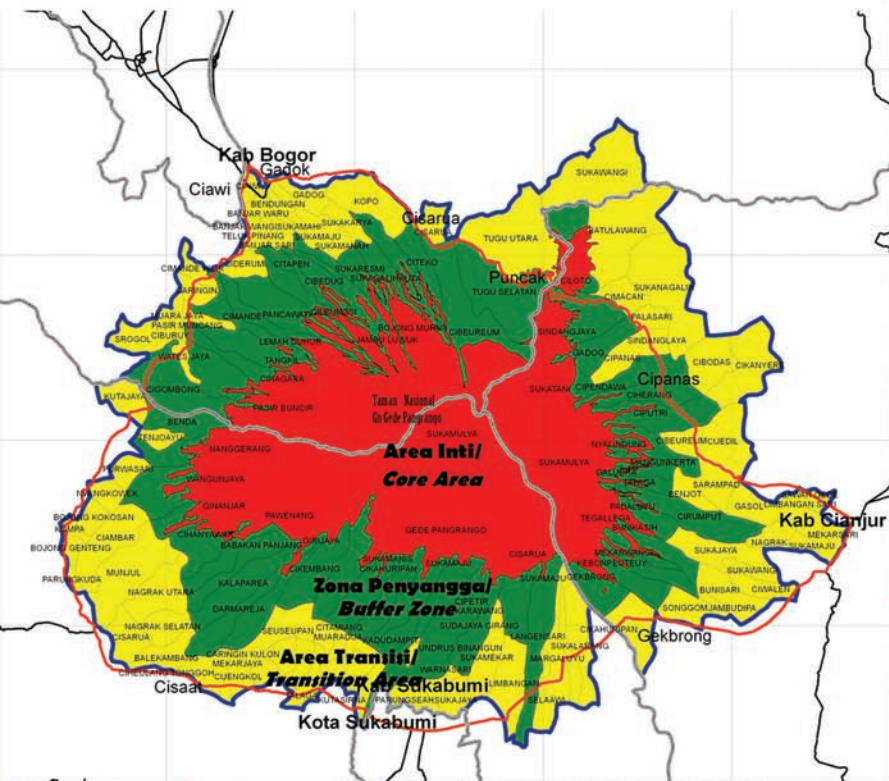




ITTO TFL-PD 019/10 Rev. 2 (M)  
Developing Collaborative Management  
of Cibodas Biosphere Reserve in West Java Indonesia

# Developing and Adopting an Integrated Strategic Management Plan for Cibodas Biosphere Reserve

## TECHNICAL REPORT 2





**Project TFL-PD 019/10 Rev. 2 (M)**

**“Collaborative Management of Cibodas Biosphere Reserve West Java  
Indonesia”**

**“Developing and Adopting an Integrated Strategic Management Plan for  
Cibodas Biosphere Reserve”**

(Report on the implementation of activities pertaining to Output 2)

**Prepared for the project by:**

The Project Management Team

**Executed by:**

Gunung Gede Pangrango National Park Authority (GGPNP)  
Directorate General of Forest Protection and Nature Conservation  
The Ministry of Forestry

**With the assistance of:**

The International Tropical Timber Organization (ITTO)

**Cibodas, April 2014**

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## LIST OF ABBREVIATIONS

BAPPEDA	: Badan Perencanaan dan Pembangunan Daerah (Regional/Local Development and Planning Board)
CBR	: Cibodas Biosphere Reserve
DG	: Directorate General
Forum	: Communication and coordination forum on CBR management
GGPNP	: Gunung Gede Pangrango National Park
GIS	: Geographical Information System
Ha	: Hectare
ISMP	: Integrated Strategic Management Plan
ITTO	: International Tropical Timber Organization
LIPI	: Indonesia Institute of Sciences
MAB	: Man And Biosphere
NGO	: Non-Governmental Organization
NTFP	: Non-Timber Forest Products
PERDA	: Peraturan Daerah (Regional/Local Government Regulation)
PHKA	: Perlindungan Hutan dan Konservasi Alam (Forest Protection and Nature Conservation)
UNESCO	: United Nations for Education, Science and Culture Organization

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## Summary

Cibodas Biosphere Reserve (CBR) has been formally adopted as a world monitoring site of UNESCO Man and Biosphere (MAB) Programme since 1977. The reserve, which is located in the mid of densely populated province of West Java, consists of large areas of national park, protection areas, recreation and nature reserve and community settlements with a total original area of approximately 108,000 ha. Due to its location, surrounded by many districts and urban and sub-urban populations, this reserve has received great attention from national and international communities. The attention is also intensified since this reserve also serves various economic, social and environmental functions, especially for Jakarta (the capital city of Indonesia), Bogor, Sukabumi, and Cianjur districts which are directly connected to this reserve. However, CBR has not been managed sustainably to date and the services have not been fully explored and utilized for the benefits of many parties, including local community. The above situation occurs primarily due to the fact that until today, an integrated management plan has not been formulated and developed. Several factors impeding the formulation of such management plan are the existence or the presence of conflict of interests amongst stakeholders in managing the CBR, insufficient necessary data and information to develop the management plan and insufficient or lack of capacity to initiate and develop the plan.

This report describes three activities carried out under this project to initiate and develop an integrated management plan for CBR through several steps and approaches starting from the assessment of existing resource, potential conflicts, consultation and communication meetings until the draft is finalized. The draft management plan was further disseminated through several public hearings and a series of training workshop. A final draft of the ISMP has been developed by accommodating all inputs, comments, and corrections. In addition, the coordination and communication Forum, which has been formed earlier, is essential to safeguard the ISMP implementation by keeping active communication with the various CBR stakeholders.

# 1. INTRODUCTION

Cibodas Biosphere Reserve (CBR) is one of the biosphere reserves of Indonesia. The CBR is located in West Java Province which consists of several protected and conservation areas, such as Gunung Gede Pangrango National Park (GGPNP). This park is approximately 22,851 ha in extent, as of 2009, and composed with sub-montane, montane, sub-alpine ecosystem; other ecosystems not influenced by altitude such as swamp, crater, lake, and other homogenous ecosystem. With such numerous ecosystems, this park has become the core area of CBR.

Administratively, the CBR is located in the province of West Java and surrounded by several districts and large and densely populated cities. The districts are Bogor, Cianjur, and Sukabumi and the large cities include capital city of Jakarta, Bekasi, Tangerang, Bogor, Cianjur and Sukabumi. Due to its unique location, nearby the large cities along with their sub-urban areas, CBR has become one of the most intensely exposed biospheres to communities and its associated potential resources and challenges. Various problems and challenges in the management of CBR emerge and grow from time to time along with the population growth, infrastructure development, and other life-style associated problem.

Unfortunately, the rapid change and emerging problems have not been adequately anticipated and responded by priority action such as development of a widely adopted management plan. The changing and emerging problems are threatening the existence of the conservation and protected areas. CBR has not used an adopted ISMP, even though the reserve has been formally formed as UNESCO MAB monitoring site since 1977. Several factors unfavorable for the formulation of ISMP are the existence or the presence of conflict of interests amongst stakeholders in managing CBR, insufficient necessary data and information to develop ISMP and insufficient or lack of capacity to initiate and develop such a plan. These underlying problems have also resulted in uncontrolled occupation of the reserve areas by local communities and other utilization.

This report primarily addresses issues on ISMP development for CBR as an indicator of achievement of Output 2 of this project. The Output is delivered through the completion of three planned activities:

Activity 2.1: Assessing the existing conflict of interest in implementing integrated conservation of natural resource and development

Activity 2.2: Collecting data and information on design and zonation border of the CBR

Activity 2.3: Conducting 3 series of training on park resource management consistent with Biosphere Reserve Management Plan.

