



**COMMUNITY BASED FOREST MANAGEMENT : A PREVENTIVE TO  
DROUGHT DISASTER  
(CASE IN WONOSADI FOREST AREA, GUNUNGKIDUL, YOGYAKARTA)**

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Abstract

Most parts of the Gunungkidul Regency, Yogyakarta Province, Indonesia have a high vulnerability to drought. This is mainly due to the physical configuration of Gunungkidul area which is classified as karst areas, especially in the southern part and structural-hilly area in the northern part. Karst topography has caused hydrological system in most part of Gunungkidul area. It is strongly influenced by the secondary porosity which caused water flows into the underground stream system and cause dry conditions at the surface area. Meanwhile, structural hilly topography also contributes to the onset of drought because barren soil conditions in this region led to vast of forest as water catchment area is limited. One solution that can be applied to solve the drought is by doing the good management of forest area with participation of local community.

This study aims to determine the model of community-based forest management with a case study in the Wonosadi forest area in Beji Village, Ngawen Sub District, Gunungkidul and to assess the government support to community-based forest management in this area. Research model used is qualitative research so the data will be analyzed by using inductive-qualitative method. The data collection to determine the model of community-based forest management is done by doing in-depth interview with relevant stakeholder. Meanwhile, Comprehensive literature review was carried out to identify the government support to this kind of management.

The results shows that community-based forest management in Wonosadi forest area is influenced by the local wisdom which has been growing in this area for a long time. Local wisdom embodied in folklore that contains the message to conserve forest has encouraged the formation of a local organization which is responsible in forest conservation. The government's efforts in supporting the community-based forest management in Wonosadi forest area is done through the establishment of policies which is pro-conservation. This policy can be seen in the Gunungkidul Spatial Plan Years 2010-2030.

**Keywords :** Community, Forest, Management, Wonosadi

## **A. Introduction**

"Disaster struck again" was headline news we often hear and read in the mass media both electronic and print media in recent years. Various kinds of disasters such as tsunamis, earthquakes, volcanoes, landslides, floods, and drought, become the headlines on the front pages of newspapers and the main topics in various television news. The development of

media technology affect the movement of the information flow about the disaster that could attract the attention of millions of people in the world in a few hours. What is raised by the media makes us feel that the world has become increasingly unsafe place to live.

Disasters can occur in all countries in the world, but the number of events and the impact on developing countries is greater than the developed countries. Developing countries and poor countries tend to be in areas with a concentration of volcanic activity, earthquakes, tsunamis, landslides and floods (Alcántara-Ayala, 2002).

One of the developing countries that have a high level of vulnerability to disasters is Indonesian. Types of disasters in Indonesia are mostly classified as hydro-meteorological disasters. Nationally, 77 percent of disasters are hydro-meteorological disasters, ie floods, tornados, droughts and landslides. From 1,598 disasters that occurred in 2011, recorded that 77 percent of those are hydro-meteorological disasters. As in disaster management in general, in the hydro-meteorological disaster management, the principle of mitigation and disaster risk reduction must be applied. However, specifically for drought disaster, disaster management actions that have been implemented more responsive and less emphasis on preventive aspects. It can be seen from management of drought disaster, which every year hit most areas of Gunungkidul Regency, Province of Yogyakarta, Indonesia.

Most parts of Gunungkidul Regency has a high level of vulnerability to drought. This is mainly due to the physical configuration of the district which is classified as karst areas especially in the southern part and structural hills in the northern part. Karst topography causes the hydrology system is strongly influenced by secondary porosity which causes water to flow into the underground system and result in dry conditions at the surface. Meanwhile, structural hilly topography is also contributing to the occurrence of drought because the land is in barren conditions so the wide of catchment area become limited.

In coping with drought which almost every year hit areas such as Sub District Ngawen, efforts that often done still responsive in the form of dropping water, whereas preventive measures is still limited. Although limited, it turns out that preventive efforts in drought disaster management has been developing for a long time in Sub District Ngawen. Although most of the districts included in the hilly topography Baturagung, drought does not occur evenly. This is due in Sub District Ngawen there are an indigenous forest which its sustainability is maintained so that the forest area can become water catchment areas. The forest is named Wonosadi Forest and is located in Duren Hamlet, Beji Village. Wonosadi Forest conservation efforts originated from an indigenous form of folklore that developed in the community for generations to date. The story has been raising public

awareness to make efforts towards forest conservation and in turn encourage the formation of a local institution that is responsible for the conservation efforts. This is why people around the region free from the threat of drought. Therefore, this study aims to:

1. Identify local knowledge and institutional formation conservation forest areas as a preventative measure against Wonosadi drought.
2. Assessing the support of the government so that local institutional knowledge and this can be maintained.

## **B. Methodology**

Research model used is qualitative research so the data will be analyzed by using inductive-qualitative method. The data collection to determine the model of community-based forest management is done by doing in-depth interview with the chief of Bala Dewi (institution for Wonosadi forest conservation at the village level). Meanwhile, Comprehensive literature review was carried out to identify the government support to this kind of management. This is done by referring to government program which support the conservation effort of the indigenous forest.

