

**RESEARCH NOTE ON THE SOCIAL AND ECONOMIC  
LIFE OF VILLAGE PEOPLE IN CENTRAL JAVA  
- A Case Study of Two Villages  
in Yogyakarta Special Region -**

by  
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**ABSTRACT**

*This is a tentative research note of the field-work which was conducted under the title of "Research Note on the Social and Economic Life of the Village People in Central Java" in two villages in Bantul Regency, Yogyakarta Special Region for the period of one year September 1989 to March 1990.*

*This research aims at finding the Javanese attributes of the social structure of changing village community and social and economic life of the village people. In general the spread effects of economic development and the process of social change in the rural areas are different between the village communities which are near from the cities or distant. To accomplish the research purpose more efficiently, the research study was carried out in the two villages in Bantul Regency where is one of the typical Javanese and wet rice areas.*

*But, in this note, objectives and methods of the research, general condition of two hamlets, composition of the households, occupations of the households' heads and farm households by owner ship status are covered. These results of the household survey in the two research sites indicate some emerging trends that the effects of economic development is stronger in the village within easy commuting distance to Yogyakarta City and that the attributes of the village people directed to money economy are also stronger there.*

**INTRODUCTION**

**Objectives of the Study**

The research aimed at finding the Javanese attributes of the structure of changing village community and the social and economic life of the village people.

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Many researchers on contemporary rural Java have marveled that the Javanese small-holder agricultural sector has had the enormous capacity to absorb the increasing population of rural Java within its economy. Many scholars, therefore, have developed the speculations which account for the seemingly infinite capacity of rural Java for adapting the rural economy to increasing population pressure.

One of the most well known speculations on the adaptations to population pressure in the rural areas has been developed by Geertz (1963). According to his viewpoint of the ecological dynamics of wet rice cultivation, the characteristics of wet rice cultivation provide opportunities for attaining higher levels of productivity through increased labor inputs. Wet rice cultivation, therefore, has been able to absorb almost the whole of the increasing population into its labor force without a serious fall of productivity. Geertz, as well known, proposed to call this self-defeating process a process of "agricultural involution".

This theory, I think, stresses too much the attributes of ecological or economic aspects, besides treats of the productive side rather than the consumption (or distributive) side of the situation in rural Java (Collier W.L., 1981). But in general, the economic aspects of human behavior are interdependent on its social aspects. Therefore, this adaptative response as a process of "agricultural involution" has been related closely to, and in many cases, has been based on the social aspects of social structure of the village community. Some of these aspects are, for example, various kinds of mutual assistance and aid system in the household, kin groups and village community, the equalized inheritance system among children of both sexes, the relatively strong kinship relations among relatives, and the village people's behaviors which have been supported by the traditional Javanese value system.

Every Javanese usually has many associations which serve governmental, economic, religious, educational and recreations interests (Koentjaraningrat, 1985). Through these associations activities, the village people have been directly or indirectly taught to ideal human virtues which are, for example, being obedient, keeping good relation with others, helping others as much as possible, sharing with neighbours, and the like. Besides school education, these associations have provided opportunities of social education for the village people.

The introduction of the new rice technology since the 1970s as well as the other national economic development policies on the social and economic life of the villagers is one of the policy measures to achieve self-sufficiency in production of rice as well as improve living standards of the village people. Since then the process of economic development in the rural areas has been remarkable with a change of the social and economic life of the village people.

In the sociological viewpoint on the structure of Javanese village community as described above, the former speculations like the involution theory are in need of revision as a framework for the structure of social change in rural Java. Therefore, how the adaptative response of the villagers as "agricultural involution" has been affected by the process of economic development is the field of investigation.

In this decade, there has been argued that the socio-economic polarization process has been proceeded because the introduction of the new rice technology

al changes (Collier *et al.*, 1982; Manning, 1988). This is also one the issues kept in mind.

Publication of fuller research results is in preparation, therefore the purpose of this preliminary report is to indicate briefly the outline of research method and to describe some of the general information on the villages, the composition of villagers households and their economic base. But arguments on rice farming, ownership of house and land, relation of landowner and tenant, household expenditure, inheritance system, mutual help system, kinsip network, educational problems and organizations in the villages will be presented elsewhere.

