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PRIORITY DEVELOPMENT OF SMALLDAM IN WONOGIRI REGENCY

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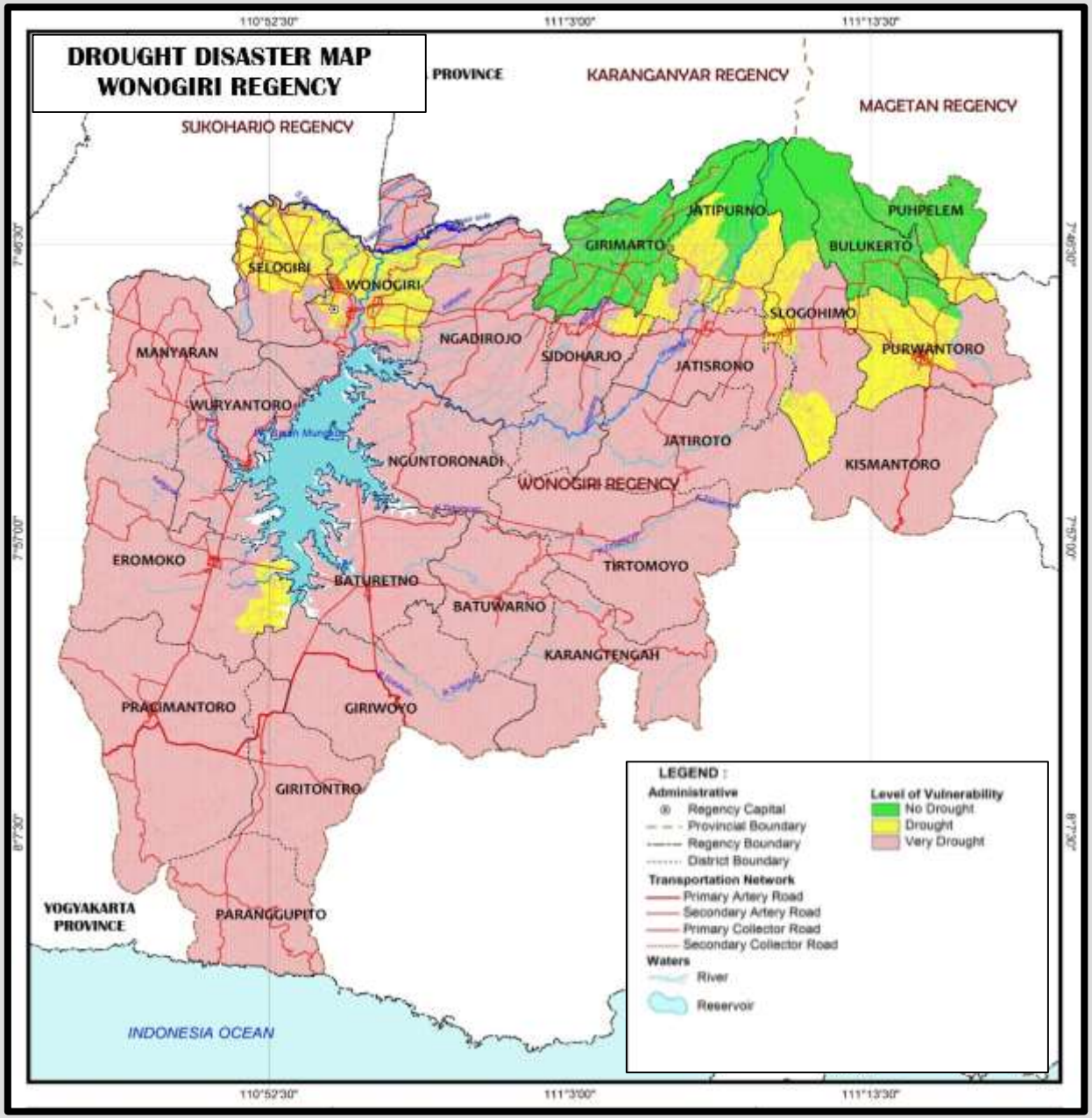
INTRODUCTION



Wonogiri regency experienced drought and water shortage especially during dry season. The construction of smalldams is the way to solve this. To support the policy of Central Java Province Government, to build 1000 smalldams, The BBWS Bengawan Solo conducted a study to identified the potential sites of smalldams within the Bengawan Solo catchment area, as well as to priorities the 5 most potential before detail design of construction.

PURPOSE AND DIRECTION

The purpose of this study is to prepare of decision-making tools to determine development priorities of Smalldam of potential using multi-criteria analysis with the scoring method.

Objectives :

- Determine the location of potential smalldams with a land-based status.
- Give weight to each criterion based on importance level.
- Determine development priorities of potential's smalldams.

METHOD AND MATERIALS

The method to be used in this study is a multi-criteria model, since there are various aspects that must be compared from each potential smalldam to obtain the five top priority smalldam.

