

**DEVELOPMENT OF SMALL SCALE PROGRAM
ON BETTER POTATOES CULTIVATION
UNDER LAND AND WATER CONSERVATION PRINCIPLES ¹**

by:

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ABSTRACT

A small scale program of farmer participation was studied to promote better potatoes cultivation. The program was carried out on fertile soil of the upper watershed area of Mrica dam, located at the mountainous area of Dieng Wonosobo Regency, Central Java. Potatoes is intensively cultivated by the farmer in this area. It gives the implication on land degradation in this area and increasing sedimentation on the river. The aim of this study was directed to promote better potatoes cultivation to improve their life with applying land and water conservation principles .

The program was applied on the cultivation land and on the river system. On the cultivation land, the program was focused on erosion control through application of plastic mulch and land contour cultivation. On the river system the program was directed to built, namely sediment control structures which has functioning for sedimentation trap and water harvesting on the river.

The result shows that the farmers give positive respond on the program. The program give also significantly affect, on one side is decreasing erosion on the land and sedimentation on the river. On the other side, it gives also improving water availability for irrigating land potatoes cultivation. These effects has implication on improving better life of the farmer through increasing potatoes productivity under well manage soil and water management.

Keyword: small scale program, better potatoes cultivation, farmer participation, land and water conservation measures

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1. INTRODUCTION

A small scale program of farmer participation was studied to promote better potatoes cultivation. The program was carried out on fertile soil of the upper watershed area of Mrica dam, (1017.42 km²), located at the mountainous area of Dieng Wonosobo Regency, Central Java. Potatoes is intensively cultivated by the farmer in this area. It gives the implication on land degradation in this area and increasing sedimentation on the river.

The location is typically mountainous area with fertile soil. More than 75% area of watershed is applied for cultivating intensively for potatoes by the farmers without good land and water conservation principles, event in highly slope area. This intensive cultivation gives affect on land degradation in the form of increasing erosion on the land and sedimentation in the river (**Fig.1**).

The aim of this study was directed to promote better potatoes cultivation to improve their life with applying land and water conservation principles .

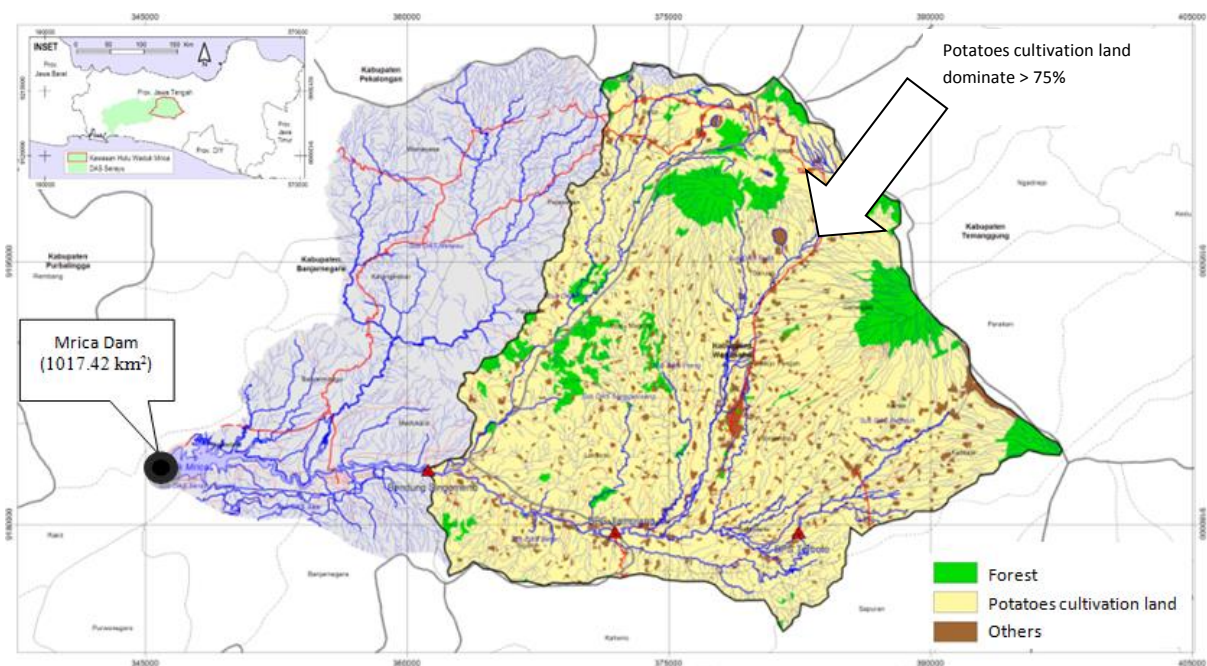


Fig. 1. Location of Study

2. METHOD

Development of small scale program was applied to promote better potatoes cultivation to improve their life with applying land and water conservation principles through demonstration plot. The small scale program which contain soil and water conservation measures was initiated through dissemination of the program to the farmers and the selected villages.

