Proceedings of International Conference : Problem, Solution and Development of Coastal and Delta Areas
Semarang, Indonesia – September 26th, 2017
Paper No.C-47

Integrated Implementation Conservation In DAS Serang (Study Case Institutional Group Of Land And Water Conservation Sampetan Village Subdistrict Ampel, District Boyolali)

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Abstract **-** Serang Watershed is a region dominated by steep slopes and high rainfall. This causes the region to have a high erosion potential. Water resources conservation activities in the upper watershed of Serang Watershed have been started with the construction of a number of conservation infrastructure. However, until now these efforts have not been assessed properly. This is because the existing institutional system is not functioning properly.
This research discusses the strategy of conserving water resources activities in the study sites by Soil and Water Conservation Groups so that it is expected to overcome erosion problems at the research sites so as to improve the welfare of the community in the Serang watershed, especially Sampetan Village. Research method using questioner, interview, field survey, literature study, and SWOT analysis. Based from the analysis it can be concluded that by using the slovin formula, the number of respondents used as sample is 96 people from the population of 127 people consisting of various stakeholders including Village Government, Local Government, KKTA, and Community Leaders. Using SWOT method is analyzed external and internal factors of forestry and institutional resources of Sampetan Land and Water Conservation Group.

Keywords : *Erotion, Conservation, Institutional, SWOT.*

1. Introduction

Conservation of water resources is one of the pillars of water resources management as stated in PUPR Regulation no. 10 / PRT / M / 2015. The conservation of water resources is aimed at maintaining the existence and sustainability of the state, nature, and function of water resources in order to always be available in quantity and quality sufficient to meet the needs of living things, both present and future.

Serang Watershed is one of the river basins in the Jratunseluna River Basin. This region is dominated by steep slopes and high rainfall. This causes the region to have a high potential for erosion, if not properly managed. The Serang watershed is included in the priority level I watershed. The flow density of Serang watershed 3.89 is a good category causing some areas in Sedadi and Sidorejo to be prone to drought. This condition is worsened by land cover in Serang watershed (67,126.78 Ha) and plantation (2,057.76 Ha), mooring (6,058.29 Ha), settlement (2,077.96 Ha), forest (13,281.60 Ha), water body / river / lake (1,024.66 Ha) (BBWS Pemali Juana, 2015). The land cover map of Serang watershed can be shown in Figure 1.

