

DEFINING RURAL DIVERSIFICATION IN A SMALL-FARMING REGION :The Case of Yogyakarta Special Province, Indonesia

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ABSTRACT

Studies on the relationship between rural diversification and rural development in Indonesia have gained its pace in the last two decades. Rural diversification in a small farming region has led to varied and contradictory interpretation. Rural diversification can be seen as a sign of either rural economic stagnation or capital accumulation and economic progress, depending on a specific locality where it prevails. Yogyakarta Special Province (DIY). Indonesia is a part of Java Island where the process of rural diversification has gained its pace since the 1970s, triggered by investment on rural infrastructure leading to higher quality of human resources.

This paper aims at formulating the definition of rural diversification and the position of agricultural diversification in a small farming region on the basis of an extensive literature review. A comparison of the existing definition of rural diversification is made from the available materials representing various parts of the world. Additional information concerning the empirical study on rural diversification in DIY is presented in order to complement the theoretical review for the formulation of a definition of rural diversification in a small farming region.

The process of rural diversification in DIY since the 1970s has shifted from a supply-pushed to demand-pulled type non-farm production and employment. This has led to the relative decrease of the contribution of agricultural sector in both production and employment in the province. Rural diversification is defined as the outcome of a process growing importance of non-agricultural employment and incomes for rural households as a consequence of their increasing participation in non-agricultural activities like services, commercial and/or industrial activities, either or not related to agricultural sector and located both in the rural areas as well as in the nearby urban areas. Taking this definition as given, agricultural diversification may be treated either as further consequences or underlying causes of rural diversification.

Key words: *Rural diversification, agricultural diversification, rural development, small farming-region*

INTRODUCTION

Prior to the crisis, Indonesia has experienced an impressive economic growth of over 5 percent per annum. This relatively high growth could be maintained for about two decades. This was mainly achieved through the buoyant oil revenue during the 1970s and a relatively successful economic transformation during the 1980s (Manning, 1988). At the same time the economic structure of the rural areas experienced a considerable change in terms of employment and incomes. In the case of DIY, the rural economy has diversified, resulting in the growing importance of non-agricultural production, employment and incomes. Investment in rural infrastructure during the oil boom has facilitated population mobility toward employment opportunities either in the nearby rural areas, or in towns within commuting distance. According to a number of studies incomes generated per unit of time by these non-agricultural activities is generally higher than those in agriculture (Maurer, 1991; Effendi, 1993 and Rotge et al, 1995 and 2000).

The diversification of the rural economy in areas with an inadequate supply of land and an abundant surplus of labor like the one in the province has led to varied, and sometimes, contradictory interpretations (Rigg, 2001). First, rural diversification has been viewed as a symptom of economic marginalisation. This interpretation is based on the assumption that involuntary involvement in non-agricultural activities is often the rule rather than exception. Thus, according to this view rural non-agricultural activities are explained by the supply-push rather than demand-pull factors. Within the context of small farming in Java, rural non-agricultural activities are undertaken as a part of occupational multiplicity for a bare subsistence (White, 1976, 1986; Jones, 1984; Hart, 1980, 1985).

Second, rural diversification in Java has been viewed in a more optimistic way, viz. because of capital accumulation in the rural areas. This process of capital accumulation is seen as a corner stone for further growth and development of the rural economy (Svensson, 1991). This view asserts that rural diversification in Java cannot only be understood as an involutory process in the Geertz connotation or as a socio-economic marginalisation (Titus et al, 1994). Rotge et al. (1995 and 2000) in more recent studies in DIY have shown that the higher level of rural diversification in terms of employment sources reflects a more dynamic rural economic development. Maurer (1991) argues that the diversification of the rural economy in the DIY and Java in general is not only a result of successful agricultural development supported by the oil-boom gain but is also related to the higher educational attainment and skill improvement leading to job specialization rather than occupational multiplicity (White, 1976). Educational attainment and human development index in the province is among the highest in comparison to the rest of Indonesian provinces (UNDP, 2001). The growing urban economy in Yogyakarta City led by international tourism and higher education services have given ample economic opportunities for the more educated rural dwellers who live in the commuting zone from the town.

