



Institute of Social Studies

Graduate School of Development Studies

INCOME DIVERSIFICATION AND POVERTY IN RURAL VIETNAM

A Research Paper presented by:

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(VIETNAM)

In Partial Fulfillment of the Requirements for Obtaining the Degree of:

Master of Arts in Development Studies

Specialization:

ECONOMICS OF DEVELOPMENT

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The Hague, December 2005

This document represents part of the author's study programme while at the Institute of Social Studies; the views stated therein are those of the author and not necessarily those of the Institute.

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ACKNOWLEDMENT

The period of time for the master program in ISS is nearly to the end. For me, although it is not enough, it to some extent may be a great milestone for my future.

Firstly, I would like to thank Sara Lee Foundation who granted me the scholarship of the master program in Economic Development Program in the Institute of Social Studies (ISS).

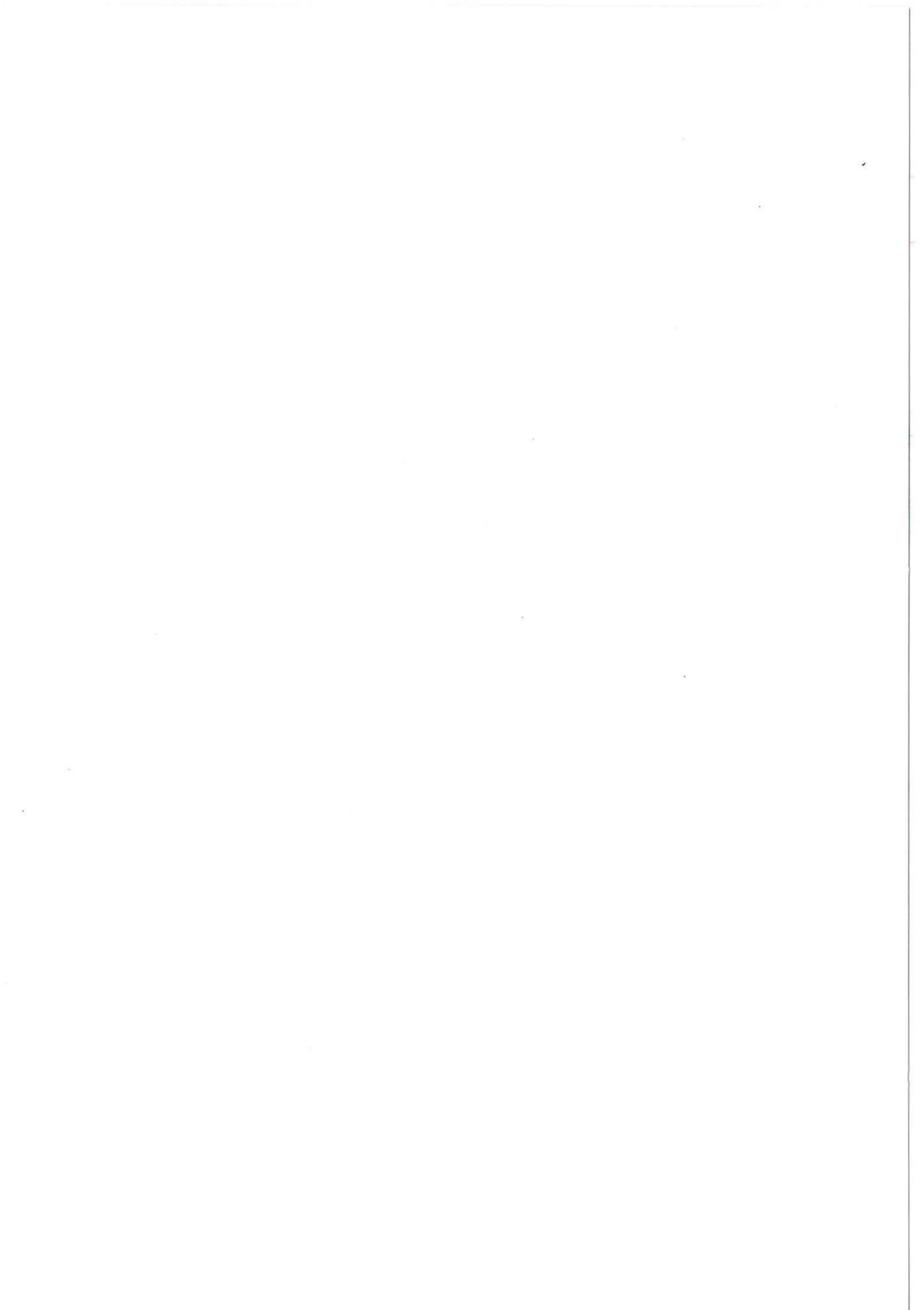
Secondly, I would like to send the sincere thank to all the teachers in ISS who has provided me with the general and specialized knowledge, especially my two supervisors: Dr. Arjun S. Bedi who gave a lot of helpful comments and encouraged me when I had problems in doing research paper; and Dr. Peter de Valk who gave me some bright ideas from our discussions. Our program administrator, Marja Zubli, will be also a warmly hearted friend in my memory.

Thirdly, I am indebted to Dr. Dang Kim Son who used to be my boss, the director of Information Center of Agriculture and Rural Development. He has facilitated me to seize this opportunity of having this scholarship program. He gave me good directions which are suitable for my work in the future and my capacity as well.

Fourthly, my paper is also benefited from other colleagues: Phan Sy Hieu and Tran Cong Thang who provided important information and experiences in spite of long distance. Thanks are also due to other contribution of many international friends like Admasu and Rene who gave me many bright ideas and solutions when I got stuck.

Moreover, I feel very lucky and happy to receive friendships from ECD members and Vietnamese group friends in ISS including Lien Phuong, Minh Huong, Hien, Mai Anh, Ha Phuong, and Nghiem. They bring me a lot of fun as if I am still living in a family. Thanks are also given to Shari – my ex-colleague and my good friend- who helped me with English correction.

Last but not least, I would like to send the most special thank to my family members: Dad, Mom, and my younger sister – Cunbeo who have brought me many care and endless love. Another special thank goes to my future husband, Phuong Nam who has given me lots of love, encouragement and support in spirit.



LIST OF ACRONYMS

GSO: General Statistics Office

JICA: Japanese International Cooperation Agency

MARD: Ministry of Agriculture and Rural Development

MOET: Ministry of Education and Training

MOF: Ministry of Finance

MOLISA: Ministry of Labor, Invalid and Social Affairs

OLS: Ordinary Least Squares

PHC: Population and Housing Census

SMEs: Small and Medium Enterprises

Std.dev: Standard deviation

UNDP: United Nations Development Programs

VHLSS: Vietnam Household Living Standards Surveys

VLSS: Vietnam Living Standards Surveys

VND: Vietnam Dong

WB: World Bank

WTO: World Trade Organization

CPRGS: Comprehensive Poverty Reduction and Growth Strategy

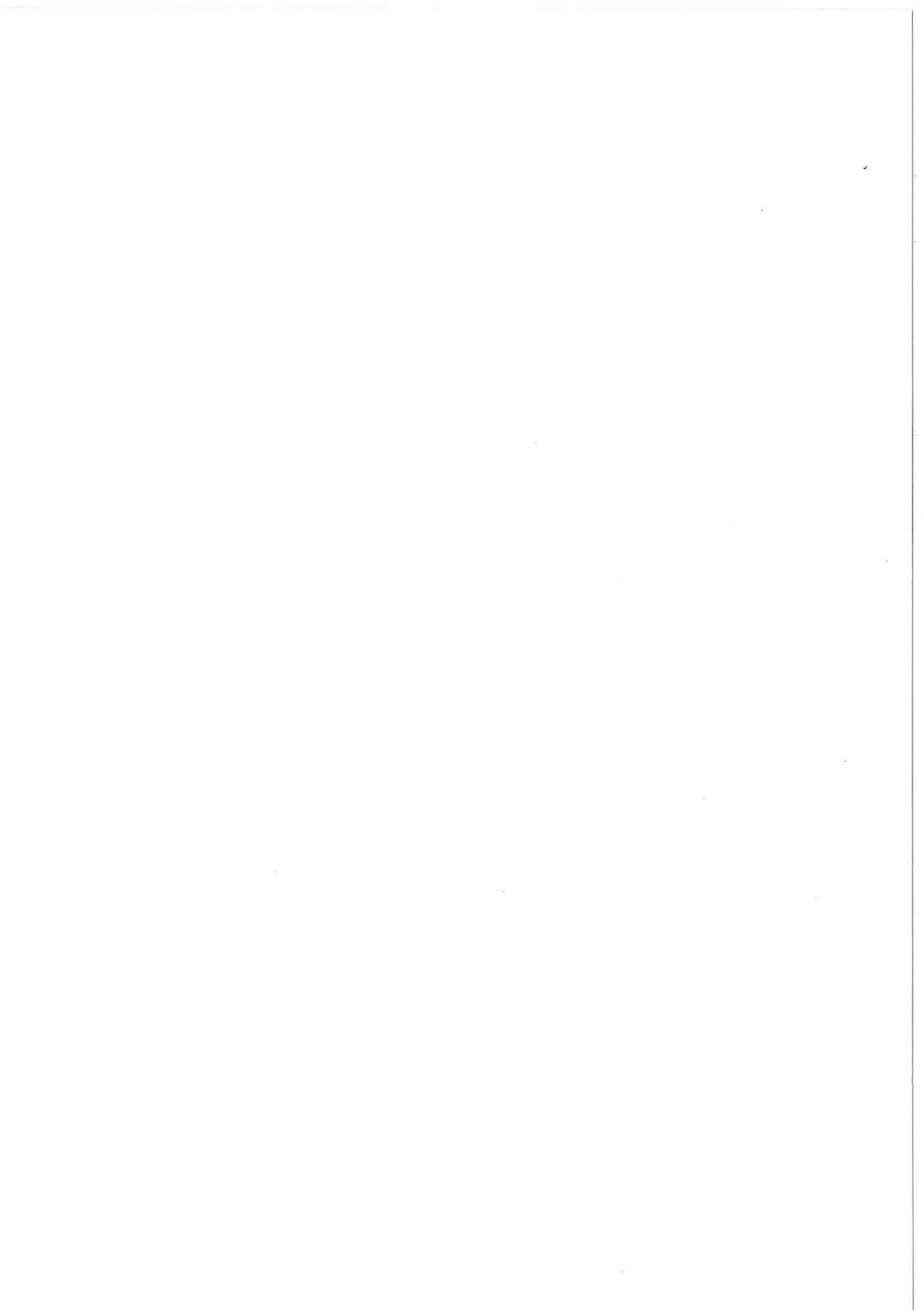
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CHAPTER 1

INTRODUCTION

The relationship between income diversification and poverty has been one of the most heavily and carefully explored subjects in many empirical works from transitional countries. However, these empirical works differ according to various methodologies, data sets and according to the specific conditions of each country or region.

Although diversification, its trends and its effects in rural livelihood continues to be the central topic of policy debate, this issue is still considered one of the national strategies for poverty reduction in many developing countries, including Vietnam. Vietnam regards diversification to be one of the main national strategies on rural development and agriculture in 2001-2010.

1.1 PROBLEM STATEMENT:

Since the national economic renovation (Doi moi) in 1986, Vietnam's economy has marked a continuation of achievements with various new policies, particularly Resolution 10 - Vietnam's own version of the Chinese Household Responsibility System (Glewwe., et al, 2004:133) These new policies were implemented to improve the economy through income growth and poverty reduction. Some results of this were seen through statistics showing the incidence of poverty dropping from 58 percent in 1993 to 37 percent in 1998 (Joint Working Group, 2000 – cited in Le, 2005:1) and to 29 percent in 2002 (WB, 2004).