### Villages for the Research

In general the village community around the cities within commuting distance has changed remarkably. But the spread effects of economic development and the process of social change in the rural areas have been different between the village communities which are near from the cities or distant. Therefore, to accomplish the research purpose more efficiently, the research study was carried out in the two hamlets in Bantul Regency (Kabupaten), Yogyakarta Special Region (Daerah Istimewa Yogyakarta) where is one of the typical Javanese areas and most of the village people are mainly engaged in the agricultural sector.

The two research sites, Hamlet (Dusun) of Piring and Bandung, are both located in the wet rice areas in Bantul Regency (Figure 1). Piring, located about 25 km south of Yogyakarta city, is one of 18 hamlets in Murtigading Village (Kelurahan) in Sanden Subdistrict (Kecamatan), while Bandung, located about 7 km south of Yogyakarta city, is also on of 16 hamlets in Pendowohardjo Village in Sewon Subdistrict. The closest local town (15 km north of Piring and 3 km south of Bandung) is Bantul Town where is the seat of the regency government.

There is another reason for the selection of the two research sites this time. As a member of the Japanese research team composed of the members of the Sociological Society of Japan, the reporter conducted the joint research study in the same two hamlets for two weeks in 1984, and got some data on the hamlets and the life of the village people there. But the research was not long enough to obtain accurate details on the villagers there because of the limited period for the study. Therefore the research was conducted in the same research sites. On the other hand, it is also due to the study plan to investigate social changes of the village communities for five years.

### METHOD OF THE RESEARCH

One of the frequent mistakes made by foreign researchers is the adoption of a framework of rural categories on their theme which has not yet actualized comprehensively in the research area. If they depend on it, they are likely to overlook realities by attempting to fit the village people and their activities into hypothetical structures that are foreign to the actual circumstances. It is, therefore, of utmost importance that the researcher has first-hand experience in the research area before trying to apply to framework of any sort.