In a more recent observation, Huisman and Kragten (1995) arrived at the same conclusion that in Bantul District of DIY non-agricultural rural activities are not marginal by definition, but can be viable dynamic undertakings. In their research village of Manding, rather spectacular developments in the sub sector of leather goods were found to have

taken place. Cottage industries have grown to medium-sized firms in a short time span only. Farmers in the area increasingly meet problems in finding farm laborers, which shows that the non-agricultural activities have started to out-compete agricultural work in this micro context. In an increasing number of households, considerable proof of capital accumulation has been found.

Apart from theoretical differences, the varied interpretation on the nature of rural diversification and the possible contribution of rural non-agricultural activities to rural development is also attributable to the fact that most studies do not pay sufficient attention to the regional contextual factors which affect the process of rural diversification (Titus, et al, 1994). *Regional contextual factors such as the level of agricultural development, accessibility, population density, proximity to urban centers and rural-urban linkages* are very relevant in conditioning the growth and development of rural non-agricultural activities (Hagglblade, 1989). Basant (1994) asserts that economic diversification in rural areas is one aspect of macro-economic changes taking place in the economy as a whole. Consequently, many factors affecting rural diversification may originate from outside the micro rural location. Therefore, Smith (1970) argues that the living conditions of rural households may become highly determined by external economic factors, in which they do not have much influence. Thus, in order to understand the possible contribution of rural non-agricultural activities to rural development, macro determinants on the growth and development of rural such activities at the local level should be assessed simultaneously.

Available data on rural non-agricultural employment since the 17th century (De Vries and Cohen, 1937; Fernando, 1996) shows that there is a consistent pattern of economic diversification being determined by the level of integration of rural areas into the urban capitalist economy. This means that the role of rural non-agricultural activities in rural development should be understood in the context of currently growing rural-urban interaction, taking into consideration both rural and urban-based non-agricultural activities and their respective roles in rural diversification, as well as their changing relations with the agricultural sector.

Rural diversification as an emerging concept in rural development has been understood in different ways. From various existing works on this topic, rural diversification is understood both as process and an outcome of a process of rural socio-economic transformation. Moreover, rural diversification is also perceived differently to cover either agricultural or non-agricultural activities and establishments. Agricultural diversification is often considered separately as an underlying cause or effect of rural diversification. Thus in studying rural diversification in a specific geographical region a proper elaboration of this concept is necessary. This paper aims at developing a definition of rural diversification in a small farming region of DIY.

Objectives

In order to understand the relevance of rural diversification in rural development, the concept of rural diversification should be adjusted to local circumstances. This is partly due to the fact that rural diversification is often used interchangeably with agricultural diversification. The paper is aimed at inventing the variation of the concepts of rural

diversification from an international literature and establishing an alternative definition of rural diversification in the context of a small farming region of DIY on the basis of both theoretical overview and review of various empirical studies. An assessment on the position of agricultural diversification will be made to provide a theoretical view on the relationship between rural diversification and agricultural diversification and their respective role in rural development.

THE METHOD

The paper is based on a survey of literature on rural diversification and related topics. Extensive inventory of literature, publications and reports on rural diversification from both developing and developed countries are made. This helps to show the varied definition of rural diversification across bio-physical and cultural region over the world. A number of relevant studies from Asia, Africa, Europe and Latin America are reviewed. The main ingredients of the definition of rural diversification are identified from the available works on the topic. A new operational definition of rural diversification for small farming region is proposed on the basis of this extensive literature study and some empirical studies of DIY. At the same time a chronological review on the available studies on related topics in DIY is made to adjust the definition to local circumstances. Parts of the review of the empirical conditions of DIY during the crisis is based on a secondary data analysis, utilizing production and employment data of 1998 and 2000 that allow for an assessment on the shift of share of various economic sector during the period.

The paper is presented in the following order. After this introductory section, an account on the position of rural diversification in rural development in DIY is presented on the basis of available empirical studies. This is presented in a chronological order to provide an insight to the role and contribution of rural diversification in rural development in DIY since 1970s. An inventory and comparison among various definition of rural diversification from developed and developing countries is made in the next section. The components of various definitions are identified and compared to arrive at a common view shared in order to construct a new definition of rural diversification that suits the situation in a small farming region.

RURAL DIVERSIFICATION AND RURAL DEVELOPMENT IN DIY

Rural development in DIY seems to be strongly determined by the level of rural diversification. In the case of DIY, rural diversification is not only related to the availability of production factors at local provincial level but also the conditions and nature national and mostly international environments. This is very evident from the most important economic sectors of the province, viz. education service in DIY is catering national level demands and the tourism sector is strongly tied with international tourist destination networks. Moreover, the research area has been integrated into the capitalist economy since the colonial period through the establishment of sugar cane plantations and its processing industry, and now is among the most populous areas in rural Java with a very high pressure on agricultural land.