The above three activities have provided rich and valuable data and information on the current situation and condition of the CBR and sufficient to initiate the development of ISMP involving the relevant stakeholders. A series of meeting and stakeholder consultation inside and outside the park and the CBR have been organized for developing the best management practices of the CBR and promoting wide adoption and implementation of the ISMP. The draft of the IMP has been developed using a comprehensive methodology supported by sufficient CBR data and information. Capacity building through public hearing, consultation, and training workshops have been organized to support the adoption and wide implementation of the ISMP and best management practices of the CBR. Sufficient inputs from relevant parties have also enriched the draft and made the ISMP feasible for implementation.



## **2. APPLIED METHODOLOGIES**

### **2.1. The hypothesis**

The operation of an integrated management plan could only be effective when the plan has been widely adopted and accepted by most related stakeholders. In this project, it has been hypothesized that a feasible and widely adopted management plan could be successfully formulated if the prerequisite conditions are available, such as needed data and information, all stakeholders provide support and sufficient institutional and human resource capacity improved. The prerequisite conditions have been made available through the completion of three planned activities.

CBR management plan should be prepared based on the existing conditions (natural resources, human interaction and existing challenges) toward achieving the objectives of biosphere reserve management. At least three activities have been identified and carried out in order to develop a sound and acceptable management plan. Those activities are the assessment of existing condition, including the presence of conflict of interests, the assessment of current zonation and utilization by both authorities and communities, collecting and updating the potential resources of the park and biosphere reserve. Further, there are also a series of training workshop for park management staffs and other relevant stakeholders as well as coordination and communication meetings to capture inputs and ensure wide acceptance of the management plan.

If all the above activities are successfully completed, Output 2: An integrated management plan for CBR could be well developed. Assuming all other necessary conditions are valid, the management plan could be well implemented and the specific as well as development objectives of the project should be achieved. In short, it has been hypothesized that the full implementation of three planned activities will deliver the output, which in turn will contribute to achieving the specific objective.

### **2.2. Execution of planned activities**

There are three activities that have been conducted to achieve Output 2 (An Integrated Management Plan for CBR). These activities have been completely carried out; the methodologies applied in the execution of the activities are as highlighted:

Activity 2.1. Assess the existing conflicts of interest in implementing integrated conservation of natural resources and development

This activity was carried out by a competent national consultant through collection of both primary and secondary data and information, followed by field survey to assess the conflicts on natural resource management and space utilization in CBR. Spatial data were collected from various sources, primarily from GGPNP Office, Directorate of Forestry Planning, Coordinating Agency for National Land Survey (Bakosurtanal), District Planning and Development Agencies (Bappeda) of Bogor, Cianjur, and Sukabumi Districts. The spatial data were further processed using GIS platform as described in the appropriate pages to follow.

Data and information on existing conflicts of landuse planning, resources utilization, tenurial, and land utilization within the three districts surrounding the biosphere reserve were also collected. By utilizing the above data and information, several potential recommendations could be derived to cope with the problems regarding the conflict on management and land utilization of the reserve. The overall conflicts and potential recommendation to cope with the potential conflicts and problems were then finalized. These findings and recommendations were expected to contribute to realizing Output 2 which has been hypothesized as the solution to one of the main problems toward the achievement of CBR management objectives.

Under Activity 2.1. a three day public consultation and socialization was also carried out. The objective of this activity was to obtain supportive public perception and understanding on the current conflicts on management of CBR including conservation and protection of GGPNP. This public consultation and socialization were led by the Chairman of BKPP Region I Bogor, and attended by national and international consultants, GGPNP authority, Ministry of Forestry, local governments of Bogor, Sukabumi, and Cianjur, NGOs, and project staffs.

At the public consultation and socialization there were four topics presented and discussed:

- Proposed redesign and rezoning of CBR,
- Analyses of existing conflict of interest in the management of CBR,
- Draft ISMP, and
- Needed legal government support to CBR management by tha CBR Forum

### Activity 2.2. Data and information on design and zonation of CBR

Implementation of this activity was aided by an experienced national consultant assisted by a junior professional and a group of technicians. Collection of data and information on design and zonation of CBR is aimed at obtaining recent and valid data and information to facilitate redesign and reconstruction of CBR zones and their associated borders based on existing resource potential, current condition and future utilization. The basic methods applied is outlined below:

- Spatial data were obtained from various sources such as GGPNP, Directorate General of Forestry Planning, Coordination Board for National Land Survey, Provincial Development Planning Agency, District Development Planning Agencies of Bogor, Cianjur and Sukabumi. The spatial data were processed using Geographical Information System (GIS) platform with ArcGIS ver 9.3 software.
- Textual data on community social and economic conditions were collected from statistical data at the village, sub-district, and district levels then further verified through direct interview.
- Analysis of CBR zonation by applying the appropriate criteria and evaluating the geographical distribution of the villages, land cover, existing spatial plans, protected area, disaster prone areas, etc.
- GIS analysis by combining spatial data and textual data to draw out recommendations for management objectives in each zone.
- Identification of best management practices in each zone through field observation consistent with the defined management objectives.

The detailed methodology applied to establish zonation is shown in Figure 1.

### Activity 2.3. Conducting 3 series of training workshop on park resource management consistent with the biosphere reserve management plan

The objectives of these workshops were:

- To provide information on the functions and benefits of GGPNP as the conservation area in the context of CBR development
- To introduce and discuss on best management practices applicable to CBR core area, buffer and transition zones, and

- To elucidate on the relevant laws on conservation area management and identify an effective strategy for their enforcement

The workshops were carried out consecutively on 26-27 November in Bogor, 28-29 November in Cianjur, and 3-4 December in Sukabumi, each attended by 25-27 participants or 78 people in total representing different stakeholders of CBR including the local governments, GGPNP authority, collaborators of park management, ITTO project management team, consultants, and local community groups.

The terms of reference of the management of CBR were developed based on the general concept of biosphere reserve development which consists of three main functions; the Seville Strategy elaborates the concept into four main goals and the Madrid Action Plan (MAP) elaborates needed actions to anticipate future challenges in the management of biosphere reserve.

The three main functions of a biosphere reserve:

- Conservation of biodiversity (ecosystem, species and genetic),
- Development for a sustainable future, and
- Research and monitoring in the world network of biosphere reserves.

The stated main goals of Seville Strategy are:

- Utilizing biosphere reserve as for conservation of nature diversity and culture,
- Utilizing biosphere reserve as model for land management and model for sustainable development,
- Utilizing biosphere reserve for research, monitoring, education and training and
- Applying the development concept of biosphere reserve.

The MAP further translates the Seville Strategy into 4 main actions, 31 targets and 67 field actions towards achieving the objectives of the Seville strategy as well as the vision and mission of the Man and Biosphere (MAB) programme.