These achievements in poverty reduction can be explained by a growth in agriculture, a rise in agricultural productivity, price liberalization and revised land policies. This reduction may be partly due to an increase in production of rice and other crops, which allowed Vietnam to become the second largest rice exporter without expansion in rice areas, while seeing a fall in domestic consumption. However, another explanation for this achievement is from shifting livelihoods towards higher income activities (Roland, 2005- cited by Le, 2005:1). There are many evidences to prove that diversification has increased the export turnover of fruit and vegetables in Vietnam and allowed Vietnam to become one of the largest coffee producers in the world. In addition

to this, diversification towards non-crop activities such as aquaculture, livestock-raising and non-farm activities have been recommended as risk-diversification activities, and an important strategy for poverty reduction and income growth.

One of the reasons for diversification towards non-crop activities such as aquaculture, livestock-raising and non-farm activities is risk reduction. Non-farm and non-crop activities are recommended as risk-diversification activities.

Besides the implication of diversification into crops by increasing crop intensity and clearing new lands, diversification can be seen as an increase in activities of income generation. In other words, households can utilize and allocate their resources and labor endowment into non-crop production as well as into non-farm activities. However, both understandings of diversification bring the same significance of expanding job opportunities and income generation, which is now a very important strategy for poverty reduction in rural Vietnam.

When it comes to Vietnam's agricultural economy, land and resource scarcity, risk management, regional culture and poverty reduction are the main incentives for income diversification. Vietnam is a country mainly based on agriculture production accounting for 23% of total GDP in 2002 (JICA-MARD, 2004:3-8). In addition, 77% of national population and over 90% of those living in poverty are in rural areas. And 70% of rural income is derived from agriculture (MOLISA, 2004). On top of that, a shortage of cultivation land is still the main problem for peasants especially for the poor in rural areas. According to the Development Report of Vietnam in 2004, 19% of the rural population does not have land for cultivation; a figure that is up from 8% in 1993. In this context, many local people have to find other non-crop activities such as livestock raising, aquaculture and non-farm activities (like farm-product processing, craft trades and farming services) to support their existence. Diversification is a good way to optimize natural resources and labor.

In addition to these factors, Vietnam has also been going through a transition from a centrally planned economy into a market-oriented economy. In other words, the farming outputs have no long relied on the division and requirements of the government, but on the needs of the market. Farming products are particularly sensitive to both domestic and international market fluctuations. Over 1999 and 2000, a crisis of international coffee prices had an enormous impact on many coffee growers, especially

in the Central Highlands, leading to a sharp decline in their living standards. And early 2000, prices of aquaculture products were affected by the lawsuits of catfish and shrimps dumping when entering the US markets. This revealed that besides main regional activities (for example: coffee growing in the Central Highlands, aquaculture raising in coastal areas), farmers needed to consider other non-crop activities and non-farm activities in order to distribute risks for a more reliable income, rather than rely solely on one venture that could be vulnerable to market fluctuations and economic changes.

Traditionally, in some regions farmers knew how to combine crop production with other farm activities using livestock, fishery and forestry. In some cases, the by-products of crop production can be used as inputs for livestock, aquaculture and other services or vice versa. This kind of combination not only assists risk management but also minimizes costs, bringing a greater income and hence reducing overall poverty. According to the GSO (2005), about 28.9% of all households were living under the poverty line and 10.9% under the food poverty line in 2002. These rates are relatively high when compared to other countries in the region.

Many empirical studies have shown that diversification increases income growth and leads to poverty reduction. However, the studies differ amongst nations according to their individual socio-economic conditions, data sets and methodologies. However, these studies mainly focus on the determinants of income diversification. The information on the relationships between poverty and income diversification in rural areas of Vietnam is still limited.

Although Vietnam's government has currently issued many pro-poverty policies like: land law ⁽¹⁾, credit loans ⁽²⁾ and poverty reduction programs for income generation,

¹ The first Law of Land was implemented in 1993, and then adjusted in 2003. This law refers to five rights of land use: the rights of exchanging, of transferring, of lending, of inheriting and of mortgaging land (available at the website: <http://coombs.anu.edu.au/~vern/luat/english/Law-land-law.txt>. Access on November 20, 2005)

it is still debatable whether all these policies are really effective, and whether the tendency towards diversification is good for poverty reduction. It is therefore crucial to conduct research on the relationship between income diversification and poverty, as this will help improve current policies and create new policies for sustainable income growth and poverty reduction across the whole nation.

1.2 JUSTIFICATION:

The Comprehensive Poverty Reduction and Growth Strategy (CPRGS) (2003:1) report pointed out that the reduction in poverty between 1993 and 2002 is significant, but the inequality of income between the rural and urban areas had increased and the poverty rate in rural areas still remained too high (GSO, 2005). The beneficiaries of economic growth seem to be the wealthier populations in urban areas, rather than the poor in rural Vietnam, a very serious situation for a country that relies heavily on its agriculture for its economy.³ Thus, it is necessary to conduct research targeting income growth as well as poverty reduction for the poor in rural Vietnam.

Furthermore, it is important to look at the link between microeconomic contexts and new strategies of diversification, as well as income improvement as a core of poverty reduction in rural areas. This link is important since income growth can be the outcome of shifting into non-crop and non-farm activities for farmers, which can be seen as income diversification. Therefore, it can be seen that diversification activities in rural Vietnam can lead to income growth and poverty reduction of rural households.

Besides this, many studies have applied different definitions and measurements of diversification. The definition and measurement of income diversification is still limited and not universal. The various studies focus mainly on the determinants of income diversification through non-farm employment. Therefore, the purpose of the paper to some extent will help us to understand the relationship between income diversification

² By the end of the 1990s, those living in poverty were granted the right to borrow money at subsidized interest rates.

³ 77% of population and 90% of the total poor are living in the rural areas. And 70% of rural income is derived from agriculture (MOLISA, 2004).

and poverty in rural areas of Vietnam which is one of the concerns of Vietnam government for rural development.

Theoretically, the living standards of households can be explained through income and expenditure of households. Thus, this study will focus on the relationship between income diversification and poverty through a model of household expenditure. Many researchers on poverty have suggested a model of household expenditure as the tool of analysis on poverty, as it may reflect more accurately the living standards rather than the model of income.

Besides, in the paper the definition of income diversification is applied as the percentage of income of non-crop activities over the total income and percentage of non-farm income over the total (in terms of sold outputs - or profit). The paper is looking at the effect of income diversification on household expenditure by using Ordinary Least Squares (OLS) regression model at two points of time: in 1998 and 2002. However, it is not enough if only looking at the effect of income diversification on poverty at two separate times, thus the paper is examine the effect of changes in income diversification on the changes of living standards of rural people over the time by applying Blinder-Oaxaca (1973) methodology of deposition. Exploring these effects, the paper also attempts to assess growth of income diversification on the growth of living standard and the relevant policies as well. Then the objectives benefiting from these relevant policies and changes on income diversification are also examined. These assessments will give some indication of the effectiveness of policies for income improvement and poverty reduction in rural Vietnam.

1.3 OBJECTIVES AND RESEARCH QUESTIONS

1.3.1 Objectives:

The objective of the paper is to identify the situation of poverty and the trend of income diversification in Vietnam over the last decade and examine the effect of income diversification on poverty.

The impact of income diversification on welfare is estimated by a model of household expenditure in which the income diversification is one of determinants of the model. In addition, the effect of changes in income diversification on the growth of

expenditure is estimated by using the decomposition methodology of Blinder- Oaxaca (1973).

1.3.2 Research questions:

The paper will focus on answering the following questions:

- *The general research question:*

What is the relationship between income diversification and quality of life of households in rural areas of Vietnam?

- *The specific questions:*

1/What is the impact of income diversification on the household expenditure per capita in rural areas of Vietnam in the years 1998 and 2002?

2/What is the effect of variation in income diversification on the growth of real per capita expenditure in rural areas of Vietnam between 1998 and 2002?

3/What are the policy implications for poverty reduction and income diversification in rural areas of Vietnam from the relationship?

1.4 DATA SOURCES AND METHODOLOGY

1.4.1 Data sources

The analysis is supported by data varied from many sources including Vietnam Living Standard Survey (VLSS), Vietnam Household Living Standard Surveys (VHLSS), policy statements and reports at all levels.

To calculate and make regression analysis, the two data sets of VLSS 1997/98 and VHLSS 2002 are used. These data sets are set by General Statistic Office (GSO) with support from the United Nations Development Program, the Swedish International Development Agency, and the Japan Bank for International Cooperation and the World Bank. In addition to this, the poverty indicators are also based on two data set VLSS and the 1999 Population and Housing Census (PHC)⁴.

⁴ The 1999 PHC was carried out by the GSO and refers to April 1st, 1999. The group of Poverty Mapping Task Force used 33% of total Census sample, including 5,553,811 households (SIDA Chia Se Project, 2005:3)

The VLSS 1997/98 was carried out with the total sample size of 6,000 households, including 4,270 households in rural areas and 1,730 households in urban areas. And VHLSS 2002 is divided into two sample sets: the first one of 30,000 households (providing information on both expenditure and income) and the second one of 45,000 households (providing information on income). However, for purposes of the paper only the first data set of 30,000 households is used, with separate sample size of 7,000 households in urban areas and 23,000 households in rural areas.

1.4.2 Methodology

To test the relationship between income diversification and household expenditure, the cross-sectional analysis based on OLS regression is applied in separated times of 1998 and 2002.

To examine the effect of changes of income diversification on the growth of living standards over the time, we use the methodology of decomposition by Blinder (1973) – Oaxaca (1973) which was widely used in economics literature to analyze the gap between groups such as gender gap, racial gap, and ethnic gap.

1.4 STRUCTURE AND LIMITATIONS OF THE PAPER

1.4.1 Structure of the Paper

This paper is divided into five chapters. Chapter one gives the general introduction with the problem statement, justification, research questions and objectives and the limitation of the research.

Chapter two reviews the literature of main concepts on poverty and income diversification in rural livelihood framework analysis, and some empirical evidences on income diversification and poverty. Then the framework of analysis is also mentioned in the chapter.

Chapter three provides a brief overview of the poverty situation, income diversification and inequality existing in rural areas of Vietnam over the last decade.

Chapter four performs estimates of a model of household expenditure by two national surveys of VLSS 1997/98 and VLHSS 2002 and the calculation of income diversification. This will be followed by a test of differentials of expenditure and

income diversification over time, using the decomposition methodology of Blinder – Oaxaca (1973).

The paper is concluded in Chapter Five, and offers some recommendations for government intervention policies on income growth as well as poverty reduction.

1.4.2 Limitations

One of the limitations of the paper is scope of the data set. Although the data set of national household surveys is very helpful, the observations are still limited especially the VLSS 1997/98 only with 6000 households meanwhile there are 30,000 households for VHLSS 2002.

Moreover, both the two data sets are not panel data that means the observations in the first survey are not the same as that in the second one. Therefore, the paper is not likely to give out the concrete results of effect of changes in income diversification on the growth of expenditure over the time from 1998 to 2002. In addition, the methodology of implementing the two national surveys was somewhat different, thus the corresponding information from the two surveys are narrowed down when making cross-sectional analysis.

In addition, we have to rely on the assumption that all the information from the two surveys on income and expenditure is accurate. It is unavoidable to find minor errors in reporting, and therefore we consider this another limitation of the paper.

CHAPTER 2

THEORETICAL FRAMEWORK

For a broader and more comprehensive understanding of poverty and income diversification in rural development theory, this chapter gives an overview of the rural livelihood framework. Then the concepts of diversification and poverty and their relationship will be put in the livelihood framework of analysis, while referring to some empirical evidence on poverty and income diversification. The final section of this chapter is the framework of analysis through which the results and analysis will be provided in Chapter Four of the paper.