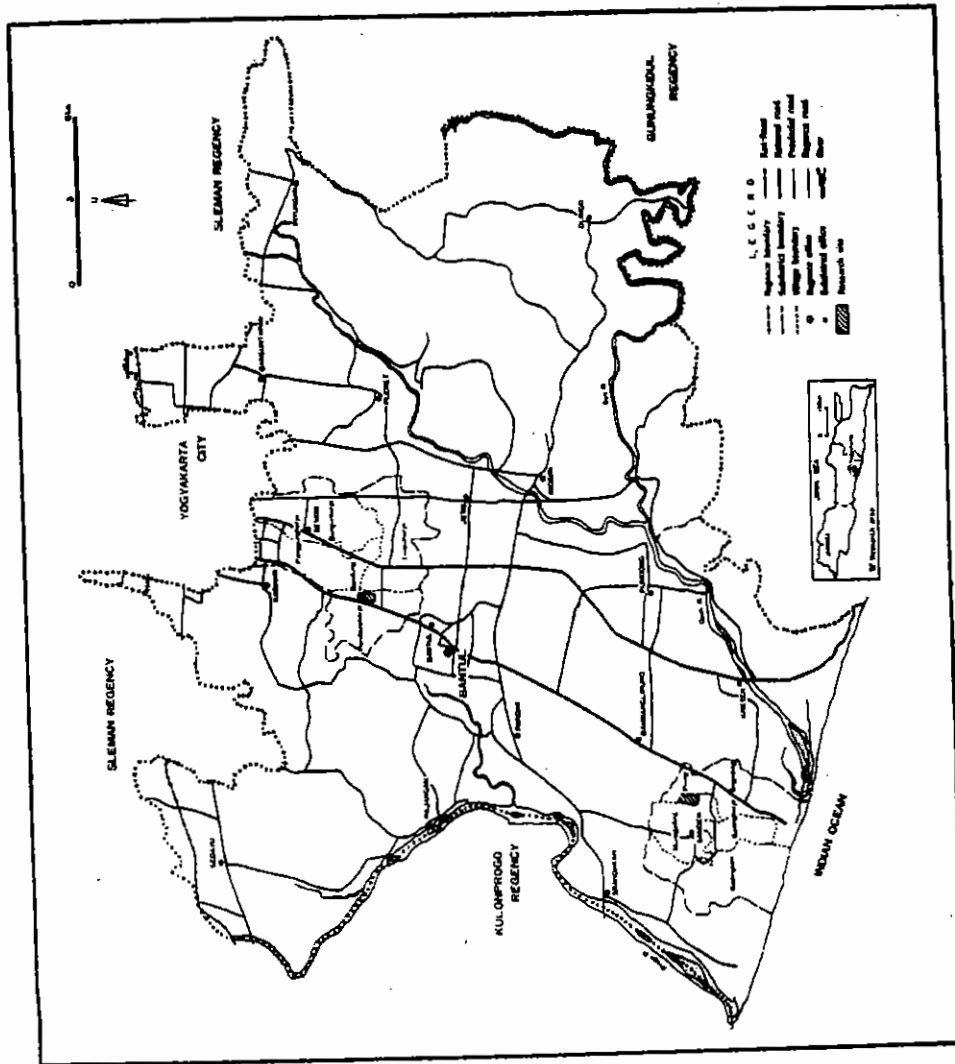


Figure 1. Bantul Regency

This research was carried out in two phases from the standpoint described above.

### Household Survey

In order to facilitate to cover most of the village people, their life and their activities in the research sites, this phase of the research was carried out with a structured and standardized questionnaire. The respondents of the research in each hamlet are, in principle, all of the heads of the households. The household survey was conducted by the reporter and four interviews who stayed at the sites from the mid of September to the end of October 1989.

The questionnaire is divided into nine parts:

1. Composition of the household: basic profile of the household member, and etc.
2. Children of the respondents who don't live with them: basic profile, place of residence, remittance to/from the respondents, and etc.
3. Household income and expenditure for the past one year: who earns how much income from what sources, consumption pattern and the amount, partial charge of the role for managing the household economy among the household member, and etc.
4. House and land: space and materials of the house, who owns many house, garden/compound (*pekarangan*), rice field (*sawah*), land tenancy, and etc.
5. Production from wet rice fields, another farming and garden/compound: pattern of the wet rice field use, pattern of employment, application of factors of production, costs of production and yields, pattern of selling, perspective for future farming and etc.
6. Inheritance: pattern of inheritance, from whom, how much and when the property/the land owned was inheritance, and etc.
7. Education: home discipline training for the respondents children, educational background of the household member, living environment, TV/radio programs interested in, and etc.
8. Kinship network and mutual aid system among the relatives (*sanak kadang* = Javanese term): extent of kinship network, activities among the relatives, pattern of mutual assistance and aid, and etc.
9. Social life in the hamlet: attendance to many kind of group activities organized in the hamlet, graves of the family, places of the residence lived with/apart their parents since the couple of the respondent married, desired level of children's marriage, and etc.

### Participant-observation

This phase of the research was conducted in each hamlet in which the reporter stayed at the villager's house (the house of the former head of hamlet in Piring and the present head of hamlet Bandung) from the end of October 1989 to the beginning of January 1990.

The reporter interviewed many keypersons and leaders in the hamlets and observed the villager's life. Some households and villagers were selected and researched for case studies. By means of this approach, the reporter could obtain accurate details on the activities of many associations and organizations, the process of farmwork, the process of religious, funeral and wedding ceremonies, the villagers' life in the household, routines in the hamlet and so on.

Moreover, the researcher made the educational investigation on three elementary schools to which the villagers' children attended with a view to inquire into a condition of education in them, such as a number of school children, class and teachers, educational facilities, budget and others.

## HAMLET (DUSUN) PIRING AND BANDUNG : SOME FEATURES

### General Condition of The Hamlets

Dusun Piring and Bandung are both located in Kabupaten Bantul which is regarded as one of the leading wet rice producing areas in Java. In general, land is fertile with plentiful supply of water, and volcanic nature of the soil from mount Merapi.

