Kanoppi Policy Factsheet 3: Fostering resilient institutional arrangements

Enhancing landscape-based planning for improved management of forestry and other related sectors in Bribin Watershed, Gunungkidul District – Yogyakarta

Phase 2

CIFOR and Research and Development Center for Management of Watershed (Balai Penelitian dan Pengembangan Teknologi Daerah Aliran Sungai-BPPTPDAS) Solo, Forestry and Environment Research Development and Innovation Agency (FOERDIA), Ministry of Environment and Forestry.

Tools: integrated baseline data obtained through participatory processes on land uses, water management and hydrology, socioeconomics, institutional, and regulatory frameworks

Overview and identified problems

Bribin Watershed:

1. The main watershed contributes significantly to local livelihoods and ecotourism industries.
2. The watershed is regulated under Provincial Government Regulation No. 11/2016.
3. The area is unique; it is dominated by an interconnected karst system from upstream to downstream.

Challenges:

1. Integrated policy frameworks at the district and provincial level are still lacking.
2. There is no comprehensive baseline and understanding of the management problems.

The aim of developing integrated baseline data through participatory processes:

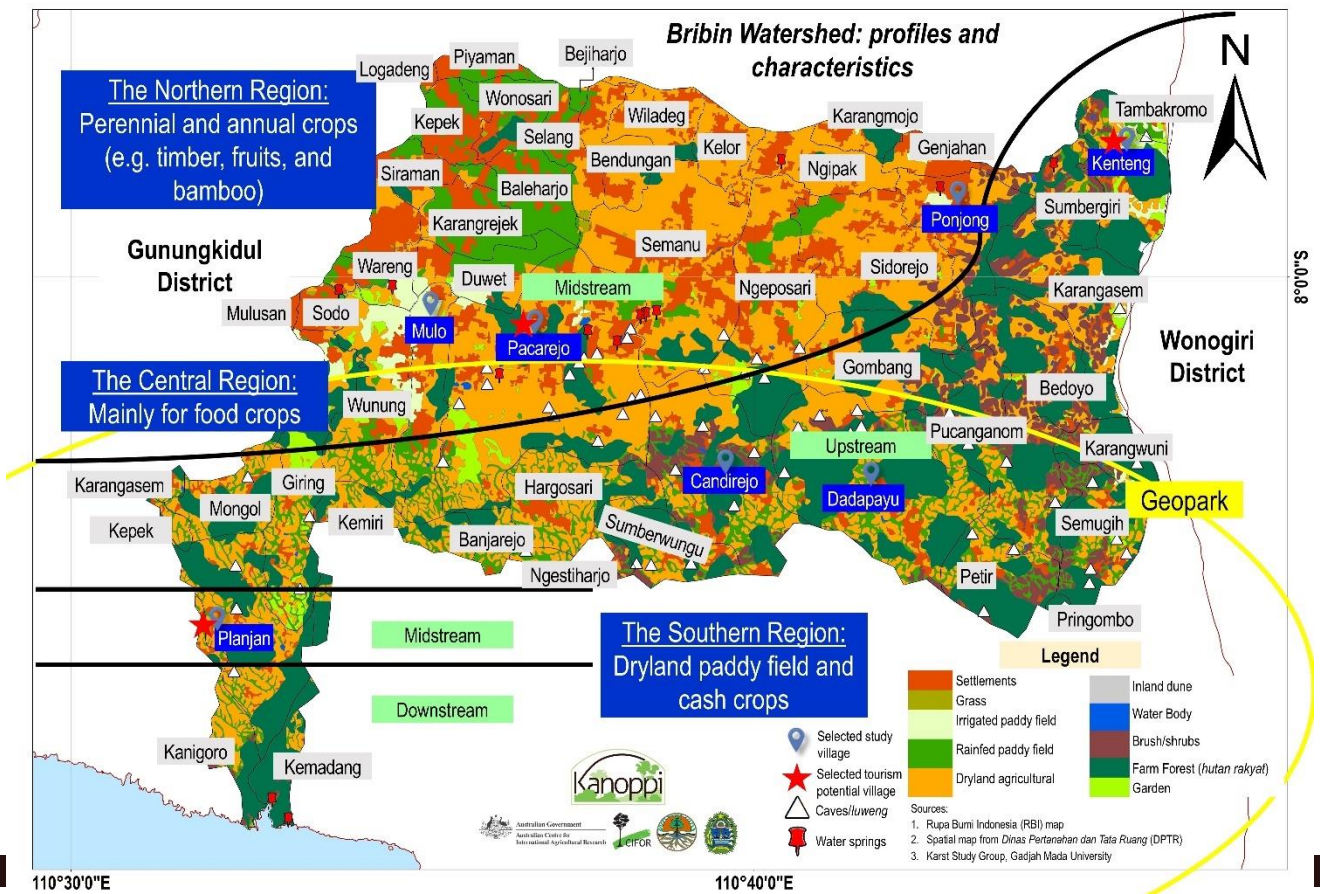
The baseline is a prerequisite condition to analyze options for developing policy and a regulatory framework fostering integrated landscape-based management for regional economic development.