2.1 RURAL LIVELIHOOD, DIVERSIFICATION AND POVERTY

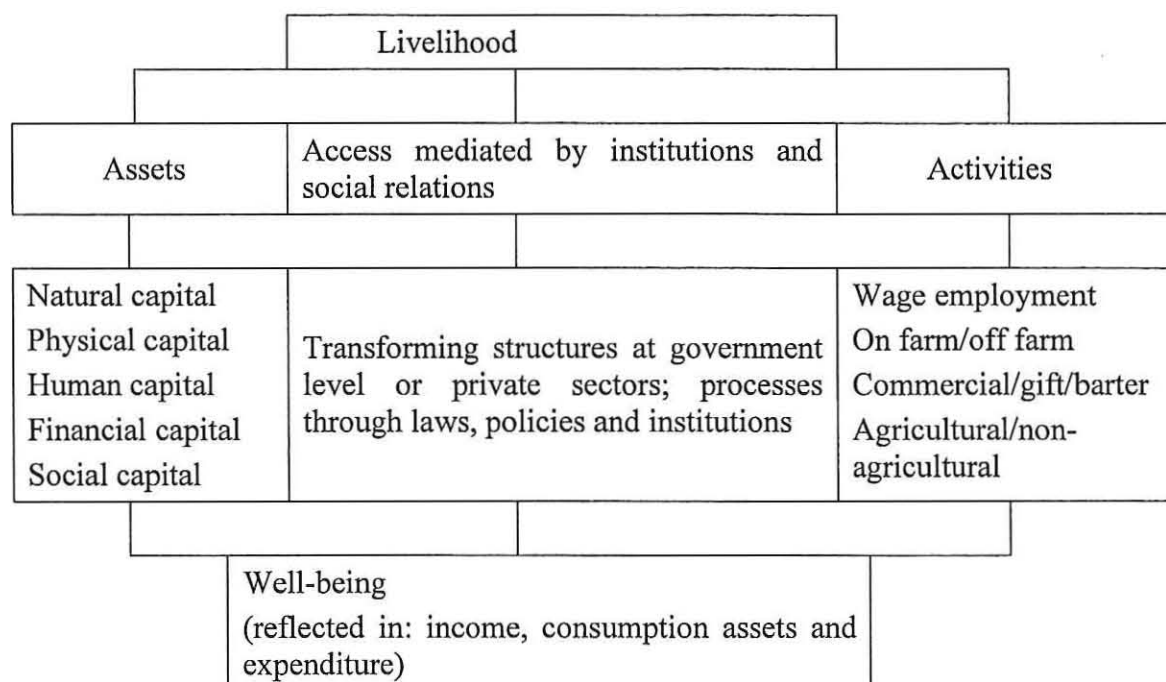
2.1.1 Rural livelihood framework

To clearly understand the definition of rural diversification, it is necessary to look at the broader perspective, which is rural livelihood framework. The definition of rural livelihoods is widely used in studies in rural development. Its meaning still appears elusive either due to vagueness or to different definitions being encountered from different sources. However, the most common definition is provided by Chambers and Conway (1992:7-cited in Ellis, 2000:10) and then modified further by Ellis (2000):

“A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household.”(Ellis, 2000:10).

This quote shows that the components of sustainable livelihoods include diversification and living standards. Furthermore, to see more clearly the linkage between diversification and living standard in rural strategies, it is necessary to look at the framework for livelihood analysis provided in the figure 2.1 of Davis and Bezemer (2004:8).

Figure 2.1: A framework for livelihood analysis



Source: Davis and Bezemer (2004:8)

2.1.2 Conceptualization of Diversification and Poverty

Diversification:

The framework of livelihood analysis that Davis and Bezemer (2004:8) adapted from Ellis (2000b:30) provides a clearer picture of the terms of diversification in a rural development context. Rural livelihood diversification is defined as “the process by which rural households construct an increasingly diverse portfolio of *activities* and *assets* in order to survive and to improve their living standard” (Ellis, 2000:15).

Viewed in a broader sense, diversification is linked to increasing commercialization and the structural transformation of the economy where the agricultural share of GDP contracts. The process involves not only cropping but also new marketing and agrofood based industrial activities that affect the overall rural economy. Therefore, rural income diversification encompasses both agriculture and the stimulation of rural non-farm sources of income (Golleti, 1999:4).

Ellis (2000:4) agreed with the idea that when diversification is discussed in the context of rural development, it is often posed either in terms of changes in on-farm activities or in terms of developing rural-based non-farm industries. The former enables an individual or household to “correct dangers of undue reliance” on a farming product

when it has to face the instability of the markets. The latter implies the search of alternative non-farm full-time jobs for rural households or individuals in locations other than cities.

However, in the livelihood strategy the reasons for pursuing diversification have two opposite sides: necessity and choice which are respectively called as “push” and “pull” reason respectively in the migration literature. The former mentions the involuntary reasons for diversification. This often happens in case of natural disasters or civil war which results in the loss of ability to continue the previous agricultural activities. In other words, it is “necessity” for farm households to diversify for their surviving. By contrast, the latter reason refers to proactive idea for diversifying. Farm households have “choice” (are willing) to diversify for their income growth and improved living standards. They usually save money in investing in non-farm jobs and seeking out seasonal wage earning chances (Ellis, 2000, 55-56). Also, (Hart, 1994- cited by Walle and Cratty, 2004:246) argued that diversification “pushes” farm households to struggle for surviving in some cases mean while in other cases it “pulls” them to desire for accumulation. However, both contrast cases shared the same idea that the increase of income diversification is “endogenous to living standards” (Walle and Cratty, 2004:246).

Because of originating different reasons, adopting the diverse portfolio brings both negative and positive effects in literature. As for positive effects, Ellis (2000, 235-236) indicated seasonality, risk reduction, higher income, assets improvement and environmental benefits in rural livelihoods.

He argued that farming is the main activity which often creates “trough” and “stream” of labor utilization in the rural areas. Therefore, diversification can utilize labor and generate more income in off-peak periods. In addition to this, diversification reduces risks by spreading risks across activities.

He added that the higher income from diversification may be used for improving quality of life by investing in education, health condition and also farm production. Besides, in the environmental aspect, diversification helps people to improve the quality of natural resources and exploit them in right and legal purposes.

In contrast, Ellis (2000, 236-237) also mentioned the disadvantages of diversification, some of which include inequality in income distribution. The rich are

likely to access full-time jobs, or off-farm employment, meanwhile the poor have disadvantageous conditions (lower education, worse health, less money, many children) for accessing these employments. Thus, the distribution of wealth is unbalanced between the rich and the poor.

Another problem exists with workforce availability. To some extent diversification can lead to a decline in certain farming outputs due to a shortage of labor during peak times. Adverse gender effect is another negative aspect in discussing about diversification. Due to the role and status of women, they are argued to be associated domestic sphere. Instead, off-farm jobs seem more suitable for males. These negative aspect of diversification are also concurred by Minot (2003:12) in studying income diversification patterns in Northern Uplands of Vietnam.

To assess the trend of income diversification and its impacts, many economists quantified income diversification by different indicators which are suitable with diverse conditions of data sets; social and cultural context of a region or a country; and purposes of their studies as well. Among these indicators are commonly Simpson Index Diversification (SID) or Shannon-Weaver (SW)⁵ (Joshi et al 2003; Minot 2003); or measuring participations in off-farm activities through share of hours worked in off-farm employment (Walle and Cratty, 2004, 249-251); or measuring commercialization through share of net income (in cash) of non-farm production out of total net income (Minot, 2003); and so on.

The measurement of income diversification in the paper and reasons why to choose this indicator will be mentioned more detailed in the section 2.2 of analytical framework.

Poverty

The definition of poverty was a specific component of wellbeing and was mentioned nearly two hundred years ago in many different ways. Engel (1945) conceptualized it by describing the miserable conditions of working class in the society. Then Morris (1979) referred to it as physical quality of life index, and capability

⁵ SID and SW are widely used to measure the biodiversity if an eco-system thus it is also applied in measuring the number of income sources and the balance among them. But the SW is less sensitive than SID. (Minot, 2003:44)

approach of Sen (1987). After all, it was again mentioned by UNDP (1990) as standard of living.

As for the measurement of poverty, with many definitions of poverty, it is also still a debated question. However, the conventional economic approach has been used as an objective criterion for measuring magnitude of poverty in society at large or in major sub-groups like in rural or urban areas. In this context, the poverty is absolute, that is measurement of number living under the fixed measure that represents the minimum material necessities which is known a poverty line (Ellis, 2000:80).

In principles, the poverty lines are established based on the cost of minimum food needs and other basic necessities. However, due to some complexity and trade-offs, the common poverty lines are food poverty lines (based on the minimum nutrition of 2,100 calories) and general poverty line (based on condition of each country for minimum expenditure and income). In addition, the poverty lines are different by regions, sub groups and by countries. And once some poverty lines are set up, some poverty measures may be calculated: head-count measure (measuring the number of people under poverty line); poverty-gap index (measuring the depth of poverty) and poverty gap squared index (measuring the severity of poverty).

The source data for poverty analysis is often based on large-scale samples at national levels or regional levels. These surveys are on both income sources as well as expenditure, but it is the expenditure data that is preferred to be used for poverty analysis (Ellis, 2000:81). Besides, the most commonly measurement of living standards is income or expenditure (Vu, 1999:153).

However, the measurement based on expenditure (per capita) is preferred over household income for conceptual and pragmatic reasons. Conceptually, household expenditures are a proxy for permanent income or consumption – the ideal measurement because it incorporates decisions made by the household over time (Grootaert, 1996). In addition, survey-based measures of income all have a common serious problem, “which is that respondents understate their income, typically by 10-20 percent on average. And VLSS is no exception. Income fluctuates considerably from year to year; and so it may not give a good picture of the fundamental economic position of the household” (Vu, 1999:153). Furthermore, consumption is more readily measured than income, due to the ability of poor households to smooth their consumption over time in the face of

income fluctuations arising from seasonality or shocks (May, 2001:10). This idea again is concurred by World Bank (1990b) (cited by Ellis, 2000:81).

Therefore, the data set of household surveys is a good tool for making analysis on living standard by using the model of household expenditure. Households with higher levels expenditure will be referred to as better off (Vu, 1999:153).

2.1.3 Diversification and Poverty – Empirical evidences

There are not only many domestic studies but also international ones on the relationship between diversification patterns and poverty. However, they are different because of diverse methodologies, measurements, various contexts of regions and different period of times.

For the case study of Vietnam, Annou and Pederson (1999) (cited in Minot, 2003:15) used 1992/93 VLSS to assess the pattern of diversification by measuring the share of non-rice output. They found that household with specialization in rice production tend to diversify into non-farm activities more than the others.

To study the pattern of diversification in Northern Uplands of Vietnam, Minot (2003) applied three measurements of diversification: multiple income sources, commercialization and shift to high-value activities. With the first definition of diversification as multiple income sources, Minot applied SID⁶ and SW⁷. As for the second meaning of diversification, he defined into three measures of commercial diversification including crop commercialization, agricultural commercialization and income commercialization. The final concept refers to the process of shifting to high-value activities: high-value crops, high-value non-crop activities and non-farm activities. In addition to this, he also applied the methodology of Qualitative Social Assessment of Income Diversification (QSAID) to assess the trends of income diversification in Northern Uplands and its impacts on income growth in this region. The results of his study indicate that the living standards of rural people in North Uplands in Vietnam have improved thanks to higher yields (crop diversification), higher

⁶ SID = $1 - \sum_{i=1}^n P_i^2$ where P_i is the proportionate area (or value) of i^{th} activity

⁷ SW = $-\sum P_i \ln(p_i)$ (Minot, 2003, 43-44)

income in livestock. However, the non-farm income is somewhat more popular among higher-income households than poorer ones.