### Dusun Piring

Dusun Piring is one of 18 hamlets in Kelurahan Murtigading in Kecamatan Sanden. In the Dutch colonial period the boundary of dusun Piring was included in Desa Piring, an old natural village, which was ruled by some Bekel who were the lowest agents of the feudal lords under the king. When Bekel system was abolished by the local administrative reform in 1921 (Selosoemardjan and T. Mahoney, 1962), Kelurahan Srihardono was formed by combining Desa Piring and two neighboring desa. But, the local administrative system was reformed again by the national Independence, the current administrative boundary of Kelurahan Murtigading was formed by incorporating Kelurahan Srihardono and two neighboring Kelurahan and the part of one. Then, the boundary of Desa Piring was divided into Dusun (often called Dukuh before) IX and X at the time of the administrative reorganization. To be exact, therefore, the research site, Dusun Piring, is Dusun X of them. But Dusun X is called Dusun Piring or only Piring henceforth.

There are 87 households and the number of total population is 350 in Piring. The household survey was conducted on 85 households except two. The size of 18.4 hectares constitutes the population density to 1,902 persons per square kilometre, a little higher level, compared to the whole of Murtigading Village where the density was 1,884 in 1988 (Table 1). But, according to the statistics of the Murtigading Village as of 1988, Piring is a little smaller in the average size of population and area.

TABLE 1. POPULATION NUMBER, POPULATION DENSITY, HOUSEHOLD NUMBER AND AVERAGE HOUSEHOLD MEMBER PER HOUSEHOLD, 1988

	Area km <sup>2</sup>	Total Popu- lation	Density per km <sup>2</sup>	Total Household	Household mem- ber per a Household
Bantul	506.85	693,418	1,368	138,118	5.13
Sanden	23.16	31,537	1,362	6,201	5.09
Sewon	27.16	63,780	2,348	11,925	5.35
Murtigading	4.39	8,271	1,884	1,519	5.45
Pendowoharjo	6.98	15,038	2,154	2,699	5.57
Piring	0.18	350	1,944	87	4.02
Bandung	0.30	709	2,352	138	5.14

Source: Statistics of Each Local Government, 1988

\* : The Data of Research Period, 1989

It is located on a lowland plain between 15 m and 20 m above sea level, about 25 km south of Yogyakarta City. The regencial road from Yogyakarta City to Samas beach, a tourist resort, runs approximately 800 m east of Piring. In order to take a bus or minibus to go to Bantul Town or Yogyakarta City, the village people in Piring have walk to Dusun Celep in Srigading Village, the nearest marketplace, where the regional road runs. As takes an hour and a half from Piring to Yogyakarta City by bus, a few villagers commute to Yogyakarta City daily by motorcycle.

The main economic of the village people in Piring, therefore, are based on wet rice farming 25.8 percent of the whole area of the hamlet is wet rice field of which most is irrigated and there is no dry field within the area. They usually cultivate a wet rice plant two times and other crops (called *polowijo*) one time in a dry season in a year. And many women here are engaged in painting work of batik under contract with a batik wholesaler or a commission merchant. It is also necessary hamlets will be electrified by the end of 1990 under the national program.

### Dusun Bandung

Dusun Bandung is, on the other hand, one of 16 hamlets in Pendowoharjo Village in Sewon Subdistrict. It formed Desa Bandung Kulon as an independent natural village under Bekel system in the colonial period. When the Bekel system was abolished and five Kelurahan were formed within the area of Panji of sewon (a head of old Kecamatan) in 1921 (Selosoemardjan and T. Mahoney, 1962), Desa Bandung Kulon belonged to Kelurahan Bandung in company with five neighboring desa. When the current administrative boundary of Kelurahan Pendowoharjo was formed by consolidating Kelurahan Bandung and four neighboring Kelurahan in 1946 after Independence, Dusun (Dukuh) Bandung was organized on the boundary of Desa Bandung Kulon.

There are 141 households in Bandung. But, 23 households among them set up their own household apart from their parents or moved into this hamlet after the last research conducted in 1984. Therefore, 118 households except these 23 were investigated because of the comparison study for five years. According to the statistics of Dusun Bandung as of December 1988, population is 709 from 138 households. The land size of 30.1 hectares makes the population density to 2,352

persons per square kilometre which is higher than the average of Pendowoharjo Village (Table 1).