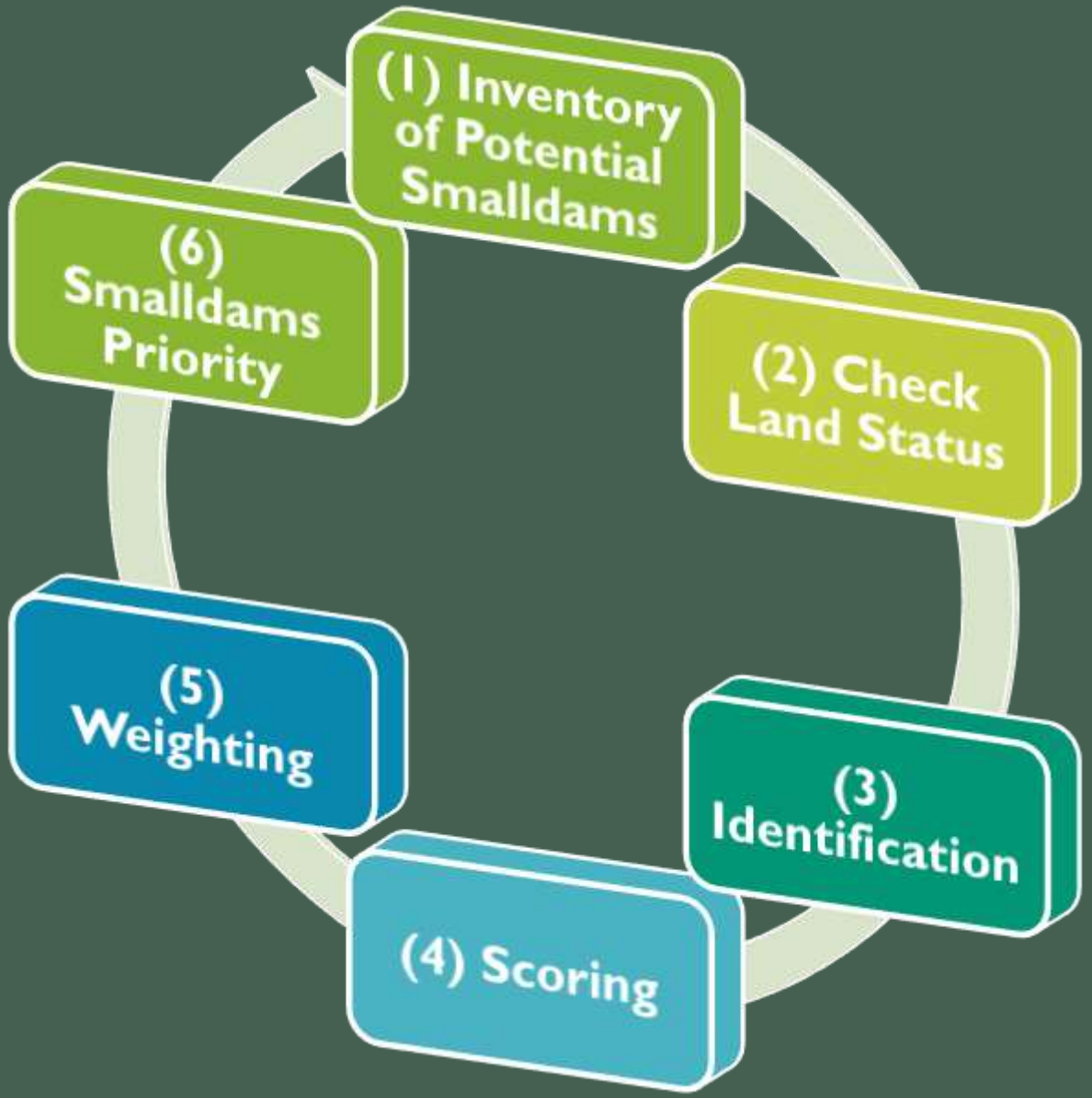
Methodology of study or research implementation carried out in accordance with the objectives of the study and for the results in accordance with the purpose of research. The study cover three steps:

1). Identification of the potential smalldams sites;

2). Collec basic information data, and

3). Analysis to determine the prioritization

ANALYSIS


(1) Inventory of Potential Smalldams
(2) Check Land Status
(3) Identification
(4) Scoring
(5) Weighting
(6) Smalldams Priority

(1) Inventory of Potential Smalldams

Inventory of the Potential Smalldams is the first step to determine priority smalldams. From the inventory result will be known all of the location who has potential to become Smalldam. The result not only from the analysis but also gather the information from the other stakeholder who will built and exploit the smalldams. There are many potential smalldams that found at the location of the study about 39 pieces.

(2) Check Land Status

From the inventory result, the data of land ownership of the location plan of smalldams and the access roads shall be clear. If the land is owned by the village treasury, then the smalldams will be removed from the list of priority smalldams. Due to, it will be difficulties in the implementation. So the land that will be used is the land of the society. According to land ownership status, the number of potential smalldams decreased from **39** to **13** pieces.