Quoted by Nguyen (2005:36), Tran (2004) used VLSS 1992/93 and VLSS 1997/98 to find that the relationship between non-farm income share and total household income in Vietnam in 1990s is strongly positive. And Nguyen (2005:36-37) also finds the nearly "J curve" which expresses the strong positive relationship between off-farm income and total income.

Recently, Walle and Crathy (2004) used the two panel data sets of Vietnam Living Standards Survey (VLSS) in 1992/93 and 1997/1998 VLSS to test if the off-farm income diversification provides a certain route out of poverty. They found that it is only good for some but not for all Vietnamese poor. Different from other studies which only concerns about determinants of income diversification (off-farm employment), their study explored the endogeneity of diversification to poverty. That means all determinants of income diversification are examined as endogenous to poverty. In their research, the income diversification is explained by the share of non-agriculture self-employment hours in total hours of household economy activities and probability of non-agriculture self-employment. The poverty indicators are measured by the log per capita expenditure and probability of escaping poverty.

For other countries especially developing countries, income diversification pattern is also positively correlated to income growth, and living standards. Lanjouw and Feder (2001) indicated that the non-agricultural rural sector improve the living standards, leading to poverty reduction in Ecuador. Non-agricultural enterprises provide jobs for nearly 40% of economically active men and 50% of women. He also made a household analysis showing that the poverty reduction can be expected from expanding employment in transport, commerce-related activities and services.

Reardon (1997) (quoted by Minot, 2003:14) found that non-farm income is very important for households in rural sub-Saharan African areas because it accounts for 30-50% of rural household income. However, he added that non-farm income is only popular among better-off households. In addition, Minot (2003:14) quoted the idea proved by Barrett et al (2000b) that income diversification is higher among rich households because non farm activities set barriers (education, capital) for the poor households by taking case study in Cote d'Ivoire and Kenya.

Joshi et al (2003) studied on diversification in South Asia by applying area and production statistics and SID. The SID in most of Asian countries tends to increase. They gave the specific example of India with various diversification patterns by regions. If the southern and western regions prefer shift from grain crops towards oil seeds, vegetables and fruits, the popular trend of diversification in northern regions is from coarse grains towards rice and wheat.

Besides, the effect of income diversification on poverty is expressed through the relation of income diversification and income distribution. Poverty is not like inequality. A highly unequal income distribution is associated with low levels of absolute poverty in many industrialized countries but is relative to high incidence of poverty in poor countries (Ellis, 2000:90). Therefore, there are two opposite ideas. The first one considers that diversification in income may have an equal impact on rural income because the non-farm activities are argued to help poor households with fuller employment of resources and more household income, more equal distribution of income. This argument is supported by many studies with different case studies in Botswana by Valentine (1993); in Paraguay South America by Zoomers and Kleinpenning (1996) (cited in Ellis, 2000:90).

However, the opposite view shows that diversification has unequal effect on rural income and wealth. The explanation for this idea is that the better-off households are able to diversify in more favorable labor market when compared to the poor ones, because the poor possess low human capital in terms of education levels, skills and experiences. The diversification seems to benefit higher-income household rather than low-income ones. Many studies in some rural Asia and Latin America countries and one country in Africa (Ethiopia) by Block and Webb (2001) support this view. In addition to this, diversification can result in reduction of farm output because of depletion in farm labor force in peak season (as a lot of rural labor rush to attend in non-farm activities). This is typical for the case in Southern Africa in 1970s and 1980s where rural people depended much on the remittances from migrants to urban areas for their food security (Ellis, 2000:90).

2.2 FRAMEWORK OF ANALYSIS

2.2.1 Income diversification and regression model

Income diversification

- How to measure income diversification:

With the limitation of information in two surveys of VLSS 1998 and VHLSS 2002, the income diversification in the paper is posed in the paper either in terms of shifting from crop production – main activity in rural areas of Vietnam into non-crop activities (inside on-farm income source) or shifting from on-farm production into non-farm production (off farm income + unearned income, see the figure 2.2). It is notable that the income diversification is measured in the presence of profit (in-cash). In other words, the income diversification includes two indicators:

+) The first one is the share of income of sales from non-crop outputs (in fishery, forestry, and livestock), being called *diver1*.

+) The second one is the share of income of sales from non-farm outputs (non-farm enterprises and unearned income – pension, interests and so on) – *diver2*.

- Why to choose this indicator:

As mentioned above, there are many ways to measure income diversification which are suitable to the context of a country or its culture; or availability of data sets; or purposes of researchers. Thus the reason why to choose the indicator for measuring income diversification in the paper will be discussed as follows:

Firstly, rural households are recognized to usually be consumers *and* producers. This implies the presence of profit (from sold output) or in-kind income (from consumed output) (Davis and Bezemer, 2004: 4). However, due to limitation of availability of information, the paper only measure income in terms of profit or only in-cash. To some extent, this is the income source for improving the quality of life by using money from sales on other needs like education, health services.

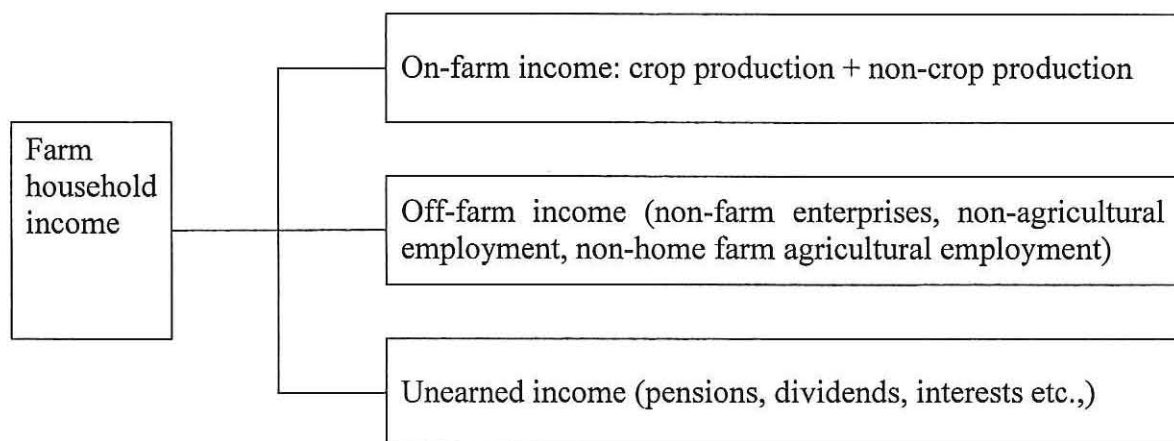
Secondly, based on the potential sources of income available to each rural household reviewed by Davis and Pearce (2001) (cited by Davis and Bezemer, 2004:4), the total income of a household in terms of profit (sold output) is suggested to be divided into three sources: on-farm income (including crop production income and non-crop income: livestock, forestry and aquaculture) and non-farm income (including off-

farm income and un-earned income) (see the figure 2.2). Therefore, the measurement of the income diversification is suggested as following way. Diversification can be understood in two ways: diversification inside on-farm activities and diversification towards non-farm activities (off-farm and unearned income sources)

Diversification inside on-farm activities can be measured by the shifting from crop production which is the main activity in rural Vietnam into non-crop production (like fishery, livestock, and aquaculture). And diversification towards non-farm activities is expressed by the shifting from on-farm activities into non-farm activities (which include source from off-farm income and unearned income).

The final reason to apply this measurement is that it can express the situation of income growth from diversification into non-crop and non-farm activities. This is one of advantages of this indicator when compared to other indicators like SID, SW which are explained by numbers of activities or number of hours working in off-farm employment. These indicators some how only focus on quantity but quality. However, due to the limited availability of the two data sets from different surveys, efforts to get corresponding information from two data sets can lead to the narrow scope of the measurement.

Figure 2.2: Potential sources of income



Source: Davis and Bezemer (2004:4)

Poverty and regression model:

As for poverty definition, In Vietnam it is defined as “a situation in which a proportion of population does not enjoy the satisfaction of basic human needs that have been recognized by the society depending on the level of economic and social

development and local customs and practices” (CPGRS, 2001:11). From the definition, one of the poverty measurements in Vietnam is applied through the Vietnamese Living Standard Surveys (VLSS) and Vietnam Household Living Standard Survey (VHLSS), including two poverty lines: food poverty line and general poverty line. This method refers to the monetary approach by which poverty is defined as a shortfall of consumption (or income).

Both the overall poverty line and food poverty line in the paper were based VLSS 1997/98 and VHLSS 2002 and 1999 Population and Housing Census (PHC) by the inter-ministry Poverty Mapping Task Force. The overall poverty line in 1998 was set to be 1,789,871 VND per person per year, and in 2002 is 1,916,672 VND per person per year. The food poverty line in 1998 was set at 1,268,834 VND per person per year, and in 2002 was 1,382,672 VND per person per year. This means a person with yearly expenditure below the poverty line is poor and above is non-poor (SIDA ChiaSe Project, 2005:3).

In addition to this, the paper also uses the regression between expenditure variable as dependent and household characteristics to analyze determinants of poverty in 1998 and 2002. It is noteworthy that expenditure per capita is chosen to be an indicator of measuring living standards (or economic wellbeing) because of its advantageous conditions when compared to income (mentioned above). Expenditure per capita in the paper is the real expenditure per capita which has already been adjusted to the regional price index. It reflects spending of a person on basic living conditions such as food, education, health services and so on. Thus, in monetary approach, expenditure per capita is suggested to be the best indicator for measuring living standards.

Theoretically, both “push” and “pull” cases indicate that diversification is “endogenous to living standard” (Walle and Crathy, 2004:246). Therefore, it is rational to take indicator of income diversification as one of independent variable of the regression model of household expenditure. Moreover, this is one of the purposes of the paper which aims at examining the relationship between income diversification and living standard in rural Vietnam.

However, for a more comprehensive understanding of welfare in rural Vietnam, it is necessary to add other potential variables in the equation. Due to limitation of information which is not available in the two surveys, thus the model includes a limited

set of additional variables. All the variables in the model are classified into two groups: household head's characteristics and household's characteristics.

As for the household heads' characteristics, it is necessary to consider the variables of age, sex and education. It is normally thought that when people are older they often will earn more income as they gain more knowledge and experience (Le, 2004:21). However, according to argument by Araujo (2003-cited by Nguyen, 2005:17), young household heads or younger males are likely to participate in off-farm employment, improving income and living standards. Maybe a younger age provides more stamina and strength for working.

Gender is also another consideration in the model. Many studies found that females are often together with poverty due to health impacts and burdens of housework and child care. In addition to this, in theories there are two reasons leading to the idea that rural women are poorer than rural men. The first one is that female headed households are poorer than those headed by male. The second is that inequality in distribution of consumption among members in the household make women poorer (Ellis, 2000:141). Thus, Araujo (2003-cited in Nguyen, 2005:17) found that females are not likely to participate in off-farm employment.

Education is one of the important factors in living standards when considering the human capital. People with higher levels of education often have higher income (Le, 2004:16). In Vietnam, thanks to the recent law of Primary Education Universalization, education of Vietnam has improved a lot especially in rural areas where mainly poor people are living. Thus, it is proposed to examine the impact of education on welfare (expenditure per capita) by measuring the rate of people completing a primary degree.