Approach and research locations

Aims for formulating integrated recommendations for scenarios for fostering resilient institutional arrangements used:

1. Participatory Action Research:
   Multi-stakeholder FGDs at district and village levels, direct observations, soil and hydrological sampling, socioeconomic surveys; guided by secondary data, spatial analysis and ground surveys.
2. Selected case study villages:
   Kenteng, Dadapayu, and *Candirejo* (representing upstream); *Ponjong, Pacarejo*, and *Mulo* (representing midstream); and *Planjan* (representing downstream).

Selection criteria: 1) watershed zonation (upstream, midstream, and downstream), 2) area of farm forestry (*hutan rakyat*), 3) attributes of karst system: ∑ caves, ∑ sink holes, ∑ ponds, and 4) traditional mining.



Key findings and recommendations

1. Spatial and land-utilization

- Competing utilization: agriculture, forestry and ecotourism based on karst-based caves, lakes and water springs.
- The map accuracy varies due to different utilization of similar parcels of land during two different seasons.
- In 2017, a natural disaster emphasized the interrelated, dysfunctional aspects of mismanagement in the use of the karst system in the Bribin Watershed.
- The district government, in coordination with the provincial government, needs to update their spatial planning.

2. Socioeconomics

- Land-based livelihood strategies still dominate.
- High expectations for ecotourism-based opportunities as a trajectory out of poverty.
- Equity and fair distribution, in relation to benefits from tourism industries, have resulted in serious social gaps and jealousy.

3. Institutional arrangement and policy framework

- Provincial government has put less priority on Bribin Watershed, due to the district government's under reporting and lack of advocacy.
- The district government could use baseline data, produced in association with Kanoppi, fore policy advocacy processes to inform and convince the provincial government to put more priority on Bribin Watershed.

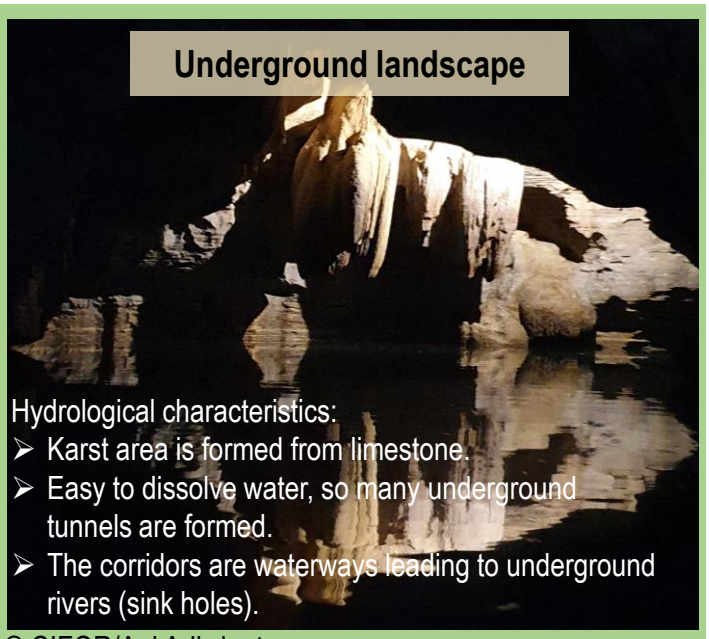
4. Hydrological and water management aspects