Thus at present rural diversification in DIY in the words of Kada (1983) can be considered as a necessary ingredient for rural development. The importance of rural diversification in rural development of DIY in the last four decades have shifted from a symptom of economic marginalisation (Penny and Singarimbun, 1976 and White, 1976) to a sign of dynamic growth (Rotge, 1992, 1993), Maurer (1991) and (Rotge et al, 1995 and 2000). A chronological presentation of the role of rural diversification in rural development of DIY since the 1970s is given as follows:

Phase I: 1970s and before

In the 1970s, researches on the rural economy of DIY are commonly pointing to the inability of agricultural sector to absorb the growing labor force. Greater portions of the population are pushed in to marginal types of non-agricultural activities (Penny and Singarimbun, 1976). Household members in the village of Kaliloro are involved in various income generating activities, reflecting an extreme condition of occupational multiplicity (White, 1976). This deteriorating condition in rural areas of DIY in this decade was partly due to negative effects of exclusionary labor arrangements emerging from the green revolution technology and the lack of rural infrastructure that facilitates rural-urban mobility for urban employment.

At the same decade, the oil boom has led to agricultural commercialization and remarkably generous government investments in rural infrastructure. The increasing availability of rural infrastructure throughout the province has increased the opportunities for social and spatial mobility opportunities to large sections of rural dwellers in the next decade. At the same time, the increase of real incomes from agricultural production has provided a basis for the rise of rural-based non-agricultural activities. Thus the provision of rural infrastructure has been the major starting point for the accelerated process of rural diversification and rural development.

The work of Booth and Damanik (1989: 303), using provincial data from 1976-1982, is also in line with this interpretation. They assert that in the DIY, the later part of 1970s saw an absolute decline in agricultural labor force; much of the increment to the labor force was absorbed in small-scale industry, construction, trade and services. This experience was in sharp contrast to the country as a whole, where almost one-quarter of the increment in the labor force was absorbed in agriculture. The figures for the DIY, in particular, do indicate some worrying trends. Most of the new jobs were created in construction and services; in the later sector, average productivity per worker was rather less than agriculture. There are thus some grounds for concern that the absolute decline in the agricultural labor force has been due to push rather than pull factors, with those who have been pushed out of agriculture only able to find less remunerative jobs in trade and services.

Phase II: 1980s

Entering the 1980s, the most evident changes have been the improvement of rural-urban connections leading to the diversification of employment and income opportunities

in the rural areas of DIY (Rotge, 1992; 1993; Titus et al, 1994). The excessive growth of public and private transportation means as a response to the provision of infrastructure in 1970s has enabled rural labour to get involved in urban jobs with higher real incomes. It seems that the improved rural-urban connections have also led to more productive utilisation of land and human resources in rural areas. At the same time, higher incomes gained from urban jobs have considerably strengthened the purchasing power of the rural dwellers and consequently lowered the threshold for various goods and services. This in turn has allowed the growth of more rural based non-agricultural activities, more especially in the most densely populated areas of the province. The province also shows a considerable variation in the degree of diversification among different agro-physical conditions and accessibility (Titus et al, 1994; Huisman, 1994). Thus these conditions offer an interesting opportunity for studying differential responses to rural diversification in the various types of areas.

It is most probably true that in DIY, the growth of rural non-agricultural activities in the last three decades has been very impressive as it is shown by the study of Jones (1984). From 1960 to 1980 non-agricultural employment has grown at 160 percent, whereas the comparable figure for agricultural employment is only about 10 percent. It seems that the ending of the Javanese agriculture's absorptive capacity for labour has been adjusted in three different ways: migration to the outer islands, commuting and circulation for urban jobs and growth of non-agricultural employment (especially in trade, manufacturing and services) in rural areas. Under conditions of a growing non-agricultural employment in the rural areas of DIY, where landlessness and small farming are very dominant phenomena, it would be possible to explore the possibility of the relationship between the farm and non-agricultural sides of the rural economy in the province, either at regional or household level.