As for the households' characteristics, variables of ethnicity, regions and household size will be considered. In a multi-ethnic country such as Vietnam, it is necessary to look at the variable. Vietnam has 52 ethnic groups with different lifestyles and culture. However, the Kinh and Chinese are majority groups, mainly locating in urban area; meanwhile the other minority groups are more concentrated in uplands and mountainous areas. Walle and Gunewardena (2001) found that there is inequality between the minority and majority groups. The minority groups tend to be both poorer and backward because they are disadvantaged in labor market, isolated and socially exclusive. In addition to this, the Vietnam Development Report (2004) shows that the

poverty rate in majority ethnic groups (Kinh and Chinese) is 23.1% while this figure in minority groups represents 69.3%. Thus, it is rational to add the variable of ethnicity as a determinant of the regression model.

Because of differences in implementation of policies on poverty across regions and of lifestyle and culture, we expect there is a difference in living standards by regions. Both the surveys provide a same division of location over the country into eight regions including Red River Delta, North east, North west, North central coast, South central coast, South East and Mekong River Delta.

When considering the human capital, number of members in a household (household size) can not be ignored. This indicator represents the labor force of a household in quantity. However, large household size can be interpreted in two contrasting ways. Larger household because of many children can lead to lower living standards per person because at this time the total household income has to be shared among larger members without any additional income source. But to some extent, larger household size due to more adults may imply more labor force, leading to more income, improvement of living condition of the household.

Following the above discussion, to explore the determinants of welfare, the reduced-equations for households in 1998 or in 2002 are set up as follows:

$$\ln(y_i) = \beta X_i + u_i \quad (1)$$

where:

$\ln(y_i)$ is the natural logarithm of household expenditure per capita in 1998 and 2002; X_i is a vector of observed characteristics:

+) Household heads' characteristics include: dummy variable of sex, continuous variables of age and education level (rate of obtaining primary degree).

+) Household's characteristics are measured as a series of dummy variables of regions (8 regions) and ethnicity and a continued variable of household size (number of household members).

- β is a conformable coefficient vector to be estimated

- u_i is an error term.

We run two sets of regressions following equation (1). The first one describes the determinants of living standards of rural people in 1998 and the second one presents the model for 2002.

2.2.2 Decomposition of changes over times

Although the section 2.2.1 provides us information about relation between income diversification and poverty in two separated times, this only reflects the effect of income on poverty at a point of time, particularly in 1998 and 2002. However, diversification is a process which is required to take a period of time for outputs thus it is not enough just to look at its effect on living standards at a point of time. In some cases, diversification trend can take 2-3 years or even more. Thus the period of time from 1998 to 2002 somehow is reasonable to assess the effect of changes in diversification over the time on living standards of rural people in Vietnam. In addition to this, this assessment can provide us a more comprehensive understanding about the relationship between income diversification and poverty. Besides, it also helps us with estimation on the trend and the effects of income diversification in rural areas in the future. This is good for policy implication for improvement income diversification and poverty reduction.

There are many different methodologies to assess effects of changes over times, based on the diverse available information of data set. However, the two data sets used in the paper analysis have some limitations. And one of them is it is possible to create the panel data sets with the same observations. This means observations of the first data set (VLSS 1997/98 – 4,270 rural households out of 6,000 households) are not the same as those of the second one (VHLSS 2002 – 23,000 rural households out of 30,000 households).

Therefore, the methodology of decomposition by Blinder- Oaxaca (1973) is proposed to examine the impact of changes of diversification on the changes of living standards in rural areas of Vietnam in 1998-2002. This methodology has been used widely in economics literature to analyze the gap between groups such as gender gap, racial gap, ethnic gap (Lazaer 1979, Freeman 1981, Corcoran and Duncan 1979, Filer 1983). Latest, Dominic (1999) explained the gap between ethnic groups in Vietnam by using this decomposition methodology (Le, 2004:43).

After a cross sectional analysis through the regression models, subtracting the 1998 regression from 2002 regression tells us about the contribution to change of per capital expenditure (living standards) at household level:

$$\overline{\ln(y_i^{2002})} - \overline{\ln(y_i^{1998})} = \overline{X_{2002}} \hat{\beta}_{2002} - \overline{X_{1998}} \hat{\beta}_{1998} \quad (2)$$

where:

- $\overline{\ln(y_{2002})}$ and $\overline{\ln(y_{1998})}$ are mean log household expenditure
- $\overline{X_{2002}}$ and $\overline{X_{1998}}$ represent the means of observed characteristics: sex, age, education level, household size, income diversification, ethnicity, and region.
- $\hat{\beta}_{2002}$ and $\hat{\beta}_{1998}$ are estimated coefficients from the two regressions

Then, the decomposition of the difference of per capita expenditure is represented as followings:

$$\overline{\ln(y_i^{2002})} - \overline{\ln(y_i^{1998})} = (\beta^{2002} - \beta^{1998}) \overline{X_i^{1998}} + \beta^{2002} (\overline{X_i^{2002}} - \overline{X_i^{1998}}) \quad (3)$$

The decomposition the observed log expenditure differentials into two constituents in the right hand side of equation (3): (i) due to differences in the estimated parameters of the expenditure function, and (ii) due to differences in average characteristics of households and household heads including in the equation (1): sex, age, income diversification, education level, household size, ethnicity and regions. However, each methodology reveals its limitation and the methodology of decomposition is not exceptional. The method only tells us about the effect of changes of income diversification on growth of living standards at the average value thus the assessment is not really concrete.

2.3 SOME FINDINGS

Theoretically, the rural livelihoods framework adopted by Ellis (2000) has help to link diversification and wellbeing. Many evidences have proved that diversification has positive relation with wellbeing. However, these studies are different by regions, by methodologies and by diverse data sets.

The analytical framework of the paper includes two sections: (i) cross-sectional analysis and (ii) decomposition methodology. The analytical framework also provides logical ideas of why and how to apply the methodology.

CHAPTER 3

POVERTY AND INCOME DIVERSIFICATION IN RURAL VIETNAM

This chapter provides an overview of the poverty situation and living standards in Vietnam in general and in rural areas in particular over the recent years in order to put the paper in a broader perspective. In addition, the chapter also emphasizes the descriptive trend of income diversification in rural Vietnam through information on non-farm activities and non-crop activities. Now, income diversification is considered to be one of the national strategies for Agriculture and Rural Development in 2001-2010 (WB, 2005:69).

3.1 POVERTY SITUATION AND LIVING STANDARD IN RURAL VIETNAM

As a whole, Vietnam's economy has revealed a better performance although it has experienced effects of international market changes and difficulties of reform implementation like trade liberalization, introducing real interest rates, and issuing property rights in agriculture. Actually, the success of the Doimoi (Renovation) in 1986 has brought bright outlook for its economy.

Although many other Asian countries in the region were struggling from the South East Asia crises, Vietnam's growth rates still have a positive sign. The GDP growth rates have increased remarkably from 2000 to 2003 with the respective figures of 6.79%, 6.89%, 7.04% and 7.24% (see figure 3.1). In addition to this, the growth of Vietnam's trade sector may be explained by export turnover which is estimated to be 19.9 billion VND, increasing by 19% in 2003 when compared to the previous year (CIEM, 2004- cited by Nguyen, 2005:26).

Together with the economic growth, another achievement Vietnam has gained is great reduction in poverty rate. In the 1990s Vietnam is very proud that it escaped from poverty. Many supported policies and programs in Vietnam have helped with remarkable achievements in the hunger alleviation and poverty reduction. According to the report by the World Bank, the speed of poverty reduction in Vietnam is rather fast in

comparison with other regional countries. With expenditure of 1 USD per day by PPP⁸, Vietnam had 13.4% of population living under this level, while the rate was 14.6% in the Philippines, 16.1% in China and 34.7% in India. In addition to this, figure 3.2 shows us the idea that Vietnam is near the common trend which express the negative correlation between poverty and economic growth across the countries.

To identify the poverty rate, a group of researchers of inter-ministry Poverty Mapping Task Force set up the poverty lines based on VLSS 1992/1993, VLSS1997/1998, VLHSS 2002 and 1999 PHC that all are provided by GSO. These indicators show that Vietnam has significant fall of poverty rate from 58.1% in 1993 to 37.4% in 1998 and to 28.9% in 2002.

However, the disparity of poverty rates between rural areas and urban areas is still high. The rate in rural areas dropped from 66.4% in 1993 to 45.5% in 1998 and only 35.6% in 2002. Meanwhile the rate in urban areas in 2002 was 6.6% when compared to the rate of 25.1% and 9.3% in 1993 and 1998 respectively (see the figure 3.2). This is a question to rural development of Vietnam in the coming years.

Box 1: How to measure poverty lines in Vietnam

The poverty line includes the minimum consumption level of both food (70%) and non-food items (30%) and is determined by two-step procedure. The first step is to establish the price of a Vietnamese basket of food items deemed to be necessary for good nutritional status. This is estimated internationally at an average of 2,100 calories per person per day. The second step is to add the costs of the non-food items, which were then derived from the actual levels of the consumption of non-food items of the third quintile.

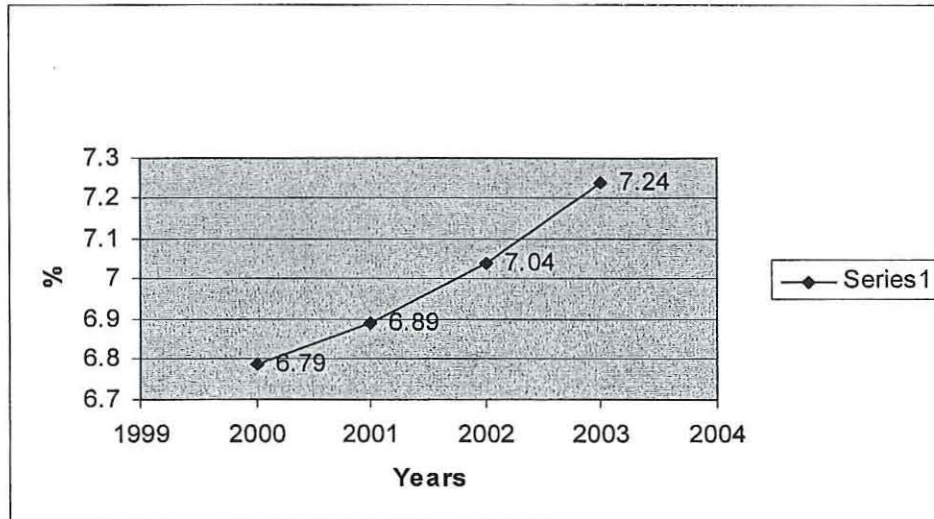
Source: UNDP (2002:8)

In terms of food poverty line which is defined as 2,100 calories/person/day using the food basket of households, most of households in Vietnam have passed the food poverty line. In 2002, over 10% of total population were living under the poverty line. This can be seen as a big improvement when compared to the previous years like in 1993 (24.9%) and in 1998 (15%). However, again the gap between rural and urban areas is still large. The food poverty rates in urban areas are 7.9% in 1993; 2.5% in

⁸ PPP: Purchasing Power Parity

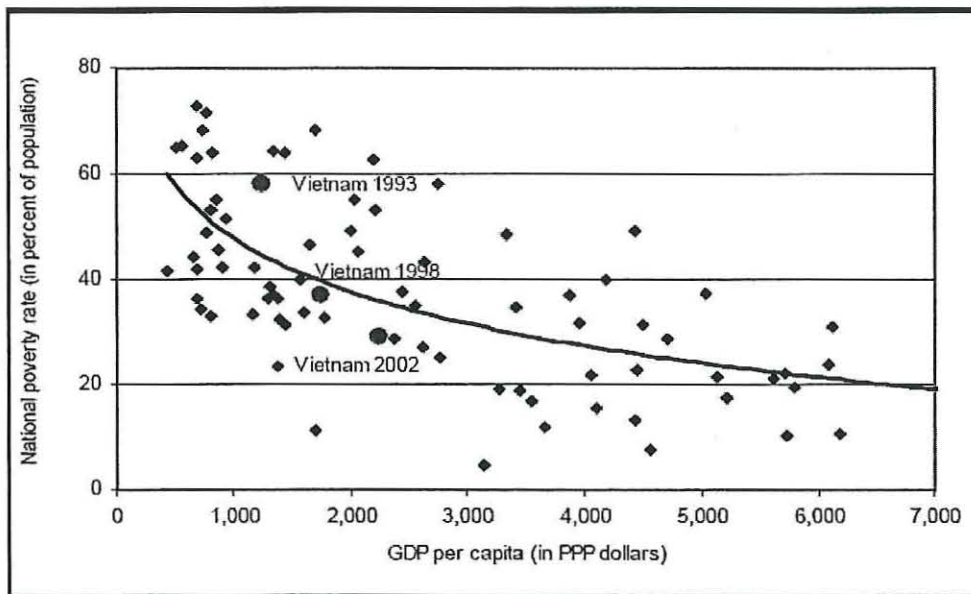
1998; and 1.9% in 2002; while these figures in rural areas are 29.1%; 18.6% and 13.6% respectively. (See the figure 3.5).