Bandung is placed on the northern part of the lowland zone in Bantul Regency, some 7 km south of Yogyakarta City. It is approximately 200 m distance east of the provincial road which is very crowded by the heavy stream of commuters into and away from Yogyakarta City by bus, minibus, motorcycle and bicycle in the morning and afternoon. As it is within commuting distance into Yogyakarta City, a lot of the village people commute there. Therefore, the proportion of the villagers engaged in non-agricultural activities is higher than in agricultural ones in spite of in wet rice area. Besides, there are some new inhabitants who moved recently into Bandung to travel to work in Yogyakarta City although they had no relatives here.

#### Composition of the Household

The household survey was conducted according to the following definition that a household consists of a person or group of persons who occupies a part of the whole building and generally eats together from one kitchen. The total number of the households investigated in detail for this survey is 85 in Piring and 118 in Bandung. Of course, most of the households have male heads. But, 17 households (20 percent) in Piring have female heads (separation 1, husband's work trip to Jakarta 1, loss of their husbands 15), and 13 female heads (11 percent) in Bandung (divorce 2, loss of their husbands 11).

There are 342 residents in 85 households in Piring and 540 residents in 118 households in Bandung. Therefore, the average number of persons per household is 4.02 in Piring and 4.58 in Bandung (Table 2). Piring households are smaller in size because of the higher ratio of single person households as described below.

TABLE 2. SIZE OF HOUSEHOLD

Size of Household	Piring		Bandung	
	Total	%	Total	%
1	9	10.6	3	2.5
2	14	16.5	19	16.1
3	12	14.1	14	11.9
4	17	20.0	18	15.3
5	13	15.3	27	22.9
6	11	12.9	23	19.5
7	6	7.0	6	5.1
8	1	1.2	7	5.9
9	1	1.2		
11	1	1.2		
14			1	0.8
<b>Total</b>	<b>85</b>	<b>100.0</b>	<b>118</b>	<b>100.0</b>

The households both in Piring and Bandung can be divided into five types  
 According to table 3

which shows the types of composition of households, the simple nuclear family type, in principle, consisting of only husband and wife and their unmarried children, is the most dominant one because that accounts for 58.8 percent in Piring and 67.7 percent in Bandung respectively.

TABLE 3. TYPE OF HOUSEHOLD

Type of Household	Piring		Bandung	
	Total	%	Total	%
Single person	10	11.8	3	2.5
Nuclear Family	50	58.8	79	67.0
Hu,Wi	11	12.9	14	11.9
Hu,Wi,Chi	34	40.0	59	50.0
Hu,Wi,Chi	5	5.9	6	5.1
Stem Family	15	17.7	29	24.6
Hu,Wi,Chi,Fa/Mo of Hu,(Gchi)	5	5.9	4	3.4
Hu,Wi,(Chi),So,So Wi,(Gchi)	6	7.1	10	8.5
Hu,Wi,Chi,Fa/Mo of Wi,(Gchi)			9	7.6
Hu,Wi,Da,(Da Hu),(Gchi)	4	4.7	6	5.1
Joint Family	3	3.5	2	1.7
Other Composition of Relatives	7	8.2	5	4.2
<b>Total</b>	<b>85</b>	<b>100.0</b>	<b>118</b>	<b>100.0</b>

The following type is the stem family type of which the proportion constitutes 17.7 percent in Piring and 24.6 percent in Bandung. This type of the household consists of two or more generations of which each is made up of one couple, namely husband and wife and/or one married child and/or his or her parents. In Piring, 11 households among 15 stem family type households consist of only patrilineal relatives, such as the husband's parents or his married son's couple. By contrast, in Bandung, 15 households among 26 stem family type households include only the matrilineal relatives, namely the wife's parents or her married daughter's couple. We can safely say that there seems to be no rule of residence to determine who should/must live with parents out of married sons and daughters. According to some villagers' explanation, stem family type households are preferable because someone has to live together before setting up their independent household.