Farmer participation was involved in the demonstration plot. The demonstration was focused on the mountainous land cultivation and river system. PRA (Participatory Rural Appraisal) and RRA (Rapid Rural Appraisal) were used to indentify social and economic aspect of the farmers.

In one side, the farmers were placed as the implementator of the program and beneficiaries as well. The other side, the government sq. the Serayu Opak River Basin Office (BBWS-SO) were placed as financial and material support. The role of Gajah Mada University team involved in planning, designing, coaching and supervision of the program. The Patak Banteng village was chosen as the demonstration plot (**Fig.2**).

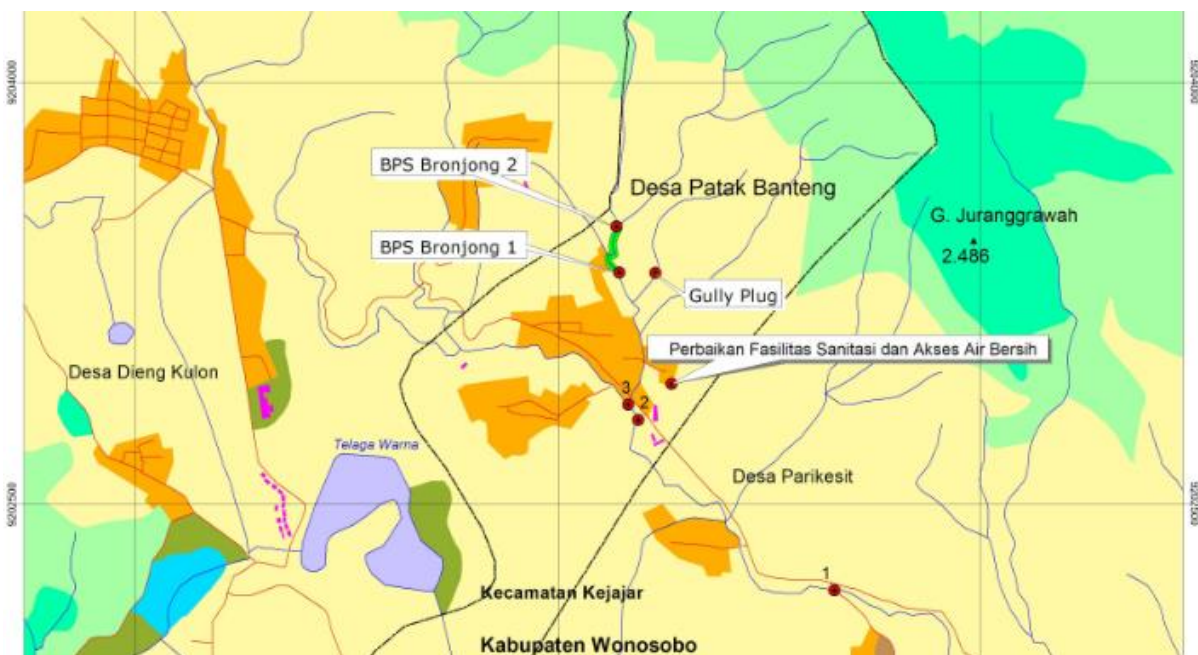


Fig. 2. Patak Banteng Village used as Location for Small Scale Program through Demonstration Plot

3. RESULT AND DISCUSSION

Demonstration plot on the cultivation land was focused on erosion control through application of plastic mulch and land contour cultivation covering about 10 ha. (**Fig 3**).



Fig. 3. a). Farmer participation meeting b). Hand over of forest plant to the farmer
c.) Plastic land mulch d.) Land terracing

On the river system, the demonstration was directed to built two sediment control structures which has functioning for sedimentation trap and water harvesting on the river, one gully plug, rehabilitation sanitation and drinking water infrastruktur, and regreening along river bank (**Fig 4**).