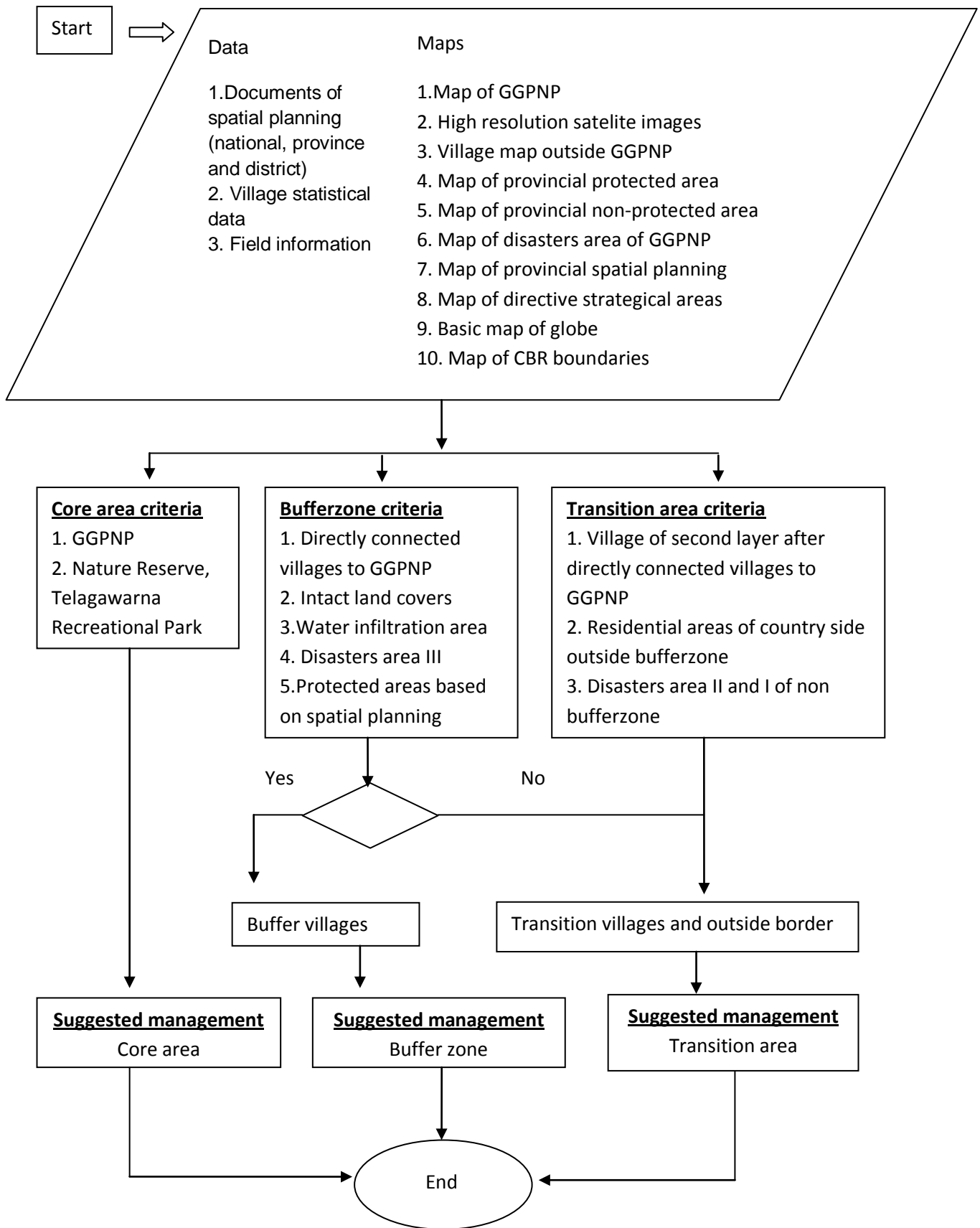


Figure 1. Flow diagram in the development of CBR zonation (after Samedi & Imansyah, 2012)

### **3. PRESENTATION OF FINDINGS**

#### **3.1. Assessment of existing conflicts**

The major driver in the emergence of the conflicts of interest in implementing conservation and management of CBR is strong economic needs against interest in conservation, which is related to the most aspects in the management and utilization of natural resources. The occurring conflicts involve various stakeholders, such as the Central government versus Local governments; the Governments versus local communities; between the local community groups in land ownership and land occupation; between economic community versus conservation groups.

The underlying causes of the conflicts are:

- Misperception on the park management, especially in the issue on park occupation, illegal logging, illegal hunting, and illegal collection of NTFPs from the Park;
- Disparity in the knowledge level of communities;
- Misunderstanding on putting the value of the park function as conservation areas;
- The conflict interest between park management versus local communities; the park management focuses on conservation whereas local communities, especially those living surrounding the park borders, treat the park areas as the source for living; and
- The land ownership (claims) claimed by the local communities also emerge based on historical value; local communities consider the park as part of community land based on historical heritage.

Other than the above problems, several issues below also prevailed:

- Unclear and conflicting boundaries in spatial planning within the reserve
- Tenurial conflicts within the reserve areas to the communities living surround the park area after its expansion to 22,851 ha through inclusion of 7,655 ha of production forest area formerly managed by the state-owned company, Perum Perhutani
- Other tenurial conflict also with the golf course and recreational area of PT Alam Sutera Realty Tbk (ASR).
- Other conflict on the utilization and harvesting of natural resources and services including the collection of NTFPs.

The recommendations made to cope with the existing conflicts of interest in CBR management are summarized below:

a. Conflict on spatial planning

The establishment of spatial planning to ensure sustainable development of the biosphere reserve should accommodate three different dimensions:

- Development of horizontal priority that crystallizes fairness for all levels of community;
- Development of vertical priority which accommodates harmonized relationship between sectors at the regional and local levels; and
- Development of integrated priority which addresses overall development priorities towards the prosperity of all stakeholders

b. Conflict on tenurial system

The primary conflict of land occupation occurred in GGPNP, which is the core zone of CBR after the expansion of the Park area of approximately 7,655 ha which was formerly the area of state-owned company, Perum Perhutani. This expansion makes the total area of the park become 22,851 ha. The area of ex Perum Perhutani had been illegally occupied and utilized by local communities for different uses, primarily agricultural crops cultivation. Other land use conflict is also caused by forest encroachment with a total area of approximately 1,200 ha; the land conflicts also occur with several private companies surrounding the park. The existing conflicts of land in the biosphere reserve as mentioned above may escalate to serious problem in the future, unless a systematic and integrated solution is timely put in place.

c. Conflicts on natural resources due to illegal harvesting

The various resources available in the park areas attract illegal harvesting. The resources include timber, non-timber products, animal and other resource including fuelwood for energy. Therefore, awareness raising and enforcement programmes become the crucial part of the CBR management.