And then, we notice that many households are on a later stage of nuclear family life cycle, especially in Piring. The number of the single person household is 10 in Piring (11.8 percent) and 3 in Bandung (2.5 percent). The age of all heads of these households except one is not less than 61 years old. Then, the age of 8 heads in Piring (9.4 percent) and 10 heads in Bandung (8.5 percent) of husband and wife households among nuclear family type households is also not less than 61 years old. Therefore, it can be said that 20.0 percent in Piring and 11.0 percent in Bandung out of the whole households is on a later stage of nuclear family life cycle. The

cause of little opportunity for economic activities in and around the hamlet except an agricultural sector. On the other hand, in Bandung, the proportion of younger people staying in the hamlet is higher than in Piring because Bandung is located within commuting distance of Yogyakarta City.

#### Occupation of The Head

Although no small people have more than one job in Java, primary occupations of the heads of the households in the research sites are shown in this chapter because the data of the household survey have not computerized yet. Both research sites are in the wet rice area, but there are some different characteristics between them.

As is shown in table 4, the ratio of the household heads over 61 years in Piring (32.9 percent) is higher than that in Bandung (24.6 percent). By contrast, the ratio of the household heads of under 40 years in Piring (17.7 percent) is lower than that in Bandung (31.3 percent). The average age of the heads of the households is, therefore, 55.2 years old in Piring and 51.7 years old in Bandung respectively.

TABLE 4. AGE OF HEAD OF HOUSEHOLD

Age Group	Piring		Bandung	
	Total	%	Total	%
≥ 71	12	14.1	8	6.8
70 - 61	16	18.8	21	17.8
60 - 51	21	24.7	32	27.1
50 - 41	21	24.7	20	17.0
40 - 31	14	16.5	34	28.8
30 ≥	1	1.2	3	2.5
Total	85	100.0	118	100.0

As we mentioned above, in Piring, the main economic activities are agricultural ones. Therefore, the proportion of farmers of the household heads is the highest, 45.9 percent, and is followed by 12.9 percent of officials (teacher 5 persons, public servants 4 persons, others 2 persons) (Table 5).

TABLE 5. PRIMARY OCCUPATION OF HEAD OF HOUSEHOLD

Occupation	Piring		Bandung	
	Total	%	Total	%
Official	11	12.9	17	14.4
Farmer	39(2)	45.9	35(5)	29.7
Farm-laborer	4(1)	4.7	9(1)	7.6
Laborer	6	7.1	39(2)	33.1
Small Trader	2(2)	2.4	9(3)	7.6
Handicraft Laborer	8(8)	9.4	2(1)	1.7
Pensioner	4	4.7	4	3.4
Without Occupation	11(4)	12.9	3(1)	2.5
Total	85(17)	100.0	118(13)	100.0

Note : ( ) : Female heads of households

And then, it is noticeable that 8 female household heads (about half of total female household heads) are batik laborers. This is skilled handicraft work which can be combined with household chores. The batik laborers get muslins with a preliminary traditional sketch from a batik wholesaler once a week. At the time, they also deliver those painted with wax to the wholesaler and are paid Rp. 3,000 to Rp. 5,000 per a piece of painted muslin according to the pictures. They can paint three pieces of muslin in a month on average. But this work gives the female household heads a few opportunities to get a cash income in the hamlet. During the rice planting season, not harvesting season, of course, most of them stop painting batik and work in the wet rice fields. But in Piring, the harvesting is usually depend on male labor.

The proportion of the without occupation group in Piring (12.9 percent) is higher than that in Bandung (2.5 percent, but one person is unemployed) because the ratio of the old heads of the households is higher in Piring.

On the other hand, in Bandung which is located within commuting distance by even bicycle, working as a laborer is the most important activities because that accounts for 33.1 percent. Laborers mean carpenters, brick layers, other construction laborers and repairmen of a bicycle and a motorcycle. But 34 heads of the households out of the laborer group in Bandung work for building-housing or civil engineering construction in the neighborhood of Kelurahan Pendowoharjo or in Yogyakarta City. They are usually employed by villagers or building constructors by wages or contract. Therefore their monthly income is not always fixed.

