

Community Vulnerability and Adaptation to the Dynamic of Water Resources in Rejoso Watershed, East Java, Indonesia

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Introduction

- Rejoso watershed supplies clean water for Pasuruan district and its surrounding areas.
- The land cover/land uses experienced changes led to
- hydrological issues owing to population growth and economic pressure.



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Objectives

We explored and identified (1) water sources uses and issues, (2) causes and consequences, (3) adaption and mitigation strategies of household and communities, based on local knowledge; taking into account gender perception.

Methodology

Focus Group Discussion (FGD) to collect the information using CaSAVA (Capacity Strengthening Approach for Vulnerability Assessment) framework.

Conclusions

- Female group express more diverse water sources and issues, causes and consequences, and adaption and mitigation strategies than male group.
- The communities are mostly vulnerable to reduce of water debit.
- Natural cause (rainfall) and human induced cause (less awareness, human activities) are the main causes of the water issues.
- Main consequences are reduced agriculture production and crop failure.
- The most common responses are planting trees, repairing infrastructure and using other source of water.
- These data can be the basis information for developing recommendations on activities and strategies to solve the issues and consequences.



Results & Discussion

Water sources

Female groups expressed more diverse sources of water than male groups.

Dominant sources of water during normal climatic period



No significant differences on use of water were found during dry climatic period, except in certain areas that are highly dependent on rainwater for agriculture uses. For domestic uses, some area receive water subsidies.

Causes and consequences of water issues

Female group express more divers' causes and consequences of water issues than male group.

- The communities are mostly vulnerable to the decrease of water debit and flood, and also to the turbid water, erosion and landslide. Some main consequences are reduced agriculture production and crop failure.
- The issues are caused by natural cause (rainfall, sloping land), human induced cause (awareness, human activities), and the unavailability of infrastructure.

Water issues

- Downstream and midstream: the first two of water issues is water quantity: flood and reduced water debit (male and female groups' perceptions).
- Upstream area, the first two of water sources issues is reduced water debit and landslide (male perception), turbid water and landslide (female perception)



Rank of water source issues based on female and male groups' perceptions

Adaptation and mitigation strategies

Female group express more diverse adaptation and mitigation strategies than male group. The adaptation and mitigation strategies have had 50%-100% success rate. The most common responses are planting trees and repairing infrastructure (mitigation strategies) and borrowing money and using other source of water (adaptation strategies).



Causes: green and yellow = natural causes, blue = human induces causes, orange = infrastructure. Issues: black = water quality, grey = water quality, peach = soil. Bigger size of shape indicate higher rank of issues or main causes and consequences.





Issues/consequences: black = water quality issue, grey = water quality issue, peach = soil issue, purple = consequences. Responses: green = mitigation responses, pink = adaptation responses. Bigger size of shape indicate higher rank of issues or common responses.