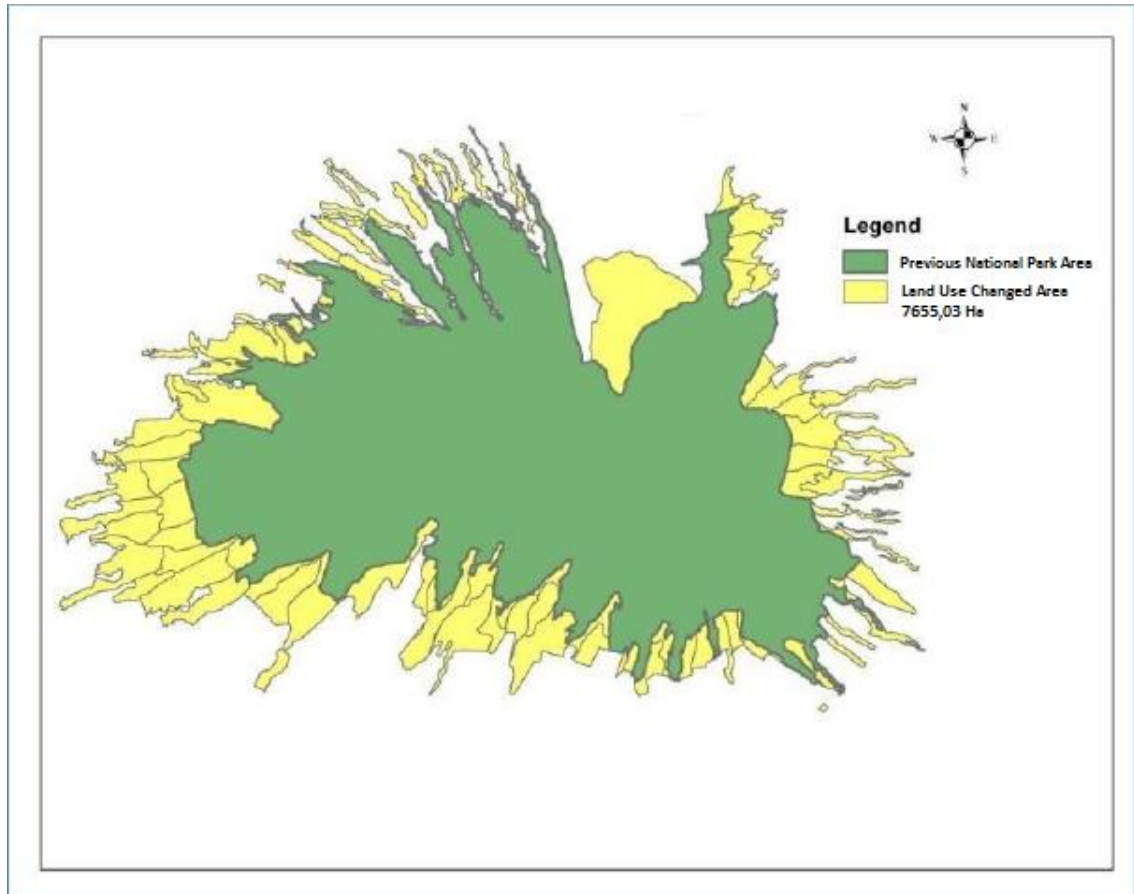


Figure 2. GGNP area after expansion (after Purwanto, 2013)

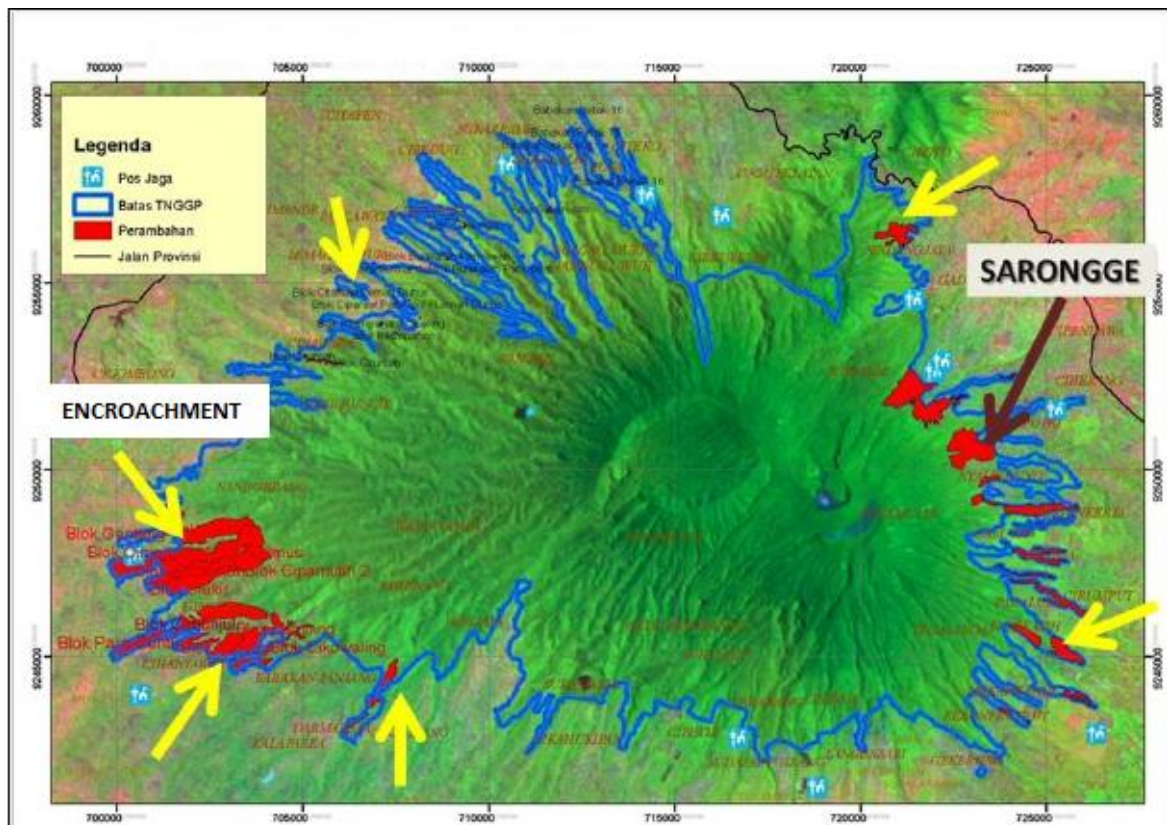


Figure 3. Encroached area of GGNP, shown by the yellow arrows (after Purwanto, 2013)



#### d. Other conflicts

Other conflicts found in CBR are related to the issuance of land certificate by the National Board of Land Certification (BPN) involving 17 pieces of land certificates. This issuance of certificates is indeed illegal documentation of the land. Other potential problem is the presence of enclave and community settlement inside the CBR area. The residents in have the potential to illegally encroach and illegally harvest the existing natural resources of CBR.

Several recommendations made to cope with the above conflicts are as follows:

- Landuse planning in the area of CBR should be developed based on a comprehensive assessment of the land functions and values in each zones, which by then will not cause conflict of landuse; building commitment to the spatial planning; synchronize the spatial planning at all levels of authority need to empower institution and legal aspects of the spatial planning by involving all stakeholders.
- In the formulation of spatial planning, coordination and cooperation should involve active participation from all stakeholders to reduce potential risk and conflict of interest. Therefore, the spatial planning should be based on ecological functions, social economic and cultural aspects.
- To minimize the illegal activity by local communities on the areas of conservation and biosphere reserve, a social prosperity approach needs to be carried out and put as the high priority programme in addition to awareness raising and other capacity building programmes.
- In order to minimize the illegal occupation of CBR areas by communities, clear physical borders (poles) accross and surrounding the park areas need to be established on the ground, especially on those borders directly connected to the community settlements.

### **3.2. Data and information on design and zonation**

Collection of data and information on CBR covers the several aspects below :

- The potential of natural resources inside CBR;
- Community interaction;
- Existing zonation within the park and CBR; and
- The existing spatial planning which also integrates the boundaries of neighbourhood districts (Bogor, Cianjur and Sukabumi) and the visible and acceptable design and zonation of CBR.

CBR, which is geographically located at the higher elevation, consists of various land covers such as various vegetations and community settlements of Bogor, Sukabumi and Cianjur Districts. CBR is also located in upper parts of major streams flowing toward the capital city of Jakarta through the cities of Bogor and Depok. Therefore, CBR is an important ecosystem and catchment area of Jakarta and other lower territories for protection and as a buffer zone from extreme excess of water and other associated potential disasters. By the above conditions, the spatial planning of CBR becomes critically important.

The data and information collected also contain the underlying management concept of existing biosphere reserve in connection with the existing surrounding districts of Bogor, Sukabumi and Canjur. The proposed zonation has been developed and formulated based on reliable and updated data and information on the existing zonation and use of CBR areas.