Farmers are second biggest occupational group (29.7 percent) among the total household heads in Bandung. And officials (teacher 4 persons, public servant 9 persons, official of sugar company 4 persons) who are regularly employed make the third biggest occupational group accounting for 14.4 percent. The commute everyday to their offices in Bantul Town, Kecamatan Sewon, Kecamatan Imogiri and Yogyakarta City. Then there are 9 small traders (7.6 percent) who sell snacks, something to drink, *tempe*, vegetables, fruits and so on or act as broker of farm products.

TABLE 7. SIZE OF OWNED AND OPERATED WET RICE FIELDS

(m <sup>2</sup> )	Piring				Bandung			
	Owned Land		Operated		Land		Operated	
	Total	%	Total	%	Total	%	Total	%
≤ 500	10	21.3	6	13.6	16	26.2	17	29.3
501-1,000	13	27.6	16	36.4	18	29.5	22	37.9
1,001-2,000	10	21.3	14	31.8	16	26.2	12	20.7
2,001-3,000	5	10.6	7	15.9	9	14.8	5	8.6
3,001-4,000	2	4.3	1	2.3				
4,001-5,000	4	8.5					2	3.5
5,001 ≤	3	6.4			2	3.3		
Total	47	100.0	44	100.0	61	100.0	58	100.0

First, concerning the ownership of wet rice fields, as indicated in table 7, the proportion of the households in Bandung who own more than 0.2 hectare wet rice fields is only 18.1 percent, rather lower than 29.8 percent in Piring. Therefore the average size of owned wet rice fields is small, especially 0.13 hectare in Bandung, compared to 0.20 hectare in Piring. Difference in the average size of owned wet rice fields between two research sites partially reflects the difference in the population density of both sites.

The households which rent all of their wet rice fields or have it sharecropped occupy 17 households or 36.2 percent, and which own the wet rice fields partly rented or sharecropped, 19 households or 40.4 percent of the owner households in Piring (Table 8). The owner households which cultivate their wet rice fields by themselves are very few, namely 7 households (14.9 percent).

Compared with this, the ratio of the owner households which not rent their wet rice fields, but cultivate them by themselves is so high as 45.9 percent (28 households) among the owner households in Bandung. This gap in the ratio of an owner farmer partially reflects that the average size of wet rice fields in Bandung is so small that a lot of owner households in Bandung are not able to rent their wet rice fields.

Second, the tenants are 14 households or 36.8 percent in Piring and 11 households or 19.3 percent in Bandung out of the each non-owner households. In Bandung the proportion of the tenants is lower than in Piring because Bandung is more blessed with the opportunities to get non-agricultural activities or the average size of the owner's rice fields is small.

Including these tenants, the farming households which operate wet rice fields are 44 households or 51.8 percent in Piring and 58 households or 49.2 percent in Bandung out of all respondents' households in both research sites. Unlike the average size of owned wet rice fields as mentioned above, the average size of operated wet rice fields is balanced between two research sites, namely 0.12 hectare in Piring and 0.11 hectare in Bandung respectively.

TABLE 6. AVERAGE HOUSEHOLD EXPENCES A MONTH

Household Expences (Rp)	Piring		Bandung	
	Total	%	Total	%
250,001 ≤	3	3.5	4	3.4
200,001 - 250,000	5	5.9	3	2.6
150,001 - 200,000	3	3.5	9	7.6
100,001 - 150,000	7	8.2	14	11.9
75,001 - 100,000	6	7.0	17	14.4
50,001 - 75,000	22	25.9	34	28.8
25,001 - 50,000	27	31.8	22	18.6
≤ 25,000	12	14.2	15	12.7
Total	85	100.0	118	100.0

As described above, in Bandung in the suburbs of Yogyakarta City, there are many heads of the households who are engaged in non-agricultural activities to get a cash income. Therefore, it can be estimated that the tendency towards to the money economy among the household heads in Bandung is stronger than in Piring. For example, the average household expences a month among the respondents' households in Bandung are Rp. 86,069.7, compared with Rp. 79,623.3 in Piring (Table 6).

#### Sawah (Wet Rice Fields)

Finally the reporter makes some explanations on the wet rice fields, namely sawah in both research sites.