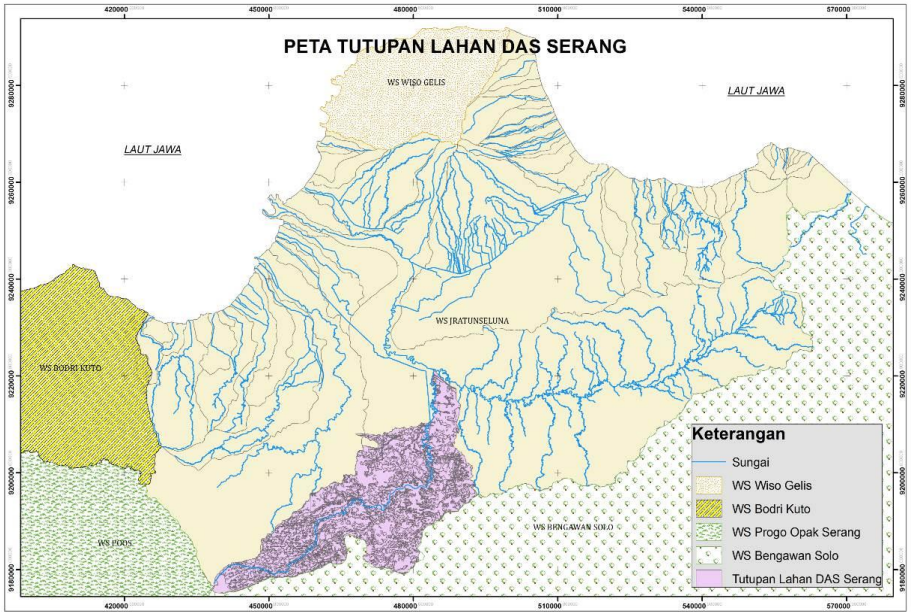

Figure 1. Map of Serang Watershed Area

Based on the data mentioned that the division of critical land area in the Serang watershed is a critical area of 13,157.67 Ha, 3,457.66 Ha is critical land, 28,434.22 Ha of critical potential land, 2,343.42 Ha of land is very critical, and 44,243.56 Ha is uncritical land (BBWS Pemali Juana, 2015). Critical Field Map of DAS Serang can be seen in Figure 2.

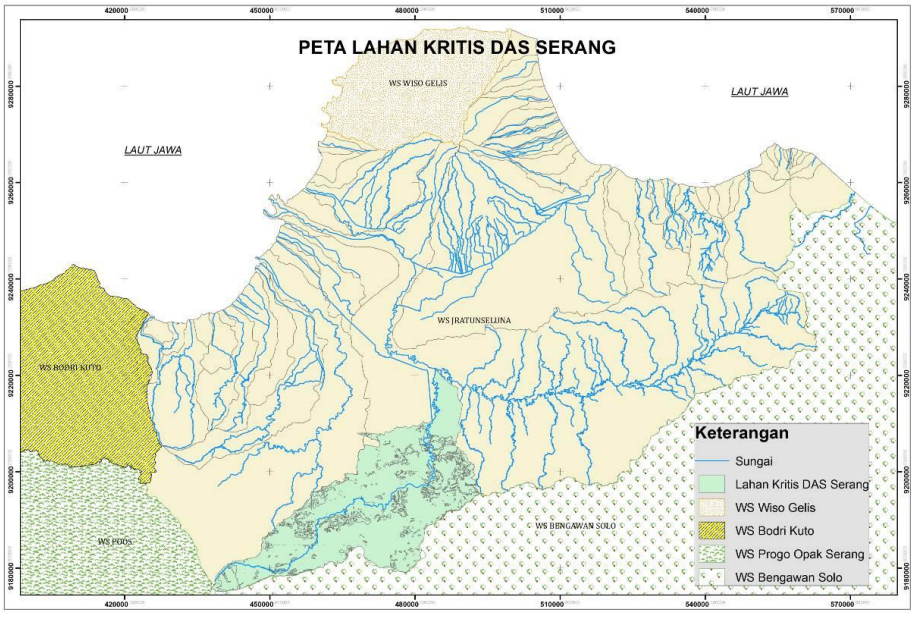

Figure 2. Landuse Map of Serang Watershed

Research to determine the implementation of institutional aspects of conservation in the watershed Serang, especially upstream watershed areas need to be done so that can formulated the completion and appropriate and comprehensive handling. In this study

will be studied about the need for community institutional support to support the success of natural resources conservation activities focused on Sampetan Village, Ampel District, Boyolali District. Sampetan Village location map is shown in Figure 1.3.