More recent works in this field reveal a more optimistic picture concerning the economy of rural areas. The growth of rural non-agricultural activities is interpreted as a sign of dynamic growth rather than a symptom of poverty in the rural areas along the road corridors to Yogyakarta Town (Rotge et al. 1995 and 2000). They underline the importance of rural-urban linkages in terms of population mobility, commodity and information flows. The rapid development of rural infrastructure, partly financed by windfall gain from oil boom in the 1970s favorable socio-political stability during the last two decades, lend the best explanation to the recent socio-economic changes.

Phase III: 1990 – 1997

Entering the decade of 1990s, the diversification of rural economy of DIY in terms of rural non-agricultural activities cannot be regarded as involutory or socio-economic marginalisation (Titus et al. 1994). Furthermore, the extent of such activities has been very substantial as noted by Huisman (1994) that although agricultural figures in the economic strategies of three quarter of the households, only one third of these units fully depend on agricultural production. The remaining two thirds is just partly dependent on the sector's

proceeds. Consequently, although strong differences exist between the sub-districts, many rural households in Bantul cannot be labeled as agricultural households: it is quite common that non-agricultural sources provide for an important share of the household budget.

From a longitudinal observation in DIY between 1972-1987, Maurer (1991) concludes that agricultural modernization and rural-biased development strategy followed by the Indonesian government since the early 1970s has contributed to significant diversification of the rural economy towards a wide range of non-agricultural activities and employment opportunities. This is especially true either in the villages surveyed or the district town and the neighboring city of Yogyakarta. Agricultural modernization is certainly not the only factor contributing to this diversification, and it would be wrong to look for any kind of mono-causal explanation of the process of socio-economic change undergone by the island (Java). Unlike some other exporting countries such as Nigeria and Mexico, Indonesia has wisely used the resources (huge export revenue provided by oil and massive external financial assistance) in giving priority to agricultural development. On the other hand, largely due to raising education levels and the acquisition of new skills, this economic diversification has also led to job specialization among the household members and parallel decline in traditional rural occupational multiplicity (cf. White, 1976).

Based on households and enterprises surveys in Bantul District, Huisman and Kragten (1995) conclude that non-agricultural rural activities are not marginal by definition, but can be viable dynamic undertakings. In Manding Village, rather spectacular developments in the sub sector or leather goods have taken place. Cottage industries have grown to medium sized firms in short time spans only. Farmers in the area increasingly meet the problems in finding farm labourers, showing that the non-agricultural activities have started to out-compete agricultural work in this micro context. In an increasing number of households, also considerable proof of capital accumulation has been met with.

A study in the same district by Rotge et al (1995 and 2000) also reported a strong occurrence of sub contracting activities in bag making, batik making and silver-woks as a form of rural-urban linkage. However, it seems that the role of government in bridging rural-urban linkage in forms of sub contracting was very small, if not completely absent. The role of family members and friends commuting to Yogyakarta rather than the government is reported to be very important in bridging the relationship between the urban entrepreneurs and their rural counterparts. Many small-scale processing establishments are found in the lowlands, with a strong spatial bias toward the peri-urban area of Yogyakarta, are well supported by ample infrastructure in transport and electricity (Rijanta, 1990 and Huisman, 1994). Until 1997, the most diversified rural areas of DIY are spreading around the vicinity of Yogyakarta Municipality, the main corridors of DIY and the vicinity of district capitals (Figure 1). The surrounding areas of Yogyakarta Municipality are not favourable location for the growth of medium and large scale manufacturing industries (Kragten, 2000). Moreover, given the limited area of the province, spatial development policy of DIY suggests that the vicinity of Yogyakarta Municipality is directed to be urban settlements that allows small-scale rather than medium and large-scale industries.

Phase IV: 1998 - present

This period coincides with the economic crisis in the province and Indonesia in general. No systematic works on rural diversification during the period is presently available. Discussion of this phase is merely based on secondary data obtained from various government agencies in DIY. From the available data of 1998 and 2000 one may conclude that rural diversification during this crisis period has been declined in its pace. This is evident from both production and employment in agricultural and non-agricultural sectors (Table 1). Moreover, one can observe that the substantial increase in the labour force absorbed in agricultural (from 31 to 43 percent) was not accompanied by similar increase (from 17 to 18 percent) of in its relative contribution to the gross domestic regional product (GDRP). Thus this suggests that during the crisis agricultural sector in DIY has been acting as a safety valve for the rural dwellers and those who recently lost their employment elsewhere and returned to the province.

