

# PEMANFAATAN HUJAN BERBASIS RUMAH TANGGA UNTUK MENGATASI BAHAYA KEKERINGAN DI KABUPATEN GUNUNGGIDUL YOGYAKARTA

W i n a r n o  
08/276017/PTK/05194

Telah dipertahankan di depan Dewan Penguji  
Pada tanggal 21 Juni 2010

Pembimbing Utama  
**Prof. Dr. Ir. Sunjoto, Dip.HE., DEA.**

Pembimbing Pendamping  
**Ir. Budi Kamulyan, M.Eng.**

Anggota Dewan Penguji Lain  
**Ir. Joko Sujono, M. Eng., Ph.D.**

## ABSTRACT

An extreme event of lack of water that is usually defined as drought, occurred more often in Gunungkidul Regency especially in dry season. Fresh water availability is the major problem in Gunungkidul Regency. The people use rainfall water and other water resource e.g. river, ponds, spring and sinkhole to fulfill their water need. However, there is a problem during dry season. The rainfall intensity is very low and the water resource is going to be dry.

The objectives of the research are to study rain water potency in order to fulfill domestic water need, to determine the effective dimension of rain water reservoir (Penampung Air Hujan-PAH), and to find the alternative water resource in order to cope with a lack of water during dry season. Secondary and primary data were employed in this research. Secondary data includes daily rainfall data, population data, and water resources data. Sampling method by using questionnaire was used to gain primary data. It includes roof area, household members, and household water need in dry and rainy season. Microsoft Excel Program was used to process and to analyze the rainfall data. It is applied in order to analyze rainfall potency. Cross tabulation methodology was used to analyze the questionnaire. The aims of this methodology are to identify roof area potency and water need per capita during dry and rainy season. The selection of water resource alternative is intended to cope with the lack of household water resource during dry season.

The average yearly rainfall in Gunungkidul Regency ranges from 1,275 mm/ year to 2,456 mm/year. Household rainfall water potency in Baturagung Physiography, Wonosari Basin, and Karst Sewu Mountain ranges from 66,963 l/year to 113,307 l/year, 70,759 l/year to 107,875 l/year, and 63,808 l/year to 90,693 l/year respectively. Meanwhile, based on the questionnaire analysis, the amount of water consumption per capita in Baturagung Physiography, Wonosari Basin, Karst Sewu Mountain during rainy season is 77.9 l/capita/day, 67.2 l/capita/day, and 57.5 l/capita/day respectively. Whereas, the amount of water consumption per capita during dry season is 52.8 l/capita/day, 59.9 l/capita/day, and 45.5 l/capita/day for Baturagung Physiography, Wonosari Basin, Karst Sewu Mountain respectively. Therefore, Baturagung Physiography, Wonosari Basin, and Karst Sewu Mountain require rainwater reservoir ranging from 12 m<sup>3</sup> to 37 m<sup>3</sup>, 18 m<sup>3</sup> to 37 m<sup>3</sup> and 9 m<sup>3</sup> to 32 m<sup>3</sup> respectively. The amount of household rain water potency in a part of villages in Gunungkidul Regency is less than the average yearly water demand. The deficit of household water demand in Baturagung Physiography could be managed by increasing the area of house roof, making digging well (depend on the water resource potency and natural condition), and by using river water for domestic use. Whereas, making digging well and widening house roof could be applied in Wonosari Basin, and Karst Sewu Mountainous area respectively.

**Key words:** *drought hazard, rainfall and household*