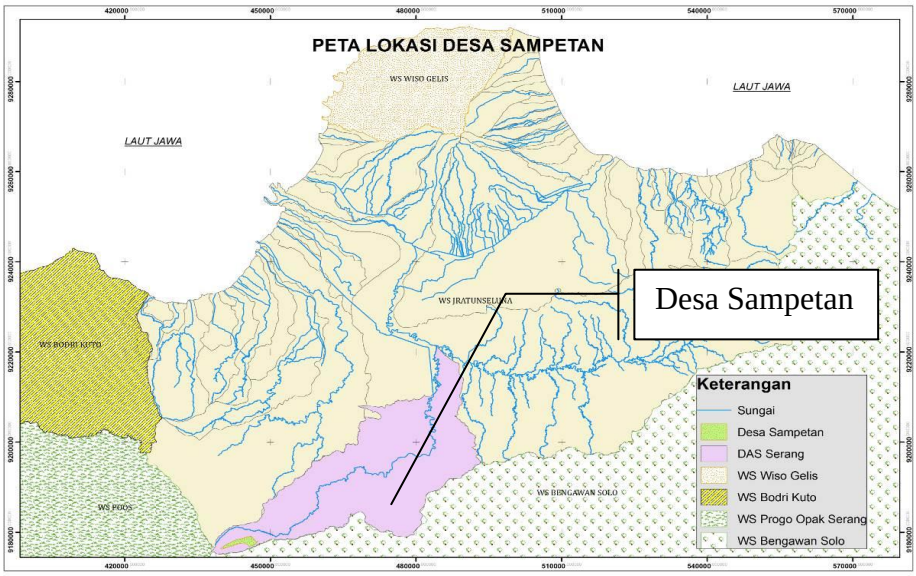

Figure 3. Locatin Map of The Research

2. Methodology

A. Data Collection

In the study, data collection techniques are important factors for the success of the study. This is related to how to collect data, who is the source, and what tools are used.

The data collection techniques used are questionnaires, interviews, and documents study.

1. Questionnaires
   Questionnaire is a data collection technique that is done by giving a set of questions or statements to other people who respondents to be answered. Although it looks easy, data collection techniques through questionnaires are quite difficult to do if the respondents are large enough and spread in various areas. Some things to consider in the preparation of questionnaires by Uma Sekaran (in Sugiyono, 2007: 163) related to the principle of writing a questionnaire, physical appearance.
2. Interviews
   Interview is a technique of data collection conducted through face to face and direct question and answer between data collector and researcher to source or data source.
   Interviews on large sample studies are usually only done as a preliminary study because it is not possible to use interviews on 1000 respondents, whereas in small sample interview techniques can be applied as data collection techniques (generally qualitative research).
3. Documents Study
   Documentation study is a technique of collecting secondary data that is not addressed directly to the subject of research. Thorough documents can be of various kinds, not only official documents, may be diaries, personal letters, reports, meeting minutes, case notes in social work, and other documents.

B. Population and Samples

Primary data required in this study include in the form of data on existing institutional conditions. This data is obtained by using questionnaire method. Before the questionnaire is distributed, the respondent will be selected first to be selected. The selection of respondents adjusted with stakeholders related to existing issues such as BBWS Pemali Juana, 30 members of Land and Water Conservation Groups, District Government Boyolali District as many as 20 people, Sampetan Village Government 10 people, and Community Leaders 57 people.

C. Sampling Techinques

Respondents can be determined by various methods, but because the strategy analysis included in the qualitative analysis then the method specified can be purposive random sampling that the sampling is done only on the basis of consideration of the researcher who considers the desired elements already exist in the sample members taken at random.

Based on Slovin (Sevilla et al., 1960: 182), the sample size can be determined by the formula:

$$s = \frac{N}{1 + Ne^2}$$

Information :

s = Total of Sample
N = Total of Population
e = Error Tolerance

The number of population to be taken for the sample / respondent is 127 people, the population is divided into four groups consisting of :

1. Local Goverment = 20 peoples
2. Village Goverment = 20 peoples
3. Soil and Water Conservation Groups = 30 peoples
4. Community Leaders = 57 peoples

Using the slovin formula as described above, with a fault tolerance of 5% is:

$s = N / (1 + N e^2) = 127 / (1 + 127 \times 0{,}05^2) = 96{,}394 \approx 96$

After the calculation using the formula slovin with the number of population determinedn as many as 127 people obtained the number of samples of 96 samples with the following details :

1. Local Goverment = 20/127 *96 = 15,11
2. Village Goverment = 20/127 *96 = 15,11
3. Soil and Water Conservation Groups = 30/127 *96 = 23,00
4. Community Leaders = 57/127 *96 = 43,08

Σ = 96,00

Thus, the required sample size is 96 people.

Source : Analysis

D. Qualitative Descriptive Data Analysis Using SWOT

SWOT Analysis is a strategic planning method used to evaluate strengths, weaknesses, opportunities, and threats in a project or a business speculation. The four factors that form the acronym SWOT (strength, weakness, opportunity, and threat).

