

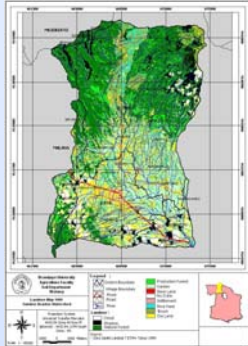
RAPID HYDROLOGICAL APPRAISAL (RHA) Implementation at Sumber Brantas Watershed, Malang



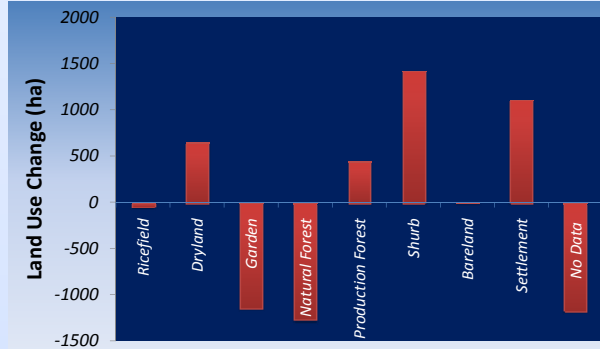
Widianto, Didik Suprayogo, Sudarto, Iva Dewi Lestariningsih
University of Brawijaya, Faculty of Agriculture, Malang, Indonesia



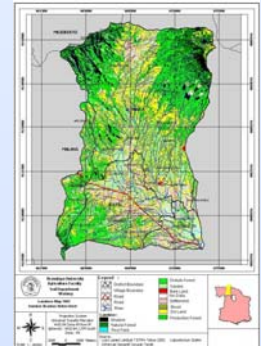
1989



Land Use Change in Sumber Brantas Watershed (Landsat Imagery of 1989 and 2002)



2002



Land degradation indicated by high rate of gully erosion

PROBLEMS



Water quantity and quality degradation



Conflict of Interest on water using

Stakeholders Meeting



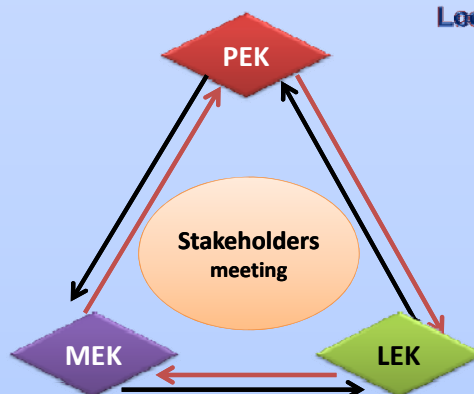
In general, the concern and perception on watershed hydrology among the three groups of stakeholders (LEK, PEK, and MEK) in Sumber Brantas Watershed tends to be similar

Policy Makers Issues and Perceptions (PEK)

Issues	Caused
Threat for the recharge area	Settlement and industry development
Flash floods	Deforestation in Perhutani forests
Soil Erosion	Steep slopes, miss management, and landuse change
Landslides	Deforestation
Water availability	Deforestation
Landuse conflict and forest function	Conflict of interest
Water polution	Livestock, domestic source, tourism, and and intensive agricultural practice

Local Community Issues and Perceptions (LEK)

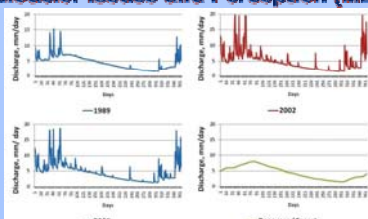
Issues	Caused
Flash floods	Deforestation in Perhutani forests
Soil Erosion	Steep slopes and miss management
Landslides	Deforestation
Water availability	Deforestation
Landuse conflict and forest function	Conflict of interest
Water polution	Livestock and domestic source



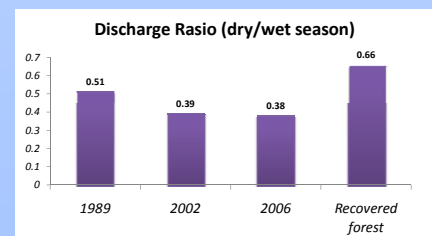
Future Agenda and Development

1. Shared responsibility for maintaining Tahura R. Soeryo Forest and its biodiversity
2. Development of reward mechanism to local community to support community action plan
3. Good will enhancing payment to the local community to improve their livelihood
4. Incentives to community groups to rehabilitate land and forest, avoid degradation and reducing threats to watershed functions

Modeler Issues and Perception (MEK)



Modeler Issues and Perception (MEK)



Fluctuation of river discharge due to the difference of land use proportion (represented by land use condition in each year)

Unbalance watershed hydrology shown by the lower discharge ratio of the 2002 and 2006 land use proportion