## **C. Local Wisdom : A Theory**

Local wisdom is a value created, developed and maintained from the community itself and for its ability to survive and become a way of life the community. Local knowledge covered in the various mechanisms and ways to behave, behave, and act as outlined in a social order. According to Ite (2002) there are six dimensions of local knowledge, ie local knowledge, local culture, local skills, local resources, local decision-making mechanisms and the solidarity of the group. The sixth dimension is the local intelligences who transformed into creativity, work and initiative, so that people can act independently in different social condition which always change.

Local wisdom is the attitude, outlook, and the ability of a community in managing the environment (spiritual and physical) that provide durability and ability to grow for the community, (Saini, 2005). Meanwhile, Soemarwoto (1982) defines local wisdom as knowledge that is able to confront the conditions of an environment. It has a broad meaning, because it covers all equipment / objects, methods, means and organization created by the human element which based on the skills and knowledge they have. Local wisdom preference more towards knowledge (knowledge), not just science (science) because there are aspects of "experience" and "skill".

Patrick Barron (2003) said that local wisdom is determined by three factors, namely economic and structural, psychological and cultural as well as political and social institutions. Dimensions of local wisdom itself include local technology, local culture, local resources, local skills, local processes, and solidarity. The social dimension can produce energy which is the power of the community to address and solve the problems.

Principles of local wisdom which are respected and practiced by indigenous communities include :

1. Human dependence on nature that requires harmony in relationships where the human is part of nature itself that the balance must be maintained.
2. Indigenous territorial mastery over certain general or collective known as indigenous territories so that the obligation to maintain and manage and secure it from external exploitation must be done together. From various case examples show that the integrity of the system of ownership can prevent excessive exploitation of the local environment.
3. The existence of social order, the system knowledge possessed by indigenous institutions that have ability to solve the problems in the utilization of natural resources.
4. Zoning system and indigenous law enforcement to secure the common property resources from excessive exploitation either by themselves or by people outside the community.
5. The existence of socio-cultural and religious ties with the local environment such as logging ban in the area contained springs, logging or forest conversion ban in a mountainous area and a ban on arbitrarily use of natural resources.

These principles are evolutionarily evolved as an accumulation of findings related indigenous experiences for hundreds of years. Therefore these principles are multidimensional and integrated also in the system of religion, social structure, laws and institutions of the indigenous community.

#### **D. Local Wisdoms and Establishment of Institution For Wonosadi Forest Conservation As Preventive Measures Against Drought Disaster**

##### **1. Local Wisdoms As A Foundation of Wonosadi Forest Conservation Efforts**

Gunungkidul is the only region in the province of Yogyakarta that most of its territory consist of karst region. Ford and Williams (1992) define karst as a field with hydrology and landforms characteristic caused by a combination of soluble rocks and has developed secondary porosity. As a result of the dissolution process (solutional / karstification), then formed a unique hydrological system. Karst hydrological system is

strongly influenced by secondary porosity (groundwater flow through the dissolution cracks) that causes water to flow into the underground system and cause dry conditions at ground level. This has led Gunungkidul become a region which has high susceptibility to drought. Besides occur in karst area which is cover almost all southern part of Gunungkidul, drought also happen in northern part of Gunungkidul. This is due to physical configuration of the region which is structural hilly area with minimum water catchment area so that the land is in barren condition.

Although drought is always a threat for most residents in Gunungkidul especially in the dry season, villagers of Beji, District Ngawen did not experienced it. Although water discharge in dry season is reduced, the water is still flowing from local water sources. This is due to the existence of indigenous forest, named Wonosadi Forest which covering 25 hectare or as large as 51 football fields in the village of Beji. In the forest which cover of a hill, there are three springs that can fulfill the daily needs of water of the Beji community. Meanwhile, around the Wonosadi forest area, there are buffer zone which covering 35 hectares which can be used by surrounding community the damage of the core zone of Wonosadi Forest Area can be prevented.

Wonosadi forests are natural forests and ancestral heritage. All existing plants grow naturally and not planted by man. Wonosadi Forest sustainability always be maintained until today. This is due to the conservation efforts of community surrounding the forest. Conservation efforts can not be separated from the local wisdom in the form of folklore that evolved from generation to generation. The story is written as follows:

*In 1478 there was a war between the Kingdom of Demak with Majapahit (between Raden Patah and Brawijaya). In that war, Majapahit could be defeated by Demak. King Brawijaya V with his family and loyal soldiers then escaped to the south coast which eventually spread to the area of "Gunung Seribu" (Gunungkidul now). In history, this is known as "Majapahit dispersal". King Brawijaya commanded his followers to form groups and find suitable place to live.*

There is a group led by a woman named Rororesmi with her two children named Onggoloco and Gadingmas. Rororesmi was one of the concubines wives of Brawijaya V. The group separated by other groups, for months they westwards follow the supernatural instructions received.