SWOT Components:

a) *Strength* (S), is the situation or condition that is the strength of the organization or program at this time.
b) *Weakness* (W), is a situation or condition that is a weakness of the organization or program at this time.
c) *Opportunity* (O), is a situation or condition that is an opportunity outside the organization and provides opportunities for the organization to grow in the future.
d) *Threat* (T), is a situation that is a threat to organizations that come from outside the organization and can threaten the existence of the organization in the future.

Table 1. *Strength* of Serang Watershed in Sampetan Village

No	Strength
1	The existence of the Ministry of Forestry as a provider of sustainable forest management
2	Forestry legislation that supports the management of forest natural resources
3	Land use arrangement and spatial pattern according to characteristic and land use.
4	Forest resources are available
5	applying advanced technology to support forest management and development
6	Community participation related to forest management
7	Human forest resources available
8	Public information disclosure in the forestry sector gives people the opportunity to participate in managing forest resources

Source : Analysis

Table 2. *Weakness* of Serang Watershed in Sampetan Village

No	Weakness
1	Less optimal forest utilization
2	Conservation area management has not been well run
3	Watershed rehabilitation is not handled properly
4	Forest protection not implemented in accordance with existing legislation
5	Science and Technology has not been aligned with forest management
6	Giving role to society that less fairness
7	Limited facilities supporting forestry development implementation
8	Giving access to forest policies and information is low

Source: Analysis

Table 3. *Opportunity* of Serang Watershed in Sampetan Village

No	Opportunity
1	Potential utilization of large forest resources
2	State commitment in organizing forestry
3	Great international support for sustainable forest management
4	The existence of forestry partners as well as potential community participation potential in supporting forestry development through its involvement in planning, implementation and supervision
5	High dependence on forest resources
6	Market demand for high forest product yields.
7	Investment opportunities for forest resources are high
8	Creation of an efficient and sustainable management unit, ecologically, economically and socially

No	Opportunity
9	Forests play an important role in the hydrological cycle, water system, preventing erosion, maintaining soil fertility, the main elements of carbon sequestration and are the main reserves of plasma nuftah

Source: Analysis

Table 4. *Threat* of Serang Watershed in Sampetan Village

No	Threat
1	Timber theft and illegal timber trade are still happening.
2	Forest land slump that has not been able to overcome well.
3	Unconfined forest areas
4	Poor people in and around the forest
5	Low employment in the field of forestry
6	Land requirements are very high
7	Increasing the need for forestry business access
8	Investment policy in forestry business development is less attractive.
9	The extent of damaged forest and high rate of forest destruction

Source: Analysis

After all the influential factors are obtained then the next step is data processing. Data processing influencing factors is done by tabulation method. Factors obtained are displayed using tables so they are easy to read and understand. After tabulation of data is done then the next stage is the description of factors to obtain a picture of the relationship between factors. The answer of the questionnaire is converted to a certain value to get the totality assessments that can be seen in the SWOT quadrant that can be used as a handle in the analysis activities Strategy preparation in the context of achieving the goal is an effort to harness the strengths and opportunities that exist in order to eliminate the weaknesses and threats encountered. Preparation of strategies to achieve goals can use the SWOT matrix below :

Table 5. SWOT Matrix

Internal **Eksternal**	***Strength (S)***	***Weakness (W)***
Opportunity (O)	**Strategy S-O** list of strengths to take advantage of opportunities	**Strategy W-O** List to minimize weaknesses by taking advantage of the opportunities
Threats (T)	**Strategy S-T** List of powers to avoid threats	**Strategy W-T** List to minimize weaknesses by avoiding threats

Source : Rangkuti, 2006

From each of the internal factors compared with the external factors to obtain what strategy will be done in solving the problem of the two factors are compared. Based on the SWOT matrix, there will be at least four strategies to be used for the achievement of the objectives. However, from the strategies derived from the SWOT matrix, it can be sorting out to become the priority strategy that will be used for the achievement of the objectives.