Figure 3.1: Vietnam GDP growth rate



Source: CIEM (2004)

Figure 3.2: Poverty and economic growth across countries



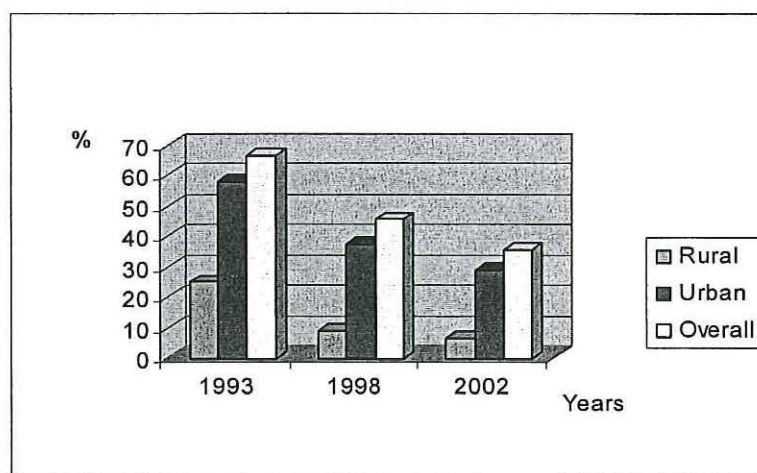
Source: Vietnam Development Report (2004)

Although the poverty rate in Vietnam has fallen, the gap between the rural and urban areas as well as the high rate of poverty in rural areas still are the problems for the development of Vietnam. People in rural regions can gain much less benefit from the economic growth than those living in the urban areas. Rural people have more

disadvantageous conditions like low education, worse health services, less opportunities of employment, slower industrialization and modernization when compared to people in urban areas. Besides, the poverty rates also different between two ethnic groups: majority ethnic groups (Kinh and Chinese) and minority groups (the remaining 50 groups). The poverty rates of majority groups represent 53.9%, 31.1% and 23.1% in 1993, 1998 and 2002 respectively. But these corresponding rates of minority ethnic groups are 86.4%; 75.2% and 69.3% (see the figure 3.4).

In addition, high poverty rates are spatially concentrated mostly in mountainous areas such as the Northwest Uplands and Central Highlands. In 2002, the overall poverty rate of the former is 68% and that of the latter is 51.8%. Many ethnic minorities are living here, relying mainly on agricultural production. In the previous years, agricultural production of these regions faced a lot of difficulties like the price fall in some export commodities: coffee and rubber, which has made a big impact on the economic development in the region. The Northwest and Central Highlands have high food poverty rate, representing 46.1% and 29.5% respectively in 2002 (table 3.6).

Figure 3.3: Poverty rate by areas in Vietnam

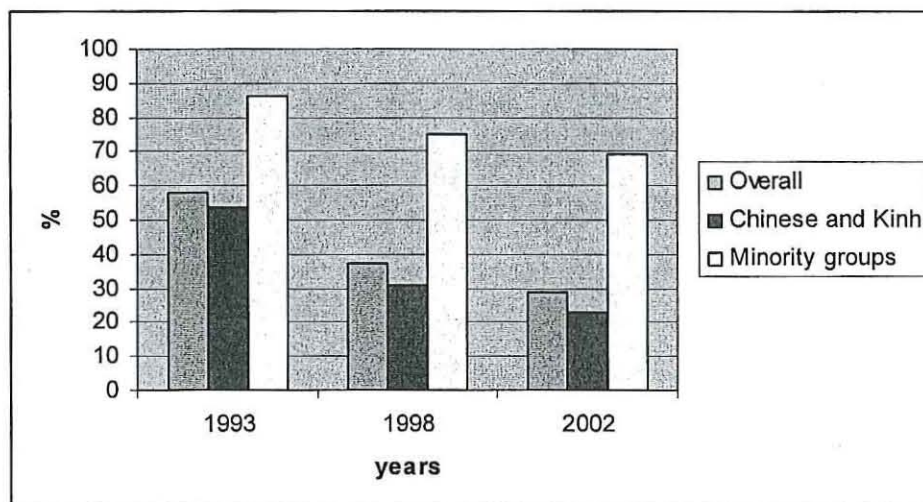


Source: SIDA Chia Se Project (2005)

Meanwhile the poverty rate of the South East is lowest when compared to other regions. This region is seen as most developed region in Vietnam over the past few years. The region has many advantages for economic development like its location near Ho Chi Minh City, favorable weather condition for growing some high-value crops and fruits. In addition, this is the place where recently many industrial zones are located. In

2002, the overall poverty rate and food poverty rate of the South East are 10.6% and 3% respectively.

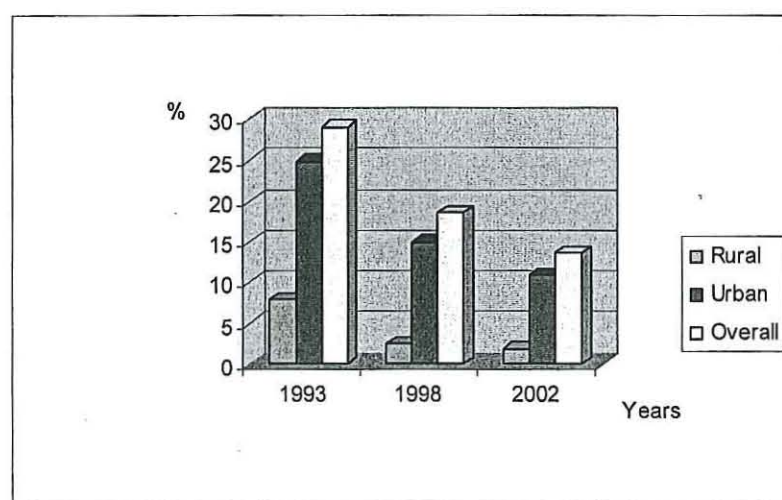
Figure 3.4: Poverty rate by ethnic groups in Vietnam



Source: Vietnam Development Report (2004)

In addition to this, in terms of education which is claimed to have made great contribution in success of many East Asia countries (WB, 2003 – cited by Paul Glewwe, 2004:467), Vietnam’s government has also paid much attention to this. The public expenditure on education has increased dramatically (see the figure 3.7). Between 2001 and 2004 almost all kinds of expenditure have doubled.

Figure 3.5: Food poverty rate in Vietnam



Source: SIDA Chia Se Project (2005)

Table 3.6: Poverty rate by region in 1993, 1998 and 2002

<i>Areas/Regions</i>	<i>1993</i>	<i>1998</i>	<i>2002</i>
<i>Overall poverty rate (GSO poverty rate)</i>	58.1	37.4	28.9
Urban areas	25.1	9.2	6.6
Rural areas	66.4	45.5	35.6
Majority ethnic groups (Kinh and Chinese)	53.9	31.1	23.1
Minority ethnic groups	86.4	75.2	69.3
North Upland	81.5	64.2	43.9
Northeast	86.1	62	38.4
Northwest	81	73.4	68
Red River Delta	62.7	29.3	22.4
North Central Coast	74.5	48.1	43.9
South Central Coast	47.2	34.5	25.2
Central Highlands	70	52.4	51.8
Southeast	37	12.2	10.6
Mekong River Delta	47	36.9	23.4
<i>Food poverty rate (2,100 calories)</i>	24.9	15	10.9
Urban areas	7.9	2.5	1.9
Rural areas	29.1	18.6	13.6
North Upland	42.3	32.4	21.1
Northeast	29.6	17.6	15.4
Northwest	26.2	22.1	46.1
Red River Delta	24.2	8.5	5.3
North Central Coast	35.5	19	17.5
South Central Coast	22.8	15.9	9
Central Highlands	32	31.5	29.5
Southeast	11.7	5	3
Mekong River Delta	17.7	11.3	6.5

Source: SIDA Chia Se Project (2005)

On August 12th 1991, National Assembly has approved “Law of Universalization of Primary Education”. This is the first law on education of Socialist Republic of Vietnam, which confirmed the government’s commitment to free of charge and compulsory primary education for all Vietnamese children. As for 2000, many

provinces have reached the national standard of primary universalization. In addition, following the MOLISA (2004) reports (cited by Nguyen, 2005:29), about 3 million pupils enjoyed school fee exemption and reduction and 2.5 million pupils were granted textbooks and notebooks. The annual amount money of VND 150 billion is spent on educational services to children of poor households⁹. In fact, without these support programs, many poor children would be not able to go to school.

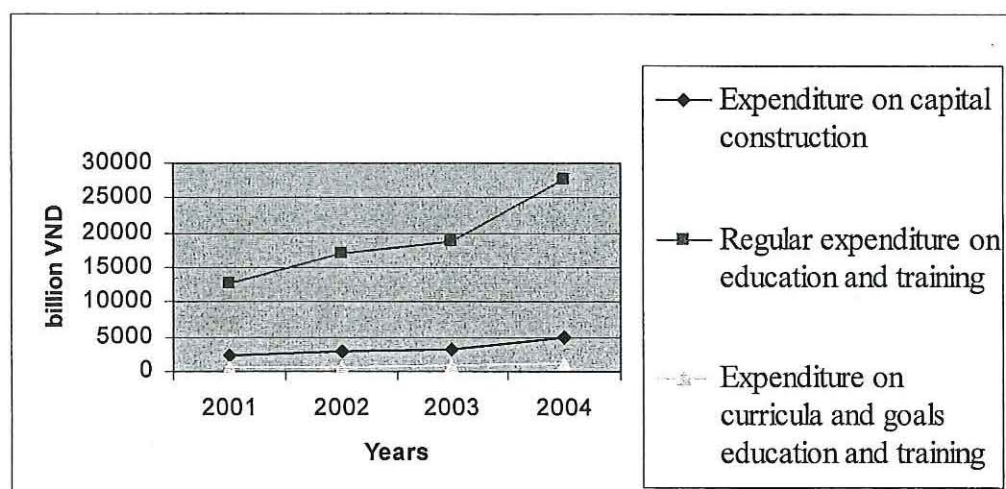
Another public good which the Vietnamese government has paid much attention to is health service. In 2002, the Decision No.139/2002/QD-TTg on the Health Care Fund for the poor was issued in order to pave the way for the poor to access the health services. In 2003, the fund of 522 billion VND was used to provide free health insurance for 3.7 million people and treatment fees for 7.6 million (Solidarity, 2004). According to the Vietnam Development Report 2004, it is a good direction for the poor by initiating Health Care Fund.