In both Dusun Piring and Bandung, there are no dry fields. The whole cultivated land is, therefore, wet rice fields because the research sites and neighboring hamlets are located in wet rice areas.

But the ratio of the owner households which own wet rice fields is, as shown in table 8, only a little more than half out of the respondents' households in the both sites, namely 55.3 percent (47 households) in Piring and 51.7 percent (61 households) in Bandung. On the contrary, the ratio of the households which do not own cultivated land and make their livelihood by non-agricultural activities in 39 percent (46 households) in Bandung within commuting distance into Yogyakarta City that is considerably higher than we imaged, compared to 28 percent (24 households) in Piring. However it goes without saying that wet rice fields are essential resources for farm production for the village people.

TABLE 8. OWNER AND TENANT HOUSEHOLD

	Piring		Bandung	
	Total	%	Total	%
Owner Household	47	100.0	61	100.0
All Land Leased-out/ Sharecropped-out	17	36.2	14	22.9
All Land cultivated by the Owner	7	14.9	28	45.9
Some Land cultivated by the Owner and the Rest Leased-out/Sharecropped -out	11	23.4	11	18.0
Some Land cultivated by the Owner and the Rest Leased-out/Sharecropped -in	4	8.5	4	6.6
Some Land cultivated by the Owner, Some Leased-out and the Rest Leased-in	8	17.0	4	6.6
Tenant Household	14	16.5	11	9.3
Non-farming Household	24	28.2	46	39.0
Total	85	100.0	118	100.0

### CONCLUSION

As described above, the reporter has given some accounts for general condition of the two hamlet, composition of the households, occupations of the households' heads and farm households by ownership status in the two research sites, Piring and Bandung which are located in the wet rice areas in Bantul Regency, Yogyakarta Special Region. In summary, some following facts or emerging trends can be indicated.

1. Though the two research sites are located in rural area, they have considerably high population density which is above 2,100 persons per square kilometre.
2. The most dominant type of the villagers' households in the both sites is the simple nuclear family type, and following type is the stem family type.
3. The average number of persons per households is not so many, namely 4.0 persons in Piring and 4.6 persons in Bandung.
4. It seems that the rule of residence to determine who is able to live with parents among married sons and daughters is not fixed.
5. The proportion of the owner households which own wet rice fields is only a little

average size of the wet rice fields operated by the owners or the tenants there is very small, approximately 0.1 hectare.

6. Therefore, in Piring, the proportion of the farm households' heads out of the whole households' heads is the highest, the main economic activities for a farmer.
7. As concerning the difference between two research sites, it is allowed to say that the effects of economic development is stronger in Bandung than in Piring and that the attributes of the village people directed to money economy are stronger also in Bandung than in Piring because Bandung is located within easy commuting distance to Yogyakarta City.

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## MOISTURE AVAILABILITY AND AGRICULTURAL POTENTIALITIES OF MALI AND NIGER

by  
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### ABSTRACT

*One of the greatest factors limiting agricultural development in arid and semi-arid regions of Africa is lack of moisture. A country with adequate moisture has a great potential for agricultural development. It is against this background that this paper focuses on the application of Hargreaves monthly moisture availability index classification to Mali and Niger in West Africa. The two countries are classified into moisture regions on the basis of the index and their relative agricultural potentials are assessed.*

### INTRODUCTION

The republics of Mali and Niger are former francophone West African countries are basically agricultural. They are landlocked and due to recurrent drought afflictions their economies have not been able to pay their way. The greatest obstacle to agricultural development in these countries is lack of water. An attempt has therefore been made to employ the moisture regions and assess their suitability for rainfed agriculture.

### BACKGROUND

Mali has a total land area of 1,240,710 square kilometer and lies between latitudes 11<sup>0</sup>N and 25<sup>0</sup>N. The two countries depend upon their Southern neighbours for access to the sea due to their landlocked location. Mali has a population density of about 5.1 persons per square kilometer (1976) while Niger has 3.3 persons per square kilometer (1971). Over 80 percent of the inhabitants of both countries are heavily concentrated in the south and southwest along the valley of river Niger. In Mali the river Niger flows for 1500 km while in Niger Republic it flows for 300 km in the Southwestern part.

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