- Preliminary indication: it is common for sinkholes to be used as waste dumps; this has affected the water quality and quantity in the karst system.
- The index for *E.coli* bacteria found in the water, throughout the watershed, has been consistently higher than the minimum safety standard set by the Ministry of Health.

5. Recommendation for actions

Inter-sectoral and inter-agency coordination should be facilitated to discuss collaborative action plans to resolve the management problems of Bribin Watershed.

Underground landscape



Hydrological characteristics:

- Karst area is formed from limestone.
- Easy to dissolve water, so many underground tunnels are formed.
- The corridors are waterways leading to underground rivers (sink holes).

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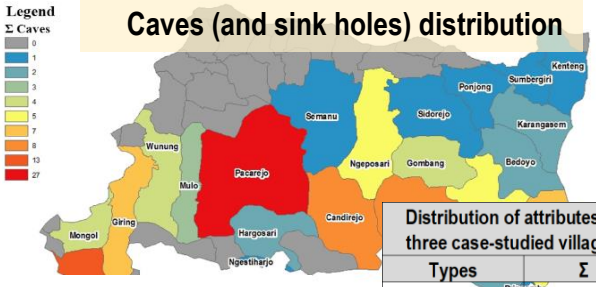
Mapping of potential resources

Caves (and sink holes) distribution

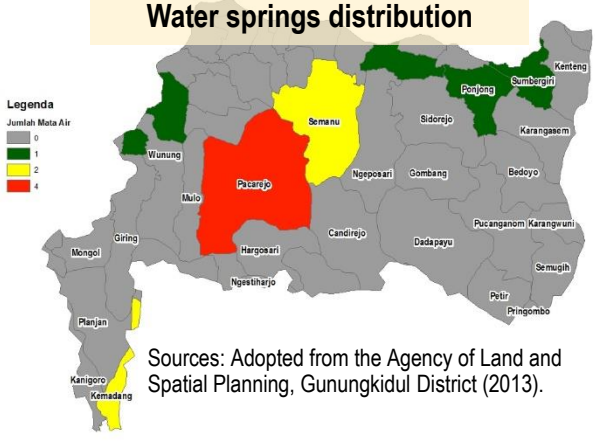


Source: Adopted from MacDonald and partners (1984).

Distribution of attributes in three case-studied villages

Types	Σ
Caves	9
Sink holes	26
Natural-ponds	16
Postered-ponds	1
Grand Total	52

Water springs distribution



Sources: Adopted from the Agency of Land and Spatial Planning, Gunungkidul District (2013).

Notes: Kanoppi will be presenting the results and facilitating the second FGD at the district level with this agenda

CIFOR, Research and Development Canter for Management of Watershed (*Balai Penelitian dan Pengembangan Teknologi Daerah Aliran Sungai-BPPTPDAS)* Solo and Regional Planning Agency Team (*Badan Perencanaan dan Pembangunan Daerah-BAPPEDA*) Gunungkidul District:
Ani Adiwinata, Sri Muslimah (CIFOR), Purnomo Sumardamto (Gunungkidul District Government), Nunung P. Nugroho, Susi Abdiyani, S Agung Sri Raharjo, Nining Wahyuningrum, Nana Haryanti, Purwanto, Pranatasari D. Susanti, Pamungkas B. Putra, Agung W. Nugroho, Eko Priyanto (BPPTPDAS Solo), Sri Suhartanta, Bambang Riyanto (BAPPEDA Gunungkidul District).

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