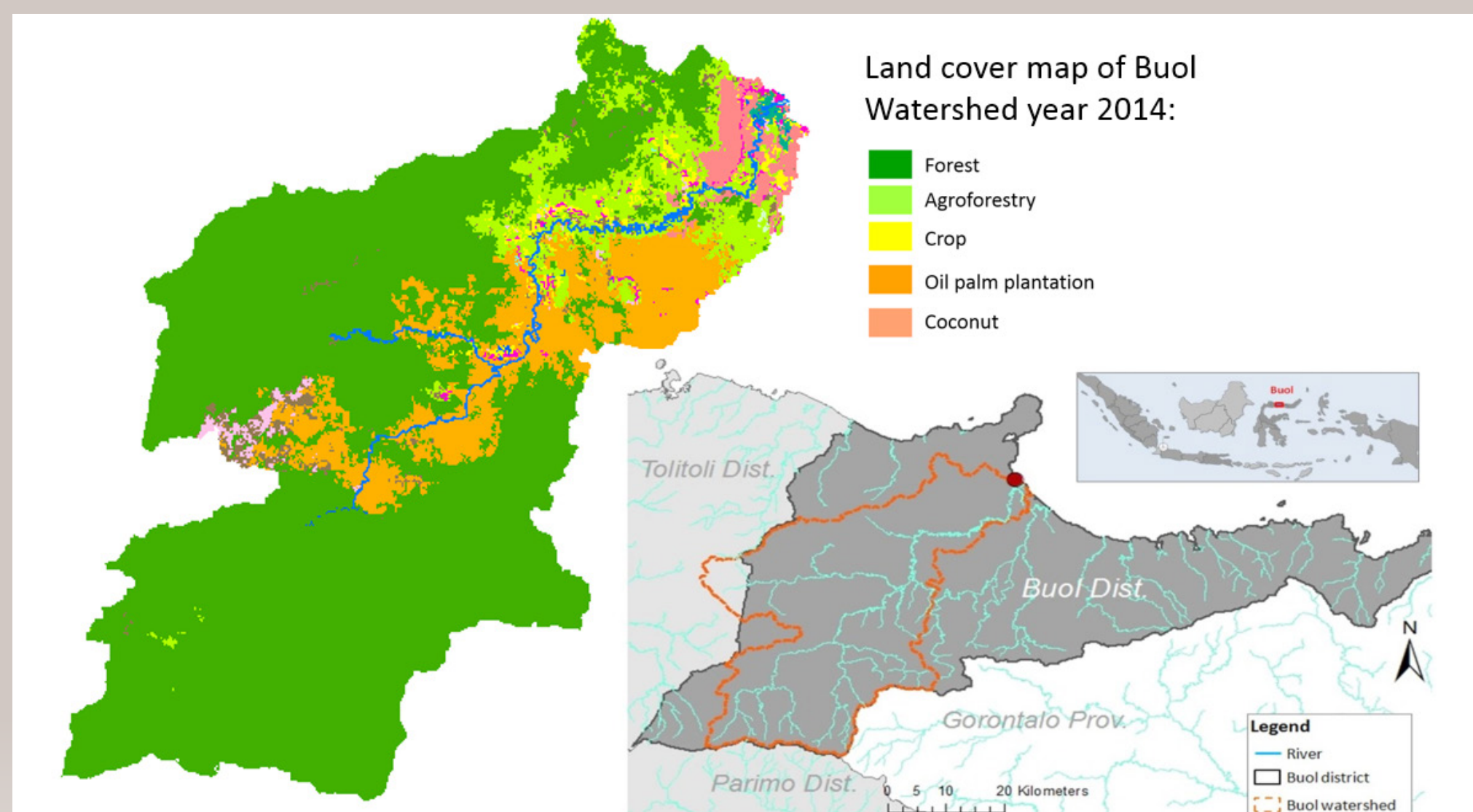


Collaborative Watershed Management for Enhancing Watershed Function:

A Case From Buol Watershed, Central Sulawesi, Indonesia

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Land cover map of Buol watershed year 2014

Buol watershed (1753 km²) spans one third of Buol district in Central Sulawesi, Indonesia. Forest conversion to oil palm and mass settlements, threatened the provision of environmental services.

The people living in the watershed routinely experience hydrological problems i.e. drought during dry season; floods and landslide during rainy season. Lack of community understanding and awareness about watershed function is one

of the cause of those problems. Furthermore, the data availability that can be used to support watershed management became another challenge.

The hydrological research in Buol was developed as a pilot model for participatory watershed management, where the community, district government and researcher collaborate in managing Buol watershed.

The objective of the hydrological study in Buol are:

1. **Collecting climate and hydrological data** required for assessing the watershed condition
2. **Raising community understanding and awareness** on the positive and negative impact of human activities on watershed function
3. **Improve the knowledge and ability** of local government and community in conducting monitoring and evaluation of watershed function



Activities in The Hydrological Research

1. Participatory climate and hydrological data collection



The principle of participatory data collection are community-based, easy to implement, using simple equipment, easy to replicate, and yet useful and credible for monitoring watershed function.