Among various non-agricultural sectors in the economy, the trade, hotel and restaurant experienced a substantial declined in employment (from 25 to 18 percent) but almost stagnant contribution to GDRP of about 16 percent. A slight relative decrease in GDRP and employment is also experienced by the processing industries that are dominated by small scale food processing for local demands and handicraft making for regional to international market. Whilst small scale industries are facing the problems of uncertainty in input procurement which are partly imported and the declining local purchasing power for goods offered, few establishments in some clusters of handicraft making for international market has enjoyed a windfall profit from the exchange rate differences.

Table 1. Relative Share of GDRP and Employment, Yogyakarta Special Province, 1998-2000

Economic Sectors	GDRP share		Employment share	
	1998	2000	1998	2000
Agricultural	16,6	18,0	31,5	43,3
Mining and Quarrying	1,3	1,2	0,6	0,3
Manufacturing	14,1	13,2	13,4	13,0
Electricity, gas and water	0,7	0,8	0,1	0,1
Construction	7,9	8,0	6,0	6,2
Trade, hotels and restaurants	15,8	15,8	24,9	18,8
Transportation	11,5	12,1	3,9	3,6
Financial, banking and rents	11,2	10,5	1,1	1,7
Services	20,8	20,5	18,5	13,1
Total	100,0	100,0	100,0	100,0

Source: Central Bureau of Statistics, DIY. 1999 and 2001

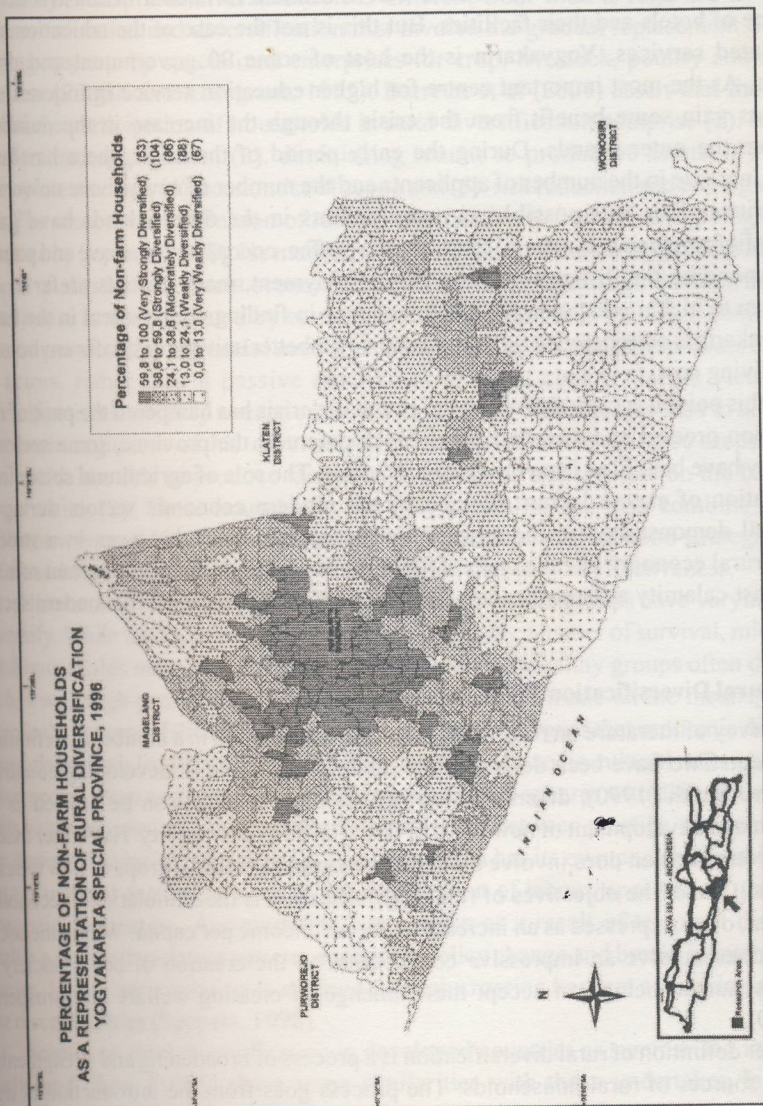


Figure 1. Percentage of Non-farm Household as a Representation of Rural Diversification