There are 8 steps in compiling SWOT matrix, that is:

1. Write down the crucial strengths of the KKTA.
2. Write down the crucial internal weaknesses of the KKTA.
3. Write down the crucial KKTA external opportunities.
4. Write down the KKTA's external threats that determine.
5. Matching internal strength with external opportunities and recording the resultant SO strategy in the right cell.
6. Match internal weaknesses with external opportunities and record the resultant WO strategies in the right cells.
7. Match internal strength with external threats and record the resultant ST strategy in the right cell.
8. Match internal weaknesses with external threats and record the resultant WT strategies in the right cells.

Source : Rangkuti, 200

Figure 4. SWOT Diagram

E. Institutionalization of Sampetan River Basin Management

In order to strengthen the institutional and decision-making mechanisms to oversee the implementation up to the evaluation of the RKTD Document (Village Soil and Water Conservation Plan), four four institutions are developed as follows:

Table 6. Duties and Functions of Each Village Management Institution of Sampetan Village

No	Institution Name	Jobs And Functions
1	Mubes Kondes	strategic decision making related to integrated efforts to address erosion through soil and water conservation
2	KKTA	RKTD escort from time to time in collaboration with the Village Implementation Committee
3	MPD	▪ Facilitating KKTA in coordinating with related Stakeholders ▪ Mobilize community participation and empowerment, and procurement of labor in conservation activities ▪ Facilitate the preparation, translation of technical design drawings into the work. ▪ Preparing the necessary facilities and infrastructure for the completion of work in RKTD

4	MPS	Implementing the field of conservation activities in an integrated manner

Source : Dokumen RKTD Desa Sampetan, 2012

F. Implementation of Research

The implementation of the research includes several activities and stages schematically shown in Figure 5.

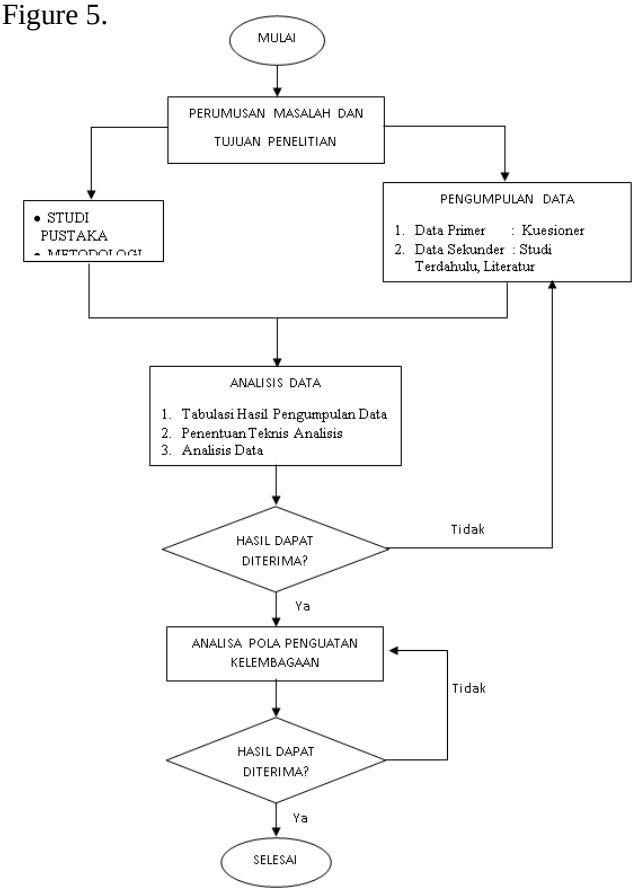

Figure 5. Method of Research Flowchart

3. Recomendation

Recommendations from the study that can be submitted are efforts to improve institutional performance of KKTA and to conserve the land technically and vegetatively so that the condition of Sampetan Village land can be maintained its sustainability.

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