At last they came to a large forest areas and dense which known as haunted forest. The forest stretches on hillsides which sloping to the south, namely Wonosandi Forest, which means forest which is full of secrets. Eventually the name was

changed to the "Wonosadi" forest until now. In the middle of the forest there are springs that flow all time. Then, efforts to open the forest as new settlement began. Like a puppet story " *Bima babat alas Wanamarta* ", there were many obstacles, especially from the ghost which led by a king in form of a fierce white tiger named Jin Gadungmelati. With supernatural powers possessed by the Onggoloco and Gadingmas, the king of ghost finally conquered. Gadungmelati willing to help the clearance of forest area, but requirement that he and his soldiers can stayed at the center springs in the forest forever. This request was granted by reciprocity that Gadungmelati with all his soldiers should not interfere the people who lives around the forest and they are required to help preserve the forest. That's why the people assumes that Wonosadi forest is sacred forest until now.

Based on folklore that developed in the community living in Wonosadi forest areas, it can be seen that there are three testaments of ancestors which still being implemented by the communitiy until now. The third testaments include:

- a. Wonosadi forest must be maintained and preserved for the future prosperity of all the people. Any actions which can damage the forest is prohibited and whoever damage the forest will get karma.
- b. If there is people sick, there is a cure in this forest so the forest can be called as "The Forest Wonosudo" which means forest which store the medicines in it.
- c. Annual ceremony to gather together (reunion) shall be held each year in order to maintain the relationship between the people.

## **2. Establishment of Community Instition for Wonosadi Forest Conservation**

Between the years 1966-1997 in the management of Community Forests Wonosadi, a modern institution was not yet formed. At the time, the community had agreed to preserve the forest together, but it didn't well structured. Community spirit to preserve Wonosadi forest area based on two main things which are the ancestors testaments which must be implemented continuously and the fact that the existence of a sustainable Wonosadi forest has made the springs around forest area can be used continuously throughout the year so that people could avoid drought disaster, especially in the dry season.

Until 1997, the coordination of activities held by the village chief and the elder person. However, in 1997, based on the testaments of the ancestors (Ki Onggoloco) which have to be implemented continuously, then the people around Wonosadi forest formed an institution for Wonosadi forest conservation. This begins with the formation

of forest rangers “Ngudi Lestari”, which is followed by Farm Forestry Group “Sumber Rejeki” and the last, the committee/manager at village level called “Bala Dewi”. All of those have different role and task. Forest rangers have a duty to protect the forests from direct disruption such as illegal logging efforts. Farm forestry groups acts as a forum of aspirations and as a medium of learning together related with forest management, while Bala Dewi as committee at the village level has a role as a determinant of policy and networking with outside parties.

The establishment of institution for Wonosadi Forest conservation efforts can categorized as mitigation measure to prevent drought disaster. This is due to the existence of sustained Wonosadi forest make the three springs which became water sources for the people also preserved. Those spring is able to provide clean water to six sub villages located in Beji village. Even, lately other villages around the Beji village also utilize water from those springs.

The success key of establishment of institution for Wonosadi forest conservation include :

- a. Local wisdom in the form of three testaments of Ki Onggoloco testaments is still being implemented by the people who live in Beji village
- b. High public awareness to organize in an organization in order to preserve the Wonosadi forest area.

## **E. Governmental Support**

In the development of Wonosadi forest management, there are two major intervention of the government in the form of policies, include:

1. Starting from the existence of large-scale logging that had made Forest Wonosadi became "bald" in 1965, the government began to think of ways to prevent people from cutting down trees in the Wonosadi forest, because at that time government realized that the community would certainly require wood. The thinking led to the release of idea to transfer state-owned land to the community in 1977. The community is permitted to cut timber on the condition that they have to plant trees in this region or in other words, the people cutting down trees in the outside of Wonosadi core area. 25 hectares of forest as the core area has considered as conservation forest by the community, while the forest area which surrounded the conservation area, called buffer zone. Buffer area is also called "oro-oro" which means as area which is given by government as a tribute preservation efforts of the community.

2. In 2011, to preserve Wonosadi forests and the management, Gunungkidul Government through the Regional Regulation No. 6 year 2011 concerning Spatial Planning of Gunungkidul District Year 2010-2030 determined that Wonosadi Forests are nature reserves. It is listed in Article 31 letter a section 1 letter which stated that a nature reserve covers an area of Wonosadi Indigenous Forests in Beji Village, Ngawen covering area of approximately 42 hectares.

## **F. Conclusion**

1. Local wisdom in the form of Ki Onggoloco's testaments to conserve Wonosadi forests continuously became a foundation in the establishment of institution for forest conservation. In the end, it supports Wonosadi forest preservation so Beji village can be spared from the drought.
2. Government's efforts in supporting the development of local wisdom and institution for Wonosadi Forest conservation is through the establishment of policies that supports the effort of forest conservation.

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