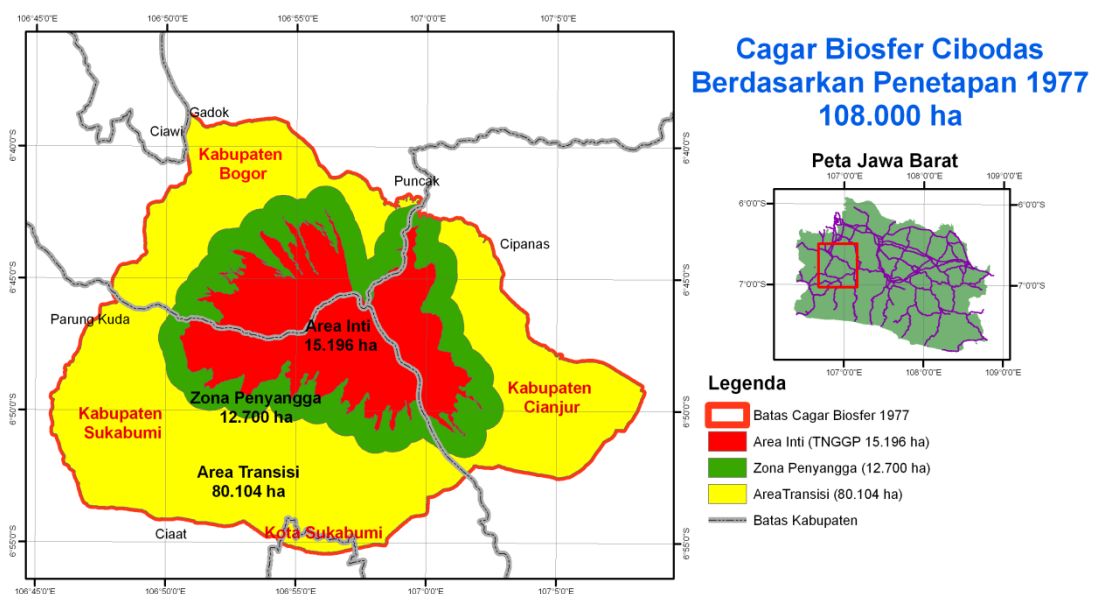


Figure 4. The original zonation of CBR in 1977 (Samedi, 2013 in Anonymous, 2013)

The current area of CBR is 167,100 ha in total, bordered by state main ringroad from Ciawi-Sukabumi-Cianjur-Cipanas-Cisarua and Ciawi. The change in total area of CBR from the year 1997 to 2012 is summarized in Table 1.

Table 1: The original and proposed areas of CBR (Ha)

Category	Original, 1977 <sup>1</sup>	Proposed, 2012 <sup>2</sup>
Core area	15,196	24,500
Buffer zone	12,700	54,800
Transition area	80,000	87,700
Total	107,896	167,000

Sources:<sup>1</sup> Samedi & Imansyah, 2012; <sup>2</sup> Samedi, 2013 in Anonymous, 2013

In addition, the villages in the buffer and transition zones have dramatically increased in number from 54 in 1977 to 147 at present (proposed new zoning). It is important to note that the transition zone has been reduced from 80,104 ha to 54,800 ha because part of the zone has become the buffer zone and core area of CBR. The justifications for the proposed area changes are outlined below:

a. Core Area

The core area consists of conservation area with the specific purposes for conservation of biological diversity, ecosystem monitoring, and conduct of undestructive research activities. At the early stage of development, the core area consisted of GGPNP with a total area of 15,196 ha. The Park area was later expanded to 22,851 ha. As it is proposed, the core area was also proposed to be expanded through inclusion of nature reserve (373,25 ha) and Nature Recreational Park of Telaga warna (5 ha) as well as the Jember TWA (50 ha). In 1978, the biosphere reserve of Cibodas was formally established for the first time and at the same time the scattered areas of nature reserve, Cibodas Botanical Garden and other surrounding conservation areas were then integrally managed as CBR.

b. Buffer Zone

The buffer zone is the area that surrounds the core area with the specific function to conserve and protect core area from destructive and negative impact of human activities. In the buffer zone only ecologically based activities are allowed, such as eco-education, recreation, ecotourism and research activities. The buffer zone is located in the districts of Bogor, Cianjur and Sukabumi and directly connected to the some 59 villages. Based on the existing statistical data in 2009, 17 villages are located in the buffer zone of Bogor District, 20 villages in the Cianjur District (Statistical data 2011,) and 22 villages in the Sukabumi District (Statistical data 2011). The land covers in those villages are mostly dominated by estate crop plantations, dry ricefield, irrigated ricefield, and other crops cultivation and shrubs.

c. Transition Area

The transition zone of CBR consists of urban areas, agricultural land, fisheries, and other land uses, and is utilized under various human activities at which different cultural backgrounds are simultaneously at work. In the transition zone there are 19 villages in the District of Bogor, 21 villages in the District of Cianjur, and 38 villages in the District of Sukabumi. The conflict in landuse and spatial planning mostly arise due to lack of clear spatial planning and disconformity of the landuse plan and actual utilization.

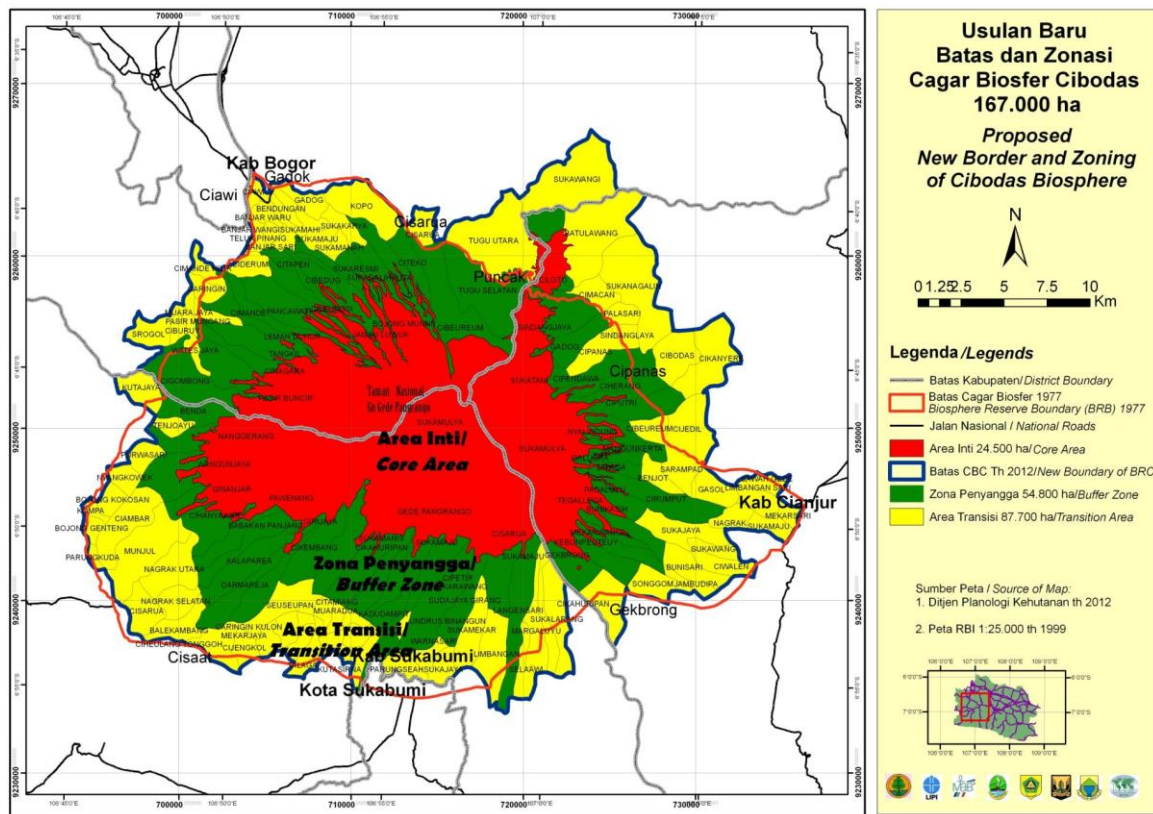


Figure 5. The proposed new CBR border and zoning system in 2013 (Samedi & Irmansyah, 2013)

The proposed management prescriptions of the CBR area are described below:

a. The core area

The core area consists of conservation areas, such as GGPNP, Nature Reserve and Recreational Park of Telagawarna. In accordance with the Law No. 5/1990 on conservation of biodiversity and ecosystem, the conservation areas should be translated into Management Plan which further translated into short and medium term plans. The GGPNP is managed with zoning system which consists of core zone, utilization zone, and other zone. GGPNP as core area of the CBR is further divided into 8 small zones, namely core zone, jungle zone, utilization zone, traditional zone, rehabilitation zone, Javan Gibbons conservation zone and specifically allocated human activity zone. The

GGPNP possesses various resource potentials, such as hydrology, flora, wildlife, and nature uniqueness phenomena.