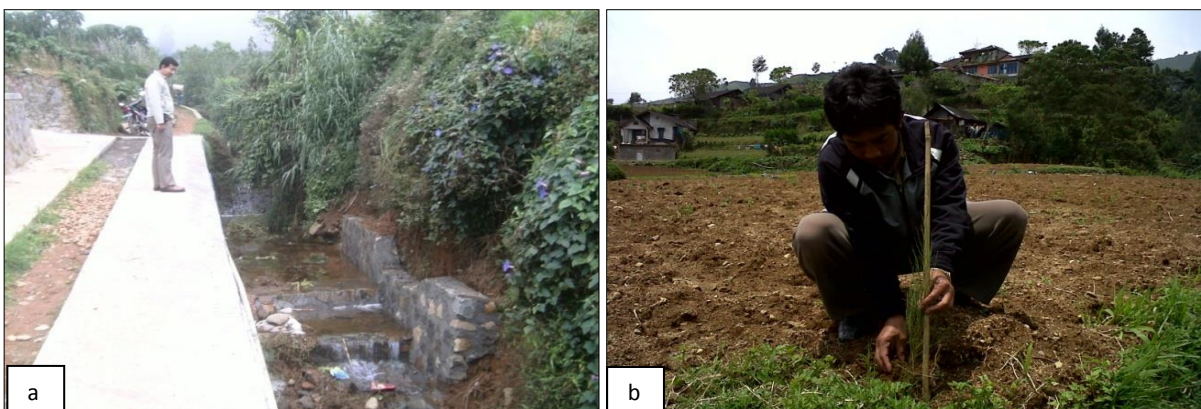


Fig. 4. Soil and Water Conservation Measures on The River:
a). Gully plug, b). Regreening on river bank

The program give also significantly affect, on one side is decreasing erosion on the land and sedimentation on the river. On the other side, it gives also improving water availability for irrigating land potatoes cultivation (**Fig. 5**). Construction of sediment control structures is possible to add an area of approximately 2 ha of potatoes cultivation land using a pump.



Fig. 5. a). Suspended load on the river, b)). Sediment control structures

These effects has implication on improving better life of the farmer through increasing potatoes productivity under well manage soil and water management (**Fig. 6**).

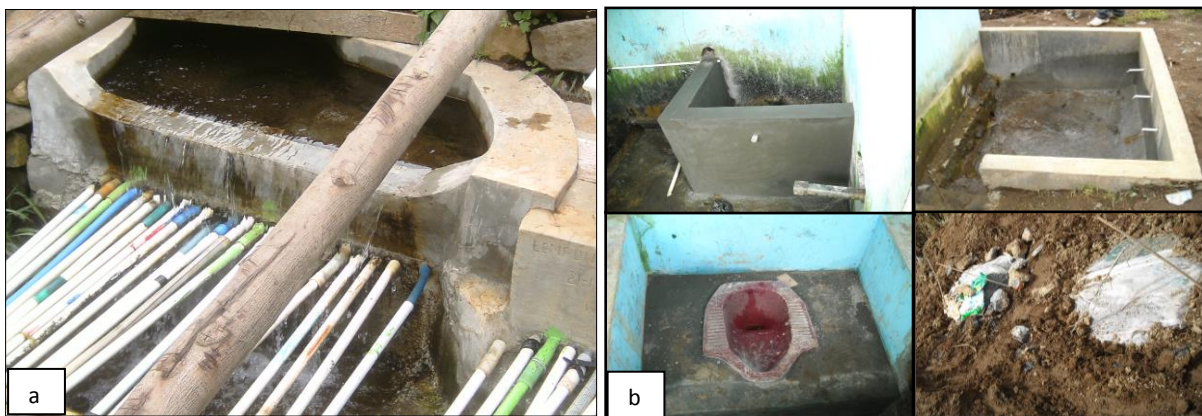


Fig. 6. a). Water divider structures, b). Improved sanitation facilities

The result shows that the farmers give positive respond on the program.
(data hasil PRA, RRA)

4. CONCLUSION

The result shows that the farmers give positive respond on the program. The program give also significantly affect, on one side is decreasing erosion on the land and sedimentation on the river. On the other side, it gives also improving water availability for irrigating land potatoes cultivation. These effects has implication on improving better life of the farmer through increasing potatoes productivity under well manage soil and water management.

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