The fall of trade, hotel and restaurant sector has hampered the pace of rural diversification in an indirect manner. This sector has a strong linkage with the rural economy through demand for consumption goods and demand for handicraft and souvenirs, which are substantially produced in rural areas as well as demand for labour in construction and maintenance of hotels and their facilities. But this is not the case of the education sector and its related services. Yogyakarta is the host of some 90 government and private universities. As the most important centre for higher education service in Indonesia, the province has gain some benefit from the crisis through the increase in the number of student from the outer islands. During the early period of the crisis, there has been a substantial increase in the number of applicants and the number of new private universities in the province. This was possible as many parents in the outer islands have gained windfall profit from their commercial crops such as coffee, cocoa, rubber, clove and palm oil. Thus in responding the difficulties in finding employment, many parents prefer to send their children to higher education for a better chance in finding employment in the future. So far Yogyakarta is considered to be the best choice for better universities, safer environment and lower living cost.

From this point it is clear that albeit the economic crisis has hampered the pace of rural diversification process and therefore rural development in the province, some sectors in the economy have benefited from the crisis situations. The role of agricultural sector in the accommodation of excess labour released by the modern economic sectors during the crisis is well demonstrated in the table. This gives an evident that even in a strongly diversified rural economy like the one in DIY, agricultural sector plays important role as a buffer against calamity at least for the provision of subsistence when the modern sectors collapse.

Defining Rural Diversification

The survey of literature on rural diversification has resulted in a number of definitions of the concept. Two have been derived from studies carried out in developing countries. According to Smith (1970), diversification (of the rural society) can be defined as the introduction and development of new ways of living within rural society. He further asserts that rural diversification does involve the introduction of alternative crops or new types of employment. One of the objectives of rural diversification is the stimulation of economic development, often expressed as an increase of the net income per capita. Within the social context, it does involve an impressive contribution to the creation of better society in which every human being can accept the challenge of creating welfare and prosperity (Smith, 1970).

Another definition of rural diversification is a process of broadening and strengthening the income sources of rural households. The process goes from the introduction of new crops and technologies into traditional farming systems to the development of off-farm jobs in rural small-scale industries. Eventually, the process involves the exit of a growing proportion of the rural work force from agriculture as a part of the structural transformation of the economy. At this general level, rural diversification can be viewed as a gradual and inevitable process (World Bank, 1988 quoted in Barghouti, et al. 1990). Slater (1991) in a

study of the rice growing areas of Sri Lanka, stresses that the term of rural diversification refers to a diversion of labor time from farm to off-farm activities and that it does not include a shift of farm-based activities e.g. from food crops to cash crop cultivation or animal husbandry. Thus, rural diversification is different from what is regarded as agricultural commercialization and diversification that involve the gradual replacement of integrated farming systems by specialized enterprises for crop, livestock, poultry and aquaculture products (Pingali and Rosegrant, 1995). Barretta et al (2001) assert that the motivation behind the participation of households in rural diversification comprise (1). seasonal and interpersonal aggregation, (2). diminishing returns to productive assets, (3). missing or incomplete markets, (4). economies of scope and (5). risk reduction and coping with shocks.

The most recent definition of rural diversification is from an antropological study in Tanzania by Seppala (1998). He maintains that rural diversification is a process of conducting several qualitatively different economic activities within a social unit in which the portofolio of activities is never dictated by economic activity only, but is shaped in conjunction with cultural peculiarities and social networks. Diversification is an active process that is driven by actors, rather than a passive reaction to external change. In his view, economic diversification is not only a reaction to structural change but can also lead to accumulation. The basic argument of his diversification theory develops in three steps: (1). Rural households are able to produce large variety of goods and services on the basis of small labour units, (2). These households not only specialize but also combine activities in different ways and (3). These combinations define distinct livelihood strategies (cf. Ellis, 2000) and drive different modes of accumulation that vary in effectiveness.

His research in Tanzania reveals that different wealth groups have varying reasons to diversify. While for the poor diversification is generally a matter of survival, middle-income rural households may use it for risk minimization, and wealthy groups often diversify into niches with high profit potential. Detailed accounts are made on the means, agency and aims in the process of diversification. In general Seppala argues that economic differentiation takes place along livelihood strategies that have specific socio cultural traits. Accumulation often occurs when an item is transferred between social spheres with different value frames. This value conversion takes place at the crossroads between prestige, the commercial and the domestic domains of exchange. The conversion has its own power dynamics and often entails unequal exchanges such as the exploitation of labour, speculation, patronage and domestic domination. Accumulation can happen as a result of temporal discontinuities within a seasonal variation pattern, economic policy change and breaks in intergenerational cycles. In sum accumulation is attained through crossing barriers and taking advantage of the discontinuities (Seppala, 1998).