In addition to the GGPNP, Nature Reserve and Recreational Park of Telagawarna and Taman Wisata Alam (TWA) Jember also possess several ecotourism potential. Telagawarna is located at top hill roadway from Jakarta to Bandung, called Puncak. The Puncak has become a favorite place for recreation with the fresh-cold temperature and beautiful tea plantation view. TWA Jember is also located at the hilltop of Puncak with a total area of 50 ha.

b. The buffer and transition zones

Based on the assessment on resource potential, nine suitable management practices have been identified for the buffer and transition zone. The proposed management practices include ecotourism, conservation/environmental education, sustainable agriculture/animal husbandry, eco- crop estate plantation, Sustainable economic business, cultural heritage, environmentally sound industry, eco friendly residential area, and rehabilitation of catchment area.

### **3.3. Conducting a series of training workshop on CBR management plan**

A series of training workshop have been conducted as follows:

- 26-27 November 2012 in Bogor with 25 participants
- 28-29 November 2012 in Cianjur with 27 participants
- 3-4 December 2012 in Sukabumi with 26 participants

The training workshops were participated by the relevant stakeholders involved in managing CBR, covering the core zone, buffer, and transition zones. The participants were the representatives of GGPNP authority, collaborators of GGPNP, related institutions (industrial, education and culture, ecotourism, estate crop, agriculture, board of development planning, women associations), NGOs and community leaders. In addition to the training workshops, an activity on a coordination meeting on the CBR management program was also carried out with the primary objective to provide better understanding on CBR management. It was clearly reported that most stakeholders attending the training workshops and coordination meeting have the common understanding on the reserve management programs and activities. The workshops and the meeting argued that by by minimizing the current and future conflicts, the sustainable management of CBR could be achieved.



Training workshop held in Bogor District (Photos by the project)

In the coordination meeting a series and continued activities to promote CBR management program including local community prosperity program are expected to be further developed; By so doing, the potential conflict cost mostly by economic needs could be resolved. In relation to the above, a roadmap toward the management and development of CBR, which accomodates most of the existing conflicts of interest has also been constructed in addition to the ISMP.

The crucial issues raised by the participants of the training workshops were:

- Understanding on the biosphere reserve concept including its relationship with the existing conservation of the area (such as GGNP).
- Limited publications to reach all levels of community on CBR.
- Forestry extension and patrol.
- Involvement of students and other community in CBR campaign.
- Funding accessibility across institutions
- The clarity of borderline between CBR areas and community settlements.
- The importance of signing MOU between GGNP, provincial and district governments
- The emergences of various resorts and residential areas in the CBR areas.



- The need for a media center for different institutions to communicate and interact.
- The strong commitment from all stakeholders in the achievement of CBR management objectives.



Training workshops help in building and strengthening commitment from stakeholders in each district (Photos by the project)

### 3.4. Development of the ISMP

#### a. Approaches to removing the barriers to CBR management

In the preparation of the integrated strategic management plan (ISMP) for CBR, several approaches to removing barriers in the management of CBR need to be adopted as follows:

- Deep understanding on the existing condition and the associated problems faced by the CBR based on the report by the consultants which have been prepared through stakeholders consultation and field observation.
- The objective of CBR management is formulated based on the existing national policy, primarily the Government Regulation No. 26/1008, Presidential Regulation No. 114/1999 as well as the Seville Strategy and Madrid Action Plan.

- The priority programmes and medium term activities are based on the relevance to the already existing programmes and realistic load of work to be carried out to cope with the existing problems.
- The primary problem on the CBR management and its interrelated cause-effect is analyzed using problem tree analytical technique, whereas an objective tree is constructed based on the problem tree. The solution tree shows the relevant intervention needed to solve the various problems.
- The strategy is formulated based on the problem tree and solution tree; the programmes are formulated correspond to direct causes and the activities are defined correspond to the sub-causes (indirect causes) of the key problem.
- The intervention is developed based on the management practices suitable to the factual condition in each zone of the CBR.

#### **b. The problem identification of CBR management**

Available data and information and their associated analyses indicate that the primary problem facing CBR management is that the management is not executed in accordance with the biosphere reserve concept. The main causes are identified unclear and inadequate spatial planning process and zoning; the existing institution does not well function; the occurrence of landuse conflicts; the best management practices have not been identified, introduced and applied; the support from community remains weak; and communication as well as public campaign on the CBR development is still insufficient.

#### **c. Priority programmes and activities of CBR management**

Several priority programmes and major activities have been derived from the problem and solution trees; they are:

Program 1: securing the reserve area and strengthening of spatial planning

- 1.1. To assess and complete legal basis for area protection and zonation
- 1.2. To finalize zonation of the CBR area in a realistic and rational way
- 1.3. To assess and revise provincial and district spatial planning based on outcomes of Activity 1.2.
- 1.4. To promote commitment of stakeholders to area protection and spatial planning.

Program 2: Institutional strengthening

- 2.1. To harmonize existing policies on CBR management at the central, provincial and district levels.
- 2.2. To synchronize operational plans at central and local levels



- 2.3. To prepare and adopt SOP on CBR management at the central and local levels
- 2.4. To activate the CBR Forum
- 2.5. To formulate and adopt operational funding strategy

Program 3: Landuse conflict resolution

- 3.1. To assess the conformity between land allocation policy to actual land use practices
- 3.2. To solve the conflict between community segments in land utilization
- 3.3. To harmonize relationship between the CBR authority and local stakeholders
- 3.4. To formulate and adopt SOP for conflict resolution
- 3.5. To improve capacity in law enforcement

Program 4: Formulation and application of best management practices (BMP) in each zone

- 4.1. To identify BMP for each zone
- 4.2. To conduct socialization of the BMP for better understanding
- 4.3. To conduct trials in the application of BMP in cooperation with stakeholders
- 4.4. To prepare technical manual in the application of BMP based the above trials
- 4.5. To train stakeholders in the implementation of BMP in accordance with local specific conditions

Program 5: Improvement of community participation in CBR management

- 5.1. To improve community understanding on CBR management through dialogues
- 5.2. To reduce dependency of community on CBR resource
- 5.3. To introduce and apply incentive suitable for communities to support CBR management
- 5.4. To improve community capacity in the application of BMP through managerial and technical training

Program 6. Enhancing information system and campaign on CBR development

- 6.1. To install and operate a CBR management information system
- 6.2. To establish and operate a publicly accessible CBR website
- 6.3. To improve capacity in extention operation
- 6.4. To improve participation in international events to strengthen CBR network
- 6.5. To involve mass media in the campaign of CBR development
- 6.6. To prepare, produce, and distribute information on CBR

#### **d. Budget estimates of PAP 2013-2020**

To operationalize the Program and Action Plan (PAP) 2013-2020, sufficient funding is required; it was estimated at approximately IDR 29,413,000,000 or at USD 2.9 million equivalent (assuming an exchange rate of IDR 10,000/USD). The above amount is to support planned six programs, with an unequal budget allocation between individual programs.