Besides, great changes in infrastructure are also a good sign for improving the living conditions in rural areas. Many infrastructure constructions in rural areas like bridges, schools, health care centers and irrigation systems have been built up in mountainous and remote areas through some support programs like Program of Infrastructure for poor communes, Program 135 (MILOSA, 2004-cited in Nguyen, 2005:28). In addition to this, some support policies for income growth and poverty reduction in rural areas have launched. For instance, each rural household can have a chance to do their own business with a loan of 10 million VND (MOF, 2004). In addition to this, the law of land ⁽¹⁰⁾ with five relatives rights of landlords also facilitates the rural people to utilize their land for the maximized benefits. For development of rural areas, Ministry of Agriculture and Rural Development have introduced many production models like farm-product processing industry and handicraft by training local people who will apply these models by themselves.

⁹ The poor household certificate has be granted with the approval of the commune and village authority and also based on the principals of MOLISA. Poor households are those with per capita income lower than 150,000VND monthly for urban areas and 100,000VND for rural areas (WB, 2003).

¹⁰ See the footnote (1)

Figure 3.7: Public expenditure on education



Source: MOET (2004)

These above achievements of the socio-economic conditions over the last decade are strong evidences to prove the important role of Vietnam government policies. The poor in rural areas have more chances to access to good education, health and modern technologies. This is a hope for improvement of human capital in order to capture employment under the structure change of the economy.

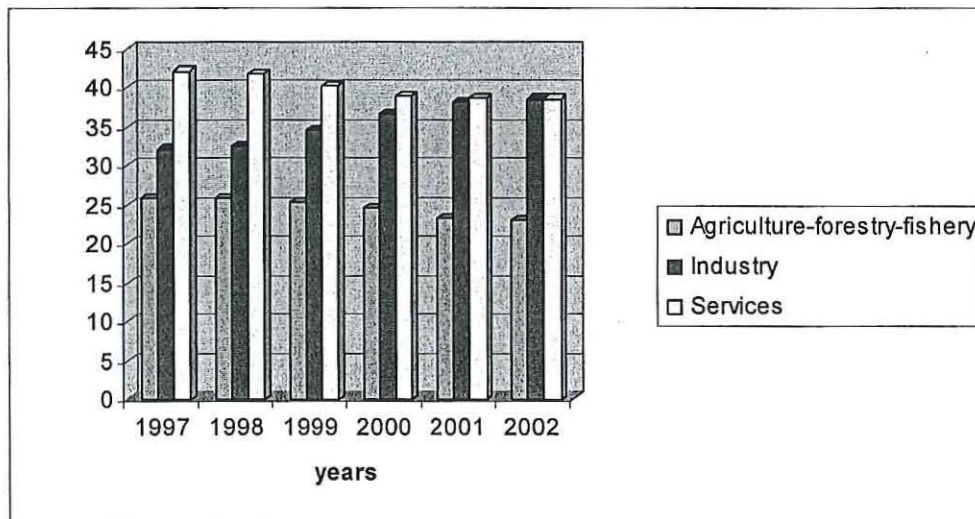
3.2 INCOME DIVERSIFICATION IN RURAL VIETNAM

Being one of the developing countries in the world with GDP per capita of about 400\$, Vietnam is implementing modernization and industrialization under the transition period from the centrally-planned economy into the market-oriented one and WTO integration. The economic indicators reveal the positive economic growth of over 7% in the recent years (see the figure 3.1). The positive change has also happened in rural regions especially around urban areas, industrial zones or in rural area with traditional production.

In general, the structure of the economic has changed dramatically since the Renovation (Doi moi) of 1986. Figure 3.8 providing the contribution of the sector to the GDP growth show a good trend of the economic structure in recent years which is common in developing countries. The role of agriculture has been less and less important compared to other sectors like industry and service. In 1997, agriculture contributed 25.8% of total GDP and in 2002 it was 23%. Instead, the contributions of

industry have increased from 32.1% to 38.5% in 1997 and 2002 respectively (see the figure 3.8).

Figure 3.8: Contribution to GDP by sectors



Source: JICA-MARD (2004)

However, 80% of the total population living in the rural areas where also 90% of poor households are residing, but only makes up 35% of national GDP. Meanwhile, the urban areas (mainly Hanoi and Ho Chi Minh cities) contribute 65% of GDP. With the inequality between the urban and rural areas, over 10 million unemployed and underemployed people mainly come from the rural areas, which can make the economy unsustainable. Moreover, it is not certain that agriculture can provide enough jobs for the rural areas. Therefore, developing non-farm employment is considered to be an effective way for creating more jobs for rural areas, which is consistent with the common trend of structural changes of a transitional economy (JICA-MARD,2004,3-3).

Moreover, in the context of WTO integration and free trade, Vietnam is facing many challenges like the fluctuation of the world market and rice production exceeding the domestic demands. Thus, Vietnam is required to make diversification into non-crop activities to take advantage of market access, to minimize risks and to maintain sustainable development in agriculture (including crop production and non-crop production: fishery, forestry, and aquaculture).

Meanwhile cultivated land in rural areas is limited, the development of the economy with expansion of roads, buildings and industrial zones lead to more limited

cultivated lands. For an example, the average cultivated land in Red River Delta has ranged from 350-450m² per head (MARD, 2004-cited by Nguyen, 2005:32). Additionally, increasing demands for income diversification also come from the idea that diversification can help poor households to reduce risks associated with fluctuation of income (Minot, 2003:55).

Within the changes of the economic structure, income diversification has expanded. Number of activities (income sources) at average of a household may tell us the trend of diversification over the time. Minot (2003:54) has divided household income sources into eight categories including crop income, livestock income, fisheries income, forestry income, non-farm enterprise income, wages, transfers and other income. With a simplest way of measuring diversification by counting number of income sources (activities) of a household the table 3.9 provides us information of income diversification by areas and by regions (in rural areas) in terms of number of activities in rural areas over the time (1993-2002). In general between 1993 and 2002, the average number of activities per household in both rural and urban areas of Vietnam has increased. However, these figures indicate that urban households have less diverse livelihoods than rural ones. For instant, in 1993 and in 1998 the number of activities in rural areas is 4.02 and 4.41 while these figures in urban areas are 2.90 and 2.91. However, the gap of income source number in the 2002 between urban areas and rural areas is not as high as in 1993 and 1998 (see the table 3.9)

Comparing the indicators at region level, as a whole the trend of diversification in almost all regions has increased. However, it is very interesting that the poorest region-Northern Uplands has more diverse income sources than the least poor region (South East). Minot (2003:55) found that it is consistent with the idea that the diverse income sources in rural areas is associated with poor households who diversify for reducing risks. In addition to this, this idea is confirmed again when considering the average number of income sources in Central Highlands. In 2002, this indicator has increased remarkably when compared to other rural regions. It is rational because farmers of this region have suffered from fall prices of coffee and tea which are main crops of this region. Facing the difficulties, farmers here had to diversify in order to reduce risks associated with fluctuation in income (see the table 3.9).

Table 3.10 provides more detailed information of income share from sold outputs of non-crop activities (fishery, livestock and forestry) and non-farm activities and services (non-farm enterprises and unearned income like remittance, gifts and other sources) in rural areas by regions. These figures also reveal the trend of diversification in rural areas in terms of income portion over the household income in 1998 and 2002. However, these figures measure income share from sold products of non-crop and non-farm activities thus they only refer to the portion of output for sale (in-cash), not mention the portion used for consumption (in kind).

Table 3.9: Number of activities (income sources) by areas and by rural regions

<i>Areas and regions</i>	<i>1993</i>	<i>1998</i>	<i>2002</i>
Vietnam	3.79	4.05	4.65
Urban	2.90	2.91	4.34
Rural	4.02	4.41	4.67
<i>Rural areas by regions</i>			
Northern Uplands	4.43	4.53	4.97
Red River Delta	4.16	4.50	4.37
North Central Coast	3.57	4.82	4.65
South Central Coast	3.74	4.08	4.49
Central Highlands	3.41	3.72	5.21
Southeast	3.36	3.92	4.36
Mekong River Delta	4.31	4.30	4.91

Source: Minot (2003:55)

As mentioned above, each region has its own socio-economic conditions to which its own trend of diversification is suitable. WB (2005, 34-50) has overviewed the disadvantages and advantages associated to the suitable tendency of diversification of each region for rural development as following. For the Northern Uplands (North East and North West), it has many difficulties like limitation in agricultural land (less than 15% of total land areas), sensitiveness with environment, poor infrastructure and geographic conditions, the region is not potential in developing in agricultural production. However, the low population can facilitate to meet regional demands. Moreover, the diversification of weather conditions, forest resources and biological conditions, the region has many advantages of biological tourism and agriculture.

For rural people in the Central Highland, they mainly focus on diversification from crop production into forestry and livestock. The weather conditions of the region are suitable for growing industrial crops like wooden trees and forestry products. In addition to this, the farming land is rather large, accounting for 24% and 40% of total land respectively and infrastructure condition is rather good when compared to the other regions. Therefore, farmers here recently have diversified their activities by increasing some high-value industrial commodities like coffee, cashew and pepper. However, previously they had to suffer from the fall of prices of some agriculture commodities.

Table 3.10: Share of sold output in non-crop and non-farm production by regions

<i>1998</i>	<i>Non-crop production (%)</i>	<i>Non-farm production (%)</i>
Red River Delta	26.85	54.89
North East	30.61	44.90
North West	31.17	23.47
North Central Coast	23.47	59.84
South Central Coast	23.91	44.93
Central Highlands	15.25	35.90
South East	11.08	50.53
Mekong River Delta	12.11	48.61
<i>2002</i>		
Red River Delta	30.12	61.56
North East	48.17	44.59
North West	46.58	37.63
North Central Coast	37.60	55.43
South Central Coast	33.39	54.55
Central Highlands	28.91	53.31
South East	13.09	53.45
Mekong River Delta	18.33	47.55

Source: Author's calculation based on VLSS 1997/98 and VHLSS 2002

In North Central Coast and South Central Coast, despite the limited land of farming (less than 10% of total) and fresh water in dry seasons these regions can develop aquaculture production thanks to their locations near coastal areas. In addition, the advantages of geographic and natural conditions like deep sea levels and good quality sea water may facilitate these regions to focus on tourism, shipping and other support services. Over these years, cities like Hue, Da Nang, Nha Trang and Phan Thiet have become important tourism spots in Vietnam. In addition to this, these regions play an important role in bridging two big cities including Hanoi and Ho Chi Minh.

Diversification is not only from the awareness of an individual, but also comes from the encouragement of macro policies for rural development. Recently, Vietnam's government has been developing village's trades which did not expand in the early 1990s. But now it is considered one of the national strategies for rural development. One of the advantages to develop the craft trade is that it can make use of labor force and natural resources of local regions. In addition, Vietnam's traditional handicraft products have dominated some international markets, leading to growth of export revenue. Therefore, apart from maintaining the old traditional craft trades, some new craft trades have been set up in some villages under the encouragement of the government. Latest, Ministry of Agriculture and Rural Development (MARD) has just agreed to launch a strategy of maintaining at least one craft trade per village.