Studies on rural diversification in developed countries as summarised in the study of Kelly and Ilbery (1995) share some similarities with those undertaken in developing countries. In parts of Rural England, the undertaking of alternative enterprises, both agricultural and non-agricultural and by farmers and non-farmers alike has increased. The use and economic importance of land labour and capital has become diversified with concomitant shifts from the primary to the secondary and especially tertiary economic sectors. Although the diversification of the rural economy has not only been agriculture-

oriented, it is the transformation of this sector which has had the greatest impact on the appearance of the countryside and has stimulated generations of land-associated labour to seek alternative employment (Kelly and Illberry, 1995).

Based on this survey of literature, one may conclude that in defining rural diversification the following aspects have to be observed. First, rural diversification can be seen both as a process and/or situation. As a process rural diversification may be resulting from conscious efforts of government and/or of rural households via various policies and strategies (either controlled or at least induced processes). It may also be seen as a gradual and inevitable process that may take place automatically in the absence of such policies. Second, the aims of the participation of rural households in rural diversification are cover a wide range from economic ones (incomes) to social welfare (employment). Third, rural diversification includes both farm and non-agricultural activities carried out by rural farm and non-agricultural households, mostly located in the countryside. Fourth, the direction of changes in terms of the use capital, land and labour is from farm-dominance to manufacturing, commerce or service-dominance in the countryside.

The definitions of rural diversification given above are very general in nature and cover a very wide range of activities either farm or non-agricultural. The definition should be adjusted to local circumstances where a study is taking place. In the context of small agricultural region of DIY, rural diversification is defined as the outcome of a process growing importance of non-agricultural employment and incomes for rural households as a consequence of their increasing participation in non-agricultural activities like services, commercial and/or industrial activities, either or not related to agricultural sector and located both in the rural areas as well as in the nearby urban areas. The definition covers a broad range of non-agricultural employment opportunities in rural areas with various conditions of integration into urban and regional economic systems.

The process of agricultural diversification can be seen both as a determining factor and/or as a further result of rural diversification. Thus, agricultural diversification may be hypothesized to have a systematic relationship with rural non-agricultural employment as is occurring elsewhere (Evans and Ngau, 1991; Ho, 1979 and Ho, 1982; Bray, 1986; Slater, 1991; Grabowski, 1995). Agricultural diversification may be treated in two different ways. As a determining factor to rural non-agricultural activities, agricultural diversification may play its role under two different conditions with two contrasting types of rural non-agricultural activities. In the first place, as a reflection of risk averting behavior of small farm households, agricultural diversification may be conditioning the growth of distressed and supply-push types of rural non-agricultural employment. In the second place, as a reflection of risk taking behavior of the larger farm households, it may be conditioning the growth of remunerative and demand-pull type of rural non-agricultural employment.

Moreover, agricultural diversification can be viewed as a further result of the growth and development of non-agricultural sector. The availability of incomes gained from various rural non-agricultural activities can be further invested in the agricultural sector. At regional level, an evidence from China (Islam and Hehui, 1994) shows that the contribution of incomes from rural industry to the development of agricultural infrastructure is very important. The contribution of rural non-agricultural incomes gained from rural industry

has gradually replaced the more important position of government expenditure in this sector. An example from Africa, as demonstrated in the work of (Evans and Ngau, 1991; Evans, 1992) shows that households with non-agricultural employment tend to control greater areas under coffee, to spend more on farm inputs and non-maize foodstuffs. Thus, in this case agricultural diversification is reflecting an eagerness to take risk in some farmers as they can count on surplus from non-agricultural employment. Therefore, this evidence supports the idea that innovation in farming can be achieved through participation in rural non-agricultural activities.

The main advantage of this interpretation of agricultural diversification in the context of the study of rural non-agricultural employment is that it becomes possible to explore the magnitude of relationships and linkages between farm and non-agricultural production at regional and household levels by the application of various models and statistical techniques. This offers a greater possibility for a more comprehensive understanding.