### **3.5. CBR Forum**

A coordination and communication forum for CBR management which has been previously established by West Java Governor Decree (No. 522.51/Kep. 157-BKPPW I/2010 dated 21 Jan 2010) has become an important component of Output 2. The Forum has been used as the media for various events in the project operational activities, especially to achieve Output 2. This forum consists of chairman, secretary and three divisions with the main tasks as outlined below:

#### **a. The Chairman**

- Is assumed by the Head of the government and development coordination board of West Java Province
- To establish understanding on the vision, mission and the objectives of CBR development
- To integrate activities of all stakeholders within the CBR in accordance with the concept of biosphere reserve development
- To develop management programs and priority actions which synergize the concept of sustainable development and environmentally sound management
- To provide solution to conflicts of interest in land utilization

#### **b. The Secretary**

- Is assumed by the Head of Mount Gede Pangrango National Park
- To develop plans and priority action on CBR management
- To develop programs in accordance with the vision, mission, and objectives of CBR management
- To provide solution to existing conflict of interest in CBR area utilization
- To develop a fundraising plan to support CBR management operations

**c. Division of conservation, education and research**

- To formulate policies relating to conservation, education and research programs
- To hold coordination with other relevant institutions in the formulation of management plans
- To coordinate conservation activities, including restoration and rehabilitation of degraded forest and land inside and outside the CBR area
- To integrate and synchronize conservation programs of CBR with development plans of West Java province and the districts of Bogor, Sukabumi, and Cianjur
- To synchronize programs of CBR with the other spatial plan processes within the province and the districts
- To develop guidelines for the monitoring and supervision covering reporting, evaluation and monitoring of CBR management operation
- To prepare proposal for conservation, education and research programs

**d. Division of Community Empowerment**

- To construct policies and programs on community empowerment
- To coordinate programs and action related to community livelihood through the utilization of environmental services
- To provide inputs to the chair of the Forum and other divisions
- To coordinate with other institutions in community empowerment in the CBR area
- To identify and assess problems that may arise in the execution of community empowerment programs and actions
- To undertake reporting, evaluation and monitoring in a regular basis on community empowerment activities

**e. Division of sustainable and environmentally sound development**

- To develop policies and programs on the execution of sustainable and environmentally sound development
- To provide inputs to the chair and other division
- To develop guidelines for practicing appropriate land utilization techniques
- To coordinate with other institutions to support sustainable and environmentally sound economic development

## **4. ANALYSIS OF FINDINGS**

### **4.1. Resolving the existing conflicts**

The process towards the achievement of sustainable management and conservation of GGPNP and CBR through the formulation of a sound management of core area and buffer-transition zones of the CBR is progressing in two different directions. The first one is the direction made to the management of core area which is located inside the GGPNP, nature reserve and recreational park of Telagawarna, Nature Recreational Park of Jember in Cianjur (West Java). The other direction made is to deal with the management of buffer and transition zones which are located outside the core area and directly exposed to the communities residing in a numerous villages and other residential areas.

Each area of the core zone is designed for further utilization depending on the existing resources of the park. The park itself is divided into several zones called core zone, jungle zone, utilization zone, traditional zone, rehabilitation zone, conservation zone, and other zone for community specific purposes. GGPNP has rich potential of natural resources, such as hydrological, floristics, wildlife, nature uniqueness-phenomenon. For these resources, a variety of applicable activities have been identified and could be further developed to support the integrated management of the CBR. Such activities are to be implemented on each of the zones of GGPNP, as appropriate, based on: (i) the potential, (ii) existing policies, and (iii) management objectives

The proposed activities on the buffer-transition zones include eco-tourism, environmental conservation, education, agriculture, poultry activities, eco-friendly estate cropping, cultural heritage, environmentally sound industries and settlements, and rehabilitation of catchment areas. These proposed activities are consistent with the existing laws. Law No. 5 of 1990 enables the forest areas inside the biosphere reserve to be managed under the cooperation with international institutions, especially UNESCO-MAB. In order to implement operational management plans of CBR, regional/local regulations (PERDA) at the provincial and district levels should also be formulated to obtain wide acceptance of stakeholders at all levels, especially from the local governments and communities. Under the PERDA, the operational management of the CBR could be integratedly and legitimately executed.

## **4.2. Redesigning and rezoning of CBR area**

All the necessary data and information on CBR resources and its potential for development have been fully collected and sufficient for the purpose of redesigning and rezoning the CBR area in view of increasing effectiveness of management operations. Public consultation, coordination meetings and socialization of the park problems, as well as proposed CBR area extension and ISMP should have given ample opportunity for stakeholders to make a close look on the concepts of CBR development and to adopt the proposed ISMP.

This plan should receive wide acceptance by stakeholders since it has been forwarded through various ways including the series of training and public consultation with some necessary adjustments made using the inputs from the public consultation process. The necessary conditions that need to be resolved include revision on the existing design and zonation of CBR based on updated reliable information, strong commitment of governments and local communities especially to spatial planning process in accordance with carrying capacity of the resources. The necessary regulation, which binds all stakeholders has been prepared; the establishment of special institution responsible for CBR management and formulation of local government regulations that support CBR management has been initiated.

A communication and coordination Forum towards the achievement of integrated and collaborative management of CBR has been formally signed by the Governor of West Java province where the CBR is geographically located. This Forum is one of the key parts to achieve this particular Output and longterm objectives of CBR management. Through this Forum, active communication amongst stakeholders could be consistently carried out for sharing the information, experience, and insights relevant to the promotion of CBR conservation and development.

The ISMP identifies six major programmes to be implemented to cope with the main problems facing CBR management, one of which is “resolution of the conflicts on CBR space utilization”. The types of conflict and characteristics of each zone well elaborated in the technical report of the consultant on Activity 2.1 that has been published and widely distributed to the primary stakeholders. Indeed, conflicts on CBR space utilization will inescapably interfere with implementation of planned programmes and activities. For instance, planned tree planting on degraded forest and land may not be realized as the land is occupied by local people; biodiversity conservation-related research in the core area may experience failure as monitoring plots are encroached by

local people. Indeed, conflicts on space utilization must be resolved if an effective management of CBR is ever to be performed.

The programmes on conflict resolution as proposed in the ISMP comprise five major activities, assumed relevant to resolving the conflicts that have been occurring, as follows:

**i. To assess conformity of policy on land use rights to actual land use practices**

This activity suggests that, to be realistic and applicable, policy on the use of land inside the CBR area should be based on actual land use practice and main characteristics of the land. The activity also implies that land use policy at different levels of government must be consistent to one another to avoid confusion and further create another conflict. That is to say that the activity is designed to resolve structural conflicts on space utilization

**ii. To resolve the conflicts between community groups**

Conflicts among community groups on land use rights are best to be realized through direct dialogues. During the dialogue process, the GGPNP authority and district governments must also make clear to the conflicting groups of the legal status of the land under dispute. In addition, concerned authorities need to clarify on the laws governing land allocation and use that have to be complied with by citizens. Clearly, the activity has been designed to resolve horizontal conflicts.

**iii. To harmonize relationship between GGPNP authority at local stakeholders**

Conflict of interest in space utilization arises due to contradictory perception and understanding on land use rights. The authority perceived that CBR core area is to be conserved for long-term indirect benefits while the local stakeholders, notably the local communities, perceive that the very same area is to be utilized for immediate, direct income. This contradicting perception must be harmonized through direct and continued dialogues. During the dialogue process, concerned authorities must also make clear of the existing laws that have to be observed by all parties; that violation of the laws by any parties entails punishments. Obviously, the activity has been proposed to cope with occurring vertical conflicts.

**iv. To develop and adopt a SOP for conflict resolution**

Any conflicts must be resolved in a fair and transparent manner. For this, a SOP (Standard Operating Procedures) has to be developed in a participatory

manner. Such SOP should be developed based on existing land laws which must be truly understood by the local stakeholders. Prior to formally adopting the SOP developed, pilot testing of its application is required to make sure that it is applicable on the ground. After a pilot testing process is completed, the SOP has to be formally adapted. In this manner, any consequences of applying the SOP to resolve a conflict should now be acceptable to disputing parties.

