reserve, and at the same time gain benefits due to sustainable resource management practices. Some outstanding factors of the biosphere reserve are hundreds of ancient megalithic stone formations and endemic flora and fauna species, such as birds (78 of 267 species have been recorded) and 77 species of mammals, of which most are different types of bats.

Figure 1. Zonation map of Lore Lindu Biosphere Reserve.

Figure 2. Lore Lindu Biosphere Reserve Map based on forest functions and land allocation types

Figure 3. Megalith stones in Lore Lindu Biosphere Reserve

Figure 4. Birds of Lore Lindu Biosphere Reserve (by Donny Kristianto_BBITNLL)
3. German development cooperation in supporting sustainable resource management in Lore Lindu Biosphere Reserve, Central Sulawesi – Indonesia

The situation is now improving due to a grant given by the German Ministry of Economic Cooperation and Development (BMZ) and implemented by KfW in order to strengthen the Lore Lindu national park and its buffer zone, it is also supported by technical cooperation, implemented by GIZ in cooperation with the Ministry of Environment and Forestry and local authorities. German Technical Cooperation is focusing on supporting the sustainable resources management in Lore Lindu Biosphere Reserve, while Financial Cooperation is providing investments in and around the national park.

With the beginning of the technical cooperation, a stakeholder process was re-established and after a long vacuum, the forum conducted two formal meetings and agreed on the LLBR’s logo in 2017 as” unifying symbol”, giving the dormant biosphere reserve a face for the political discussions on local and national level. Samples of sustainable products from communities in the biosphere reserve were introduced and announced during the biosphere reserve meeting to demonstrate and promote sustainable development practices in the frame of the biosphere reserve while breaking out of the stereotypic thought patterns of communities about conservation. In the past, communities only considered the prohibition of economic activities in protected areas. Therefore, support to biodiversity conservation in the area was relatively low, while conflicts with conservation authorities occurred easily. However, sustainable development in the frame of the biosphere reserve is generally the link between biodiversity conservation in the core area with sustainable use of resources at the buffer zone as well as sustainable use, processing and marketing at the transition area.

Figure 5. Community products from Lore Lindu Biosphere Reserve.

Through the facilitation of GIZ, the management of the Biosphere Reserve conducted collaborative events with the local governments and implements activities at community level to create tangible benefits for local communities. This creates common understanding among government and local communities what biosphere is and what it implies. Such activities include trainings for women empowerment on orchid conservation and cultivation; Development of local premium coffee and chocolate products; Series of in-house training on GIS for FMU and national park staff; Series of trainings and coaching on development of management and business plans for FMU and national park staff; Training and coaching on environmental journalism for FMU and national park staff. All these activities are supporting the creation of a common understanding of the function of the biosphere reserve and the implications of its existence for local communities. Consequently, it was demonstrated in local newspaper and social media coverage and national events that more people in Central Sulawesi talk about the biosphere reserve and a better understanding of the potential of the biosphere reserve for local sustainable development in the area has been established. Of special significance is the current initiative of branding local agricultural products in the biosphere. As a trial, local agricultural products such as snacks made of corn and sweet potato, as well as coffee and chocolate, follow the criteria developed by LIPI for sustainably produced products within biospheres [3]. A team of 5 to 7 people from technical units of provincial and district governments, national park, private sector and non-government organization has been selected to be an independent committee for
evaluating the production before the certificate and logo is given, starting by 2019. Products that have been branded as biosphere products will also be evaluated and improved for compliance. This committee is one example how stakeholder within the biosphere are starting to cooperate with each other and benefit from the concept of the biosphere reserve. Linking the “brand” biosphere reserve to national and international eco-tourism and being able to provide products from the biosphere provide a future potential that might have an economic impact while highlighting the biodiversity values of the biosphere to local people and visitors.

However, it has to be mentioned that for sustainable development in the Indonesian biosphere reserve system, a national regulation is needed. Currently, no clear regulation exists on national level. This regulation is important for the effective management of biosphere reserves. In specific, the following is needed: Adequate resource allocation and certain management institutions from the national to the site levels, or at least, a mandate related to the management of biosphere reserve, which is stated in the existing regulation. With the absence of a special regulation on biosphere reserve management, government institutions are not able to allocate resources for activities in relation to biosphere reserves. Therefore, biosphere reserves are still not integrated in the government budget system. Until now, biosphere reserves are only mentioned in the Conservation Law No. 5/1990, however, with limited definition and no elaboration on development and management aspects (Articles 1 and 18, consecutively). To overcome this situation, a team consisting of the National Secretariat of UNESCO MAB Programme in Indonesia and the Indonesian Science Institute (LIPI), the Directorate General of Conservation of Natural Resources and Ecosystems of the Ministry of Environment and Forestry and GIZ collaborate on developing an academic paper and preparing a draft content of the government regulation on biosphere reserve development and management, which is expected to be ready soon and to be approved this year, 2018. The prepared regulation aims for a better management of the biosphere reserves for sustainable prosperity in Indonesia.

4. Conclusion and Recommendation
Conclusions from this case study are: 1) the absence of special national regulation on biosphere reserve affects achievement of the designation goal of Lore Lindu Biosphere Reserve as living laboratory for sustainable development practices based on science; 2) support from the German Technical Cooperation in institutional capacity building and product development has increased the stakeholder awareness on the existence and possible benefit of Lore Lindu Biosphere Reserve; 3) special national regulation on biosphere reserve as mandated by Law No. 41 /1999 on Forestry is needed for effective coordination and collaboration among stakeholders from local to national levels in an attempt to achieve sustainable management of resources in Lore Lindu Biosphere Reserve; and 4) development of a national regulation needs coordination and collaboration of key stakeholders at local to national levels, government and non-government institutions.

Considering to the urgency of the availability of a national regulation on biosphere reserve designation and management, and the complexity of the process in development a national regulation, it is recommended that the Executive Director of the National Secretariat of UNESCO MAB Programme Indonesia and Head of Conservation Area Management Control of the Directorate General Conservation of Natural Resources and Ecosystem Ministry of Environment and Forestry (MoEF) to lead and speed up the finalization of the existing government regulation draft for approval. Hence, product development for Lore Lindu Biosphere Reserve should be continued in term of types of products and its compliance on guiding principle of Indonesia’s biosphere reserve product branding. Existing international cooperation, technical and financial, on Lore Lindu Biosphere Reserve management support should continuously be optimized.

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