Number	Potential of Smalldams
1	Smalldam of Bangkan
2	Smalldam of Bowong
3	Smalldam of Seruni
4	Smalldam of Waru
5	Smalldam of Wungu
6	Smalldam of Glimbung
7	Smalldam of Gompyong
8	Smalldam of Weru
9	Smalldam of Baksari
10	Smalldam of Gunung Bromo
11	Smalldam of Jalakan
12	Smalldam of Pogog
13	Smalldam of Simpar

(3) Identification

Based on the data from the inventory, the potential smalldams should be noted the technical data from each of them. There are some technical data that have to be noted from each smalldams potential: the depth of the smalldams, area of the inundation, volume of the storage.

Not only technical data, but also non technical data should be collect.

(4) Scoring

To define criteria, first step is through a review of relevant literature. From initial identification of these criteria, then interviews with experts, ie people which is considered to be a true understanding of the problem discussed, directly feeling the effects of a problems and those who have interests to the problem.

In this study, interviews were conducted with the experts (universities), practitioners from technical institutions related. The results of this discussion are then carried out the formulation of the criteria that will subsequently be used in the making of questionnaires.

Questionnaire is designed in such a way that the answer choice will be generate score based on level its importance to the substance of the question questionnaires using Likert scale ie:

- Score 3 to declare a very level important
- Score 2 to state an important level
- Score 1 to declare the level sufficient important
- Score 0 to declare no level important

There are some scoring of the some aspect:

Number	Subcriteria of The Geology Structure	Scoring
1	Can not be repaired	0
2	need repaired	1
3	Fault, need no repaired	2
4	No fault	3

Number	Subcriteria of the Drought	Skoring
1	None drought	0
2	Slight drought	1
3	Drought	2
4	Heavy drought	3

Number	Subcriteria of the Soil Type	Skoring
1	High permeability	0
2	Middle permeability	1
3	small permeability	2
4	Waterproof	3

Number	Subcriteria of the Landslide symtoms	Skoring
1	Avalanche	0
2	High Avalanche Potential	1
3	Small Avalanche Potential	2
4	No landslide	3

Number	Subcriteria of the High Embankment	Scoring
1	>15.00	0
2	10,01 up to 15,00	1
3	5.01 up to 10.00	2
4	< 5.00	3

Number	Subcriteria of the Storage Volume	Scoring
1	>500	0
2	<100	1
3	100 up to 300	2
4	300 up to 500	3

Number	Subcriteria of the Number of Beneficiaries	Scoring
1	< 100 family head	0
2	100 – 499 family head	1
3	500 – 999 family head	2
4	> 1000 family head	3

(5) Weighting

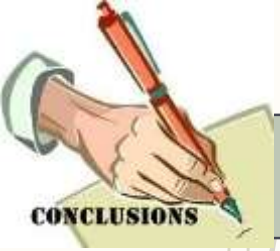
After the scores obtained from each subcriteria, the next is weighted. This weighting uses Weighted Average method because it is easy in application and can be adjusted with influential aspect. Here's the weight of each subcriteria based on expert said.

Aspect	Criteria	Subcriteria	Weight
Technical (40 %)	Geology	Geology structure	3
		Soil type	5
		Landslide Symthoms	2
		Site Material Supply	5
	Hydrology	water balance	3
		Erosion / Sedimentation	3
		Existing Smalldam Related	4
	Topography	V-A Ratio	5
		Height Embankment	5
		Volume Embankment	5
Non technical (60 %)	Drought Regional	Drought Classification	30
	Economic	Length of Embankment	2
		Acces Distance	2
		Beneficiaries	2
		Accesibility	2
		Function	2
	Social and Environment	Community Support	10
		Resettlement	5
		Land Status	5

(6) Smalldams Priority

According to the check land status result, there are 13 smalldams that will be analyse be come top five priority. By the process from the methodology, there are the result for smalldam's

Number	Potential of Smalldams	Total Score	Ranking
1	Smalldam of Bangkan	0,493	6
2	Smalldam of Bowong	0,492	7
3	Smalldam of Seruni	0,479	9
4	Smalldam of Waru	0,543	5
5	Smalldam of Wungu	0,556	3
6	Smalldam of Glimbung	0,563	1
7	Smalldam of Gompyong	0,556	2
8	Smalldam of Weru	0,553	4
9	Smalldam of Baksari	0,469	12
10	Smalldam of Gunung Bromo	0,473	10
11	Smalldam of Jalakan	0,486	8
12	Smalldam of Pogog	0,423	13
13	Smalldam of Simpar	0,476	11



CONCLUSIONS

Prioritization analyzes use the simplest method for communities and various stakeholders to easily follow the analytical process. Multi Criteria Method is the easiest method to understand. The Conclusion from this study are:

- Weights for each criterion based on their importance here is the influence of the subjectivity of the decision maker or by the expert.
- Priority of the development of smalldams is determined based on the total rank / score score multiplied by the weight of each criteria.
- From several locations that have been analyzed, here are the five smalldams that will be priority to be build:
  - Smalldam of Glimbung
  - Smalldam of Gompyong
  - Smalldam of Wungu
  - Smalldam of Weru
  - Smalldam of Waru


Thank
you