**v. To enhance capacity in law enforcement**

Every citizen is equal before the law; the laws governing CBR space utilization must be well understood by all stakeholders that consequences of enforcing the laws are acceptable to all concerns. This is one of the most important tasks of the GGPNP authority that has to be carried out which is best to be accomplished through intensive and continued dialogues. To be effective in enforcing the laws, it is best to adopt a collaborative operations wherein local stakeholders, notably the local communities, are an important component of the system. A SOP for performing a collaborative law enforcement needs to be developed with the participation of local stakeholders to ensure effectiveness of its operations.

The two directions of management interventions indicated in the previous paragraphs are well captured in the programs and activities presented in the ISMP. A close look onto the ISMP also revealed that the problems addressed by the ISMP were identified using the results of the preceding activities including the meetings, workshops as well as the discussions, the assessment of conflicts and results of the zoning process. Therefore, the management interventions proposed by the ISMP in the forms of program and activity are the relevant measures and means for coping with the resulting problems. Formal endorsement of the ISMP is strongly recommended to ensure its legitimate implementation.

### **4.3. Assessment of achievement**

The achievement of Output 2 could be verified through several indicators as follows:

- Report on the 3 series of dialogue on conflict of interest in implementing an integrated conservation of natural resource and sustainable management of CBR. These series of dialogue were attended by the relevant stakeholders, government institutions, and other community groups. Several focus group

discussions have produced feasible recommendations to accelerate the implementation of CBR conservation and management. The complete findings could be found in the reports on: (i) Assessment of the existing conflicts of interest in implementing integrated conservation natural resources and development, (ii) Report on the public consultation and socialization of CBR (*Laporan Konsultasi Publik dan Sosialisasi Cagar Biosfer Cibodas*), (iii). *Roadmap toward the management and development of CBR (Roadmap Pengelolaan dan Pengembangan Cagar Biosfer Cibodas)*, and (iv) ISMP for CBR (*Rencana Strategi Terpadu Pengelolaan Cagar Biosfer Cibodas*).

- The second indicator of achievement of this Output is also presented through the provision of report on Activity 2.2: Collecting data and information on design and zonation border of CBR (*Data dan informasi rancangan dan zonasi cagar biosfer Cibodas*). In this report complete assessment on CBR resource potential and future plan are presented and has become the basis for the formulation of the ISMP for CBR and the development of the roadmap as mentioned earlier.
- The achievement of Output 2 is also verified through the complete execution of Activity 2.3: A series of training workshop toward the sustainable management of CBR; the training workshops toward better management of CBR (*Laporan Lokalatih Menuju Tata Kelola Cagar Biosfer yang baik*) which have been participated by most stakeholders, from provincial district governments, local community groups and NGOs. The training workshops were organized on 27-29 November 2012 in Bogor (25 participants); 28-29 November 2012 in Cianjur (27 participants); 3-4 December 2012 in Sukabumi attended by at least 26 participants. The topics presented in the training workshops covered most of the findings of Activities 2.1, 2.2 and an additional topic on the security system and field inspection.

Achievement of Output 2 is verified by the publication of final draft of ISMP for CBR, the increased implementation of forest law enforcement, the enhanced community awareness on the benefits of biosphere reserve for community livelihoods. At the project level, the achievement is also indicated by the availability of report on the assessment and dialogues on the conflict of interest in the management of CBR, collected data and information on the CBR resources and the conduct of a series of training workshop on the reserve management plan. Those reports have been provided and well documented thus verify the indicators of the achievement of Output 2 of the project.



Having indicated the outcomes of individual activities and the fulfillment of the predefined indicators, the ISMP developed has undergone an adequate process as outlined below:

- The key problem addressed by the ISMP has been defined in light of the basic concepts of a biosphere reserve development and consistent with the factual performance of CBR management.
- The key problem has been adequately analyzed in light of the reliable and updated information on the bio-physical, socio-economic, and political as well as institutional aspects of the reserve.
- The management interventions have been identified consistent with the direct as well as indirect causes of the key problem, and resulted in the management strategy that comprises six programmes and thirty-two priority activities, in total.
- The management interventions identified are, presumably, the ones that are relevant and effective to resolving the various problems facing CBR management.
- The ISMP has been disseminated to stakeholders through the various means including consultative meetings and public hearings in order to obtain endorsement for its adoption and implementation; and
- The enabling conditions for implementation of the ISMP covering the institutional, financial, and operational aspects have been properly identified.
- In essence, the ISMP has undergone an adequate process of formulation and presents the relevant interventions to solving the management problems of CBR, It is therefore crucial to formally adopt the document in order to legitimate its application.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1. Conclusions**

- i. Conflict of interest in managing the Park and CBR is present and the possible solution to cope with the conflict has been addressed in the roadmap and plan for integrated management of CBR.
- ii. The necessary data and information required to support proposal for redesigning and rezoning of CBR, including the conservation areas inside the CBR, such as GGNP, nature reserve and recreational areas have been collected and analyzed and have facilitated the construction and formulation of a roadmap for CBR development and an integrated strategic management plan.
- iii. To ensure that the roadmap and the ISMP reach wider acceptance from the relevant stakeholders, public consultation and socialization processes have been accomplished through various ways.
- iv. Through the above public consultation and socialization, the concept proposed in the roadmap and the ISMP are expected to receive wide acceptance by those stakeholders and therefore could be implemented smoothly on the ground.
- v. Communication and coordination forum which has been previously formed is essential to maintain communication among stakeholders and to facilitate identification of activities relating to the implementation of roadmap and the ISMP at both the park and CBR levels.
- vi. A joint commitment is required from government and other stakeholders to run the defined strategies for utilization of CBR resources in accordance with existing policies; a government regulation of the right level of hierarchy that binds all parties is required to enforce such commitment.

### **5.2. Recommendations**

- i. All relevant stakeholders should maintain the spirit and communication toward the implementation of the roadmap and integrated management plan.

- ii. Sufficient funding should be made available to facilitate the functioning of the Forum as the media for socialization and continued awareness raising to all stakeholders.
- iii. Local governments (provincial and district) should actively participate in safeguarding and implementing the roadmap and ISMP.
- iv. A roadshow program to socialize and disseminate the roadmap and ISMP should be continuously carried out by the park management as well as CBR authorities.
- v. The already established CBR Forum is also expected to play greater role in the monitoring of ISMP implementation.
- vi. A regulation that binds all relevant parties need to be further developed, such as provincial and local regulations to adopted ISMP.
- vii. Local government regulation (PERDA) on spatial planning need to be more specific and in better synergy with other existing spatial planning policies.

## 6. IMPLICATIONS FOR PRACTICE

- The Executing Agency and Indonesian Institute of Science (LIPI) will consistently safeguard the findings and results of these project, especially those related to the mechanism used for monitoring.
- The constructed design of CBR area must be adopted in order to achieve the management objectives through implementation of the ISMP.
- All participants of training program on CBR management should be kept in contact as the media for continuous communication and dissemination of the management status of the reserve.
- The Provincial Government of West Java and District governments of Bogor, Sukabumi, and Cianjur should allocate their resources to support the achievement of CBR management objectives.
- A number of competent officers and staffs should be recruited to execute the concept of CBR development consistent with the ISMP developed.
- Several regulations which have not been completed but needed to operationalize the management of CBR, will be the remaining task of GGPNP authority to formulate.
- The GGPNP is the leading institution to carry out the management interventions which will enhance the achievement of CBR development objectives.
- An ISMP for the CBR has been developed through a comprehensive process by employing all existing resource, data and information including through stakeholder consultation thus the ISMP should have received wide support by stakeholders but requires formal adoption that has to be secured by the GGPNP authority and also concerned authorities.

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