2. Awareness raising through Watershed Game

Watershed game is a simulated game to increase community understanding and awareness on :

- The current **condition** of the watershed?
- The change needed in **behavior** to address hydrological issues
- The **need for cooperation** in addressing hydrological issues
- **Mitigation option and Coping strategies** for flooding, drought and landslide



3. Training on simple monitoring of watershed function

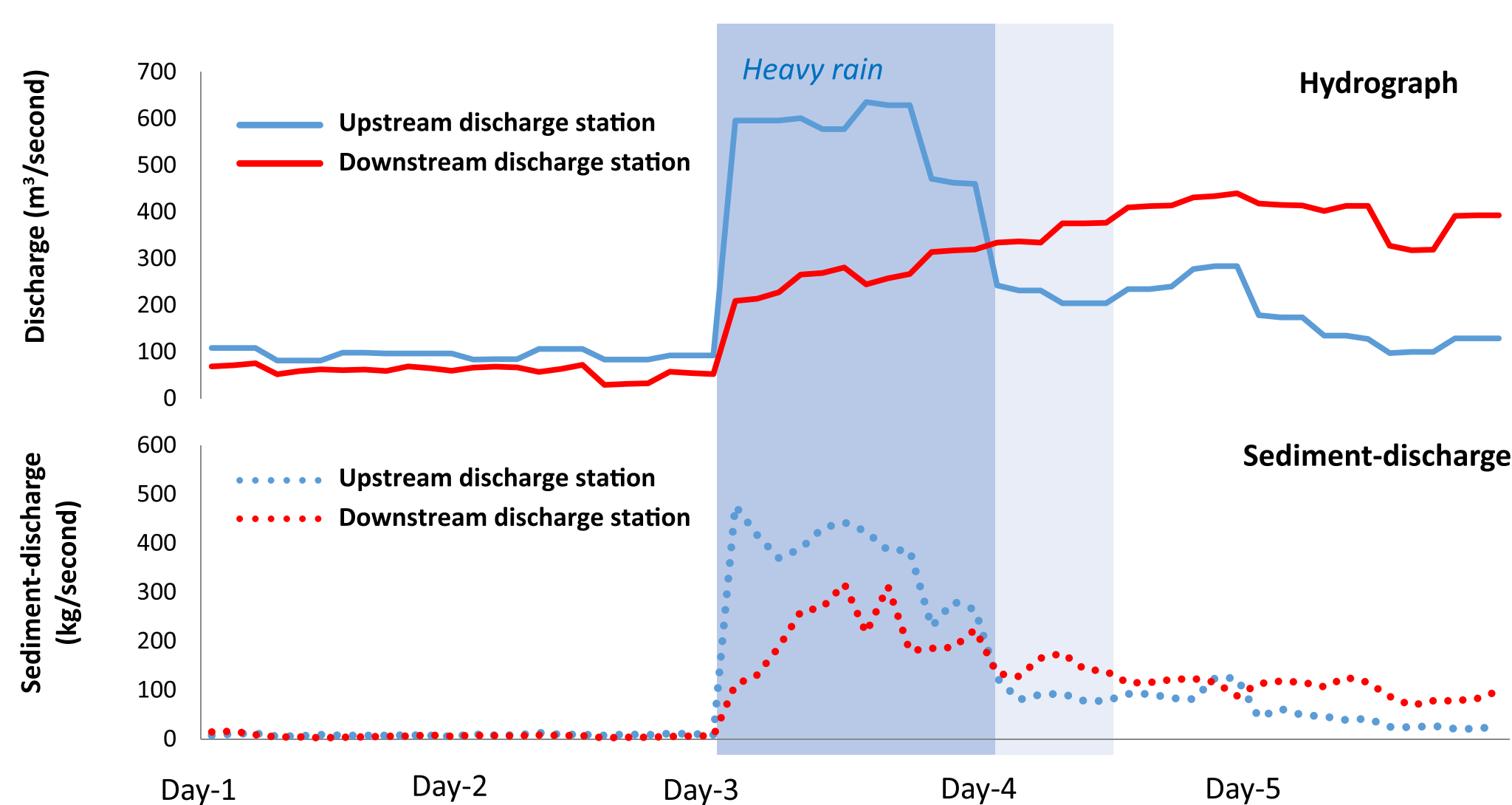


- Training at community level focuses on measurement techniques, enabling community to participate in future watershed restoration activities managed by the local government by providing climate and hydrological data
- Training at government level focuses on training of trainers emphasizing on monitoring techniques, data analysis and evaluation. The participants are staffs that can potentially be the trigger in promoting collaborative watershed management through public – people – and private partnership.



Example of Hydrological Research Output

Graphic below is one of the outputs of hydrological research based on the participatory climate and hydrology data collection in the upstream, midstream and downstream area.



Recommendation for the next watershed management plan based on the output of hydrological research:

- ✓ **Upstream:** increase tree cover to reduce the surface runoff and flow velocity; and to increase the infiltration rate during rainy season
- ✓ **Midstream:** rehabilitation of riparian area to reduce the riverbank collapse by building infrastructure or natural vegetation
- ✓ **Downstream:** improving the drainage systems
- ✓ **Increase the collaboration** between upstream, midstream and downstream stakeholders

Key Message From This Research

- ✓ It is time to consider the local community as potential partner for government in managing the watershed, by increasing their knowledge and awareness on watershed function
- ✓ A clear role among the stakeholder will make effective and efficient collaboration for better watershed management

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