Another aspect worth mentioning in defining rural diversification as outlined above is a contextual one. In areas with low population density like those in African countries, abundant land availability, labour scarcity and high risk of crop failure, rural diversification is best seen as agricultural diversification in forms of various crops grown in combination with livestock production and some non-agricultural activities (Upton, 1987, Bryceson, 1996). Various studies on rural diversification in African countries devoted a considerable attention on this agrarian side of rural diversification as well as its linkages to non-agricultural activities (Haggblade, et al, 1989; Reardon, et al, 1992; Evans and Ngau, 1991 and Evans, 1992). In most of the cases the main force behind rural diversification in these societies is a risk minimising strategy in which risks are spread over various activities covering farm and non-agricultural activities. Whereas in the densely populated (mostly rice growing) areas with limited availability of land and less probability of farm expansion and within the context of abundant supply of labour, rural diversification should be mainly seen in the growth and development of rural non-agricultural activities.

In many Asian countries -where labour supply is abundant and expansion of agricultural lands is limited- a substantial number of studies on rural diversification has addressed rural non-agricultural activities as the main component. In these societies the logic of studying rural non-agricultural activities as a main component in rural diversification also lies on the fact that these activities tend to grow significantly in terms of employment and income shares. Studies from India (Rao, 1985; Chandrasekhar, 1993; Basant, 1994; Basu and Kashyap, 1992; Verma and Verma, 1995), Bangladesh (Ahmad, 1985), Sri Lanka (Slater, 1991), and Indonesia more particular on Java (White, 1976, 1979, 1986; Jones, 1984; Rietveld, 1987; Breman, 1995) are pointing to this trend and therefore best representing this type of studies on rural diversification.

Rural diversification as a part of rural transformation process consists of changes in the value and preference toward better living conditions stimulated by educational process. In fact, educational attainment in the province is among the best in Indonesia, the means year of schooling in the province is close to 8 years that is substantially higher in comparison

to the national figure of 6.7 years in 1999 (UNDP, 2001). Thus under the limited land resources available in the rural areas, there is an ample stimuli toward rural economic diversification either in situ or beyond the village boundaries. Moreover, the early improvement of living conditions and rural-urban interaction in the rural side of the province as an outcome of the oil boom expenditure since the 1970s have facilitated a stronger rural-urban linkages in forms of population mobility, commodity flow and information exchanges. This in turns further stimulated a more diversified economic structure in the province as it is reflected by the growing importance of service and manufacturing sectors as source of employment.

CONCLUSION

Studies on the relationship between rural diversification and rural development in Indonesia have gained its pace in the last two decades. DIY as a part of Java Island has experienced an unprecedented development of rural diversification until 1997. Given the limited land resources in the province there has been a marginalisation process in the agricultural sector of DIY. Inability of the agricultural sector to accommodate more labour force has triggered a supply-pushed type rural diversification since the 1970s. At the same decade the Indonesian government gained a windfall gain from the oil boom. Massive investment on rural infrastructure in the decade has led to higher quality of human resources, better rural infrastructure and more easy rural-urban mobility for employment that in turn enhanced rural diversification in the following decade. Income surpluses gained from the urban areas are then partly invested on farm and non-agricultural activities in rural areas that make rural landscapes more diversified. The most diversified rural areas of DIY are spreading around the vicinity of Yogyakarta Municipality, the main corridors of DIY and the vicinity of district capitals.

The definitions of rural diversification as identified from various sources are greatly varied. Based on a literature review one may conclude that in defining rural diversification the following aspects are commonly observed. First, rural diversification can be seen both as a process and/or situation. Rural diversification may be resulting from conscious efforts of government and/or of rural households via various policies and strategies. It may also be seen as a gradual and inevitable process that may take place automatically in the absence of such policies. Second, the aims of the participation of rural households in rural diversification are cover a wide range from economic ones (incomes) to social welfare (employment). Third, rural diversification includes both farm and non-agricultural activities carried out by rural farm and non-agricultural households, mostly located in the countryside. Fourth, the direction of changes in terms of the use capital, land and labour is from farm-dominance to manufacturing, commerce or service-dominance in the countryside.

Thus rural diversification in a small farming region like DIY should be best defined as the outcome of a process growing importance of non-agricultural employment and incomes for rural households as a consequence of their increasing participation in non-agricultural

activities like services, commercial and/or industrial activities, either or not related to agricultural sector and located both in the rural areas as well as in the nearby urban areas. Taking this definition as given, agricultural diversification may be treated as further consequences or underlying causes of rural diversification. This gives an opportunity to examine the relationship between rural diversification and agricultural diversification in a small farming region from which the importance of rural diversification in rural development can be assessed.

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