Table 3.11: Craft villages and households participating crafts by regions in 2002

<i>Regions</i>	<i>Households participating in crafts</i>		<i>Numbers of craft villages</i>
	Number of households	% of households	
Red River Delta	532,195	15.6	914
North East	83,086	5.3	116
North West	26,840	7.2	247
North Central Coast	169,006	8.7	341
South Central Coast	82,532	7.7	87
Central Highlands	7,068	1.1	0
South East	189,389	14.5	101
Mekong River Delta	332,742	11.8	211
Total	1,422,858	10.8	2,017

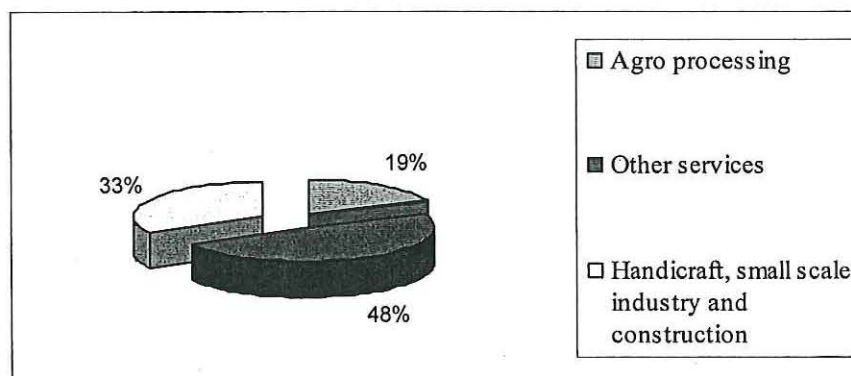
Source: JICA- MARD (2004)

Table 3.9 provides information on the number of households taking part in craft trades by regions. However, these traditional craft trades have most developed in the North areas like Bat Trang pottery, Van Phuc silk and wooden products in Dong Ky (Bac Ninh province) which attracts 60% of local and neighborhood labor force (JICA-MARD, 2004:3-9).

Besides, in rural areas of Vietnam many household's business or Small and Medium-Size enterprises (SMEs) have established for more employment and income for local people. These SMEs are those taking advantages of local inputs and lower

training and management cost. For instance, instead of raw products sold at low prices before, now some semi-processed products from small enterprises are available in domestic markets. At present, rural areas provide 40,500 SMEs, representing 33.75% of national SMEs, producing 100% traditional goods and generating 49% of total off farm jobs (Duong and Doan, 2004 –cited in Nguyen, 2005:36).

Figure 3.12: Rural SMEs by business activities in Vietnam, 2004



Source: Nguyen (2005:36) adapted by Duong and Doan (2004)

3.4 SOME FINDINGS

The above overview of poverty situation and living standards in Vietnam in recent years, especially in rural areas reveals a better off life since the Doi moi (Renovation). These achievements are proved to be due to supportive policies of the Vietnamese government. However, despite these support policies on poverty reduction, the demand of off-farm employment has increased under the structural change of the economy especially in rural areas where income sources are more diverse than urban areas. Currently, income diversification has been considered to be one the national strategies for agriculture and rural development in 2001-2010. Rural people seem to be more active and know how to diversify their income sources to improve the quality of life under the transition of economy from centrally-planned to market –oriented one. They no longer depend much on the division of labor and resources by the government as before.

CHAPTER 4

ESTIMATE MODEL AND DATA ANALYSIS

In this chapter, the approach of regression is used to evaluate how the income diversification in rural areas affects the living standard of the people which is measured by expenditure per capita. Income diversification is reflected by two indicators. These are the share of sold products from non-crop production and the share of sold products and services of non-farm activities. The variables are used to examine the hypothesis that income diversification have positive effect on welfare of the rural people. This hypothesis is tested with two data sets of VLSS 1997/98 and VHLSS 2002. For further exploration, the decomposition methodology of Blinder-Oaxaca (1973) is applied in order to test the variation of income diversification on the change of expenditure per capita over the time (1998-2002).

4.1 HOUSEHOLD CHARACTERISTICS

Before undertaking any regression analysis, it is useful to look at the descriptive statistics about all variables which will be examined in the model. Variables included in the model are divided into two groups of characteristics: household head's characteristics and household characteristics. Unfortunately, due to various indicators being unavailable in the data, it is impossible to include all potential determinants. For the household head's characteristics, the variables of the function include household head's age, household head's gender, and household head's education (completing primary education level). In terms of household characteristics, the key determinants in the equation are household size, region, ethnicity and income diversification. Table 4.1a summarizes all the characteristics of variables included in the model, which helps us with an overview of rural picture in Vietnam between 1998 and 2002. However, the samples are restricted from both surveys.

Almost all households in rural Vietnam are headed by male. In 1998, the number of household headed by male accounts for 75.4% in 1998, and 81.3% in 2002. Meanwhile the rate of female-headed households represents only 20% in the both two years.

The average age of household heads ranges from 47 to 48 years. In general, this level of age is old enough for good decisions of household production activities to improve the quality of the household.

Education is one of the most important factors to welfare and income diversification as well. By 2000, many provinces in Vietnam have officially been considered to achieve the national standard of primary education universalization. However, this achievement is different by areas, especially between the rural and the urban area. In 1998, the number of household heads finishing primary education in rural areas accounts for 53% meanwhile the figure in 2002 is 66.2%. This is a positive sign for improvement in human capital in rural Vietnam in recent years which may facilitate local people to access better employment and better-off life under the development of the economy.

When discussing about human capital, number of household members can not be ignored. Previously, family models with many generations were popular in Vietnam especially in rural areas. But after the Law of Land was launched in 1993¹¹, many households were separated to receive more land from land allocation. The average number of members per household was five persons in 1998 and four persons in 2002.

Ethnicity is a determinant of living standards of the rural people especially for such a multi-ethnic country as Vietnam. There are 53 ethnic groups all over Vietnam with different lifestyles and culture. The groups of Kinh and Chinese are considered to be majority groups, accounting for 82.4% of total population in 1998 and 78.3% in 2002. The population of minority ethnic groups represents only 17.6% and 21.7% in 1998 and 2002 respectively. In addition to this, some studies indicated that Vietnam's Kinh and Chinese majority groups are usually better off than minority groups (Walle and Gunewardena, 2001:1).

As an agricultural country, the population in rural areas is about over 75% of total population (GSO, 2005). However, it is different by regions. In general, the rural residents mainly locate in two big deltas of Vietnam: Red River Delta and Mekong River Delta, accounting for 19.88% and 18.66% of total rural population respectively.

¹¹ See the footnote (1)

In fact, these regions are two big wet-rice baskets providing main consumption of rice for the whole country.

To some extent, income diversification is understood as the shifting from crop production into non-crop activities (like fishery, forestry and aquaculture) and non-farm activities (including non-farm processing enterprise, other services: remittances, gifts and earning from interest and so on) (see the figure 2.2). In recent years, under the structural changes of the economy from centrally-planned economy into market-oriented one, especially under the implementation of Resolution No.5⁽¹²⁾, many households in rural Vietnam have diversified their income sources by shifting into some high-value off-farm activities in order to improve income, reduce risk and employment creation.

The section 2.2 mentioned about the reason to choose two indicators of measuring income diversification. These are the income share of sales of non-crop and income share of non-farm production over the total sales income of a household. In general, these indicators are relatively high. In 1998, the share income of sales of livestock, aquaculture and forestry (non-crop products) represents 20.8%, increasing to 32.3% in 2002. Farmers' income from selling non-farm products and services accounts for 49.4% of total household income in 1998 and 51.6% in 2002.

In fact, it is not really surprising that the rates of the income source from non-farm activities and non-crop production in the two years are high when compared to crop production. This fact can be explained as follows. Crop production is main production in rural areas of Vietnam. After harvesting, farming households used their outputs for two purposes: one for consumption, and the other for sales. The consumption portion for farming households in rural areas are usually higher thus the portion for sale is small when compared to sales of non-farm and non-crop production (including products from non-farm enterprises, sources from remittance, or from interests and so on)

In terms of welfare indicators, besides the poverty incidence presenting in the chapter 3, the real expenditure per capita which is adjusted towards the regional price index is applied in analyzing living standards in rural areas. Real consumption per

¹² Resolution No.5: Modernization and Industrialization in Rural Areas in 2001.

capita in rural Vietnam in 1998 is 2,426 thousand VND, mean while in 2002 up to 2,855 thousand VND in 2002. In addition, its value in log term which express the growth of real expenditure increases from 7.667 to 7.8279 thousand VND. In other words, the growth of real expenditure from 1998 to 2002 is 16%.

Table 4.1: Characteristics description and descriptive statistics of rural households in 1998 and 2002.

<i>Characteristics description</i>	<i>1998</i>		<i>2002</i>	
	Mean	Std.dv	Mean	Std.dv
<i>Household heads' characteristics</i>				
Household headed by male	0.813	0.390	0.754	0.431
Age of house head in years	46.933	13.152	48.000	14.694
Finishing primary education	0.530	0.499	0.662	0.473
<i>Household's characteristics</i>				
Log of number of household member	1.588	0.439	1.373	0.480
Number of household members	5.324	2.044	4.367	1.836
Ethnicity (Kinh and Chinese)	0.176	0.381	0.217	0.412
Resides in Red River Delta	0.199	0.399	0.172	0.377
Resides in Northern East Uplands	0.148	0.355	0.218	0.413
Resides in Northern West Uplands	0.028	0.166	0.049	0.215
Resides in North Central Coast	0.151	0.358	0.126	0.332
Resides in South Central Coast	0.091	0.287	0.073	0.260
Resides in Central Highlands	0.068	0.252	0.060	0.237
Resides in South East	0.157	0.364	0.088	0.284
Resides in Mekong River Delta	0.186	0.389	0.187	0.390
<i>Income share from sales of non-crop activities</i>	0.208	0.290	0.323	0.333
<i>Income share from sales of non-farm activities</i>	0.494	0.397	0.516	0.355
<i>Real expenditure per capita</i>	2426.9	1435.747	2855	1815.072
<i>Log expenditure per capita</i>	7.667	0.493	7.8279	0.4885

Source: Author's calculation based on the VLSS 1997/98 and VHLSS 2002

4.2. ESTIMATED RESULTS

4.2.1 Cross section analysis in 1998 and 2002

According to the section 2.2.1 which overviewed the methodology framework of analysis, the same reduced-models are applied in two years of 1998 and 2002 as following:

$$\ln y_i = \beta X_i + u_i \quad (1)$$

In this equation, y_i is real consumption per capita, and X_i is the vector of independent variables that influence consumption. The independent variables contain

household and community characteristics, thus the full equation for the model here is considered:

$$\ln pcexrl =$$

$$\beta_1 + \beta_2 sex + \beta_3 age + \beta_4 primary + \beta_5 \ln hhsz + \beta_6 diver1 + \beta_7 diver2 + \beta_8 ethnicity + \beta_9 regions$$

where:

-lnpcexrl (continuous):	Logarithm of annual per capita expenditure
-sex (dummy):	Household head's gender (1: female; 0: male)
-age (continuous):	Household head's age
-primary (dummy):	Household head completing primary degree and above (1: finished primary level or above; 0: have not finished primary level)
-lnhhsz (continuous):	Number of household members in logarithm
-diver1 (continuous):	Share of sold or bartered products of non-crop production (livestock, aquaculture, and forestry)
-diver2 (continuous):	Share of sold or bartered products and services of non-farm activities
-ethnicity (dummy):	Ethnicity groups of households (1= minority; 0= majority)
-regions (dummy):	1: Households in Red River Delta 2: Households in Northern east uplands 3: Households in Northern west uplands 4: Households in North Central Coast 5: Households in South Central Coast 6: Households in Central Highlands 7: Households in South east 8: Households in Mekong River Delta

Due to some observations are omitted, the samples of two models are restricted to 3825 household in 1998 and 22,536 in 2002. The data set has a limitation that observations in the first survey are not the same as those in the second one. Despite this, the results of the cross-sectional regression to some extent reflect the living standards of rural people in 1998 and 2002.

Results of regression models are provided in the table 4.2 with the respective value of R-square of 0.37 and 0.195 in 1998 and 2002. The value of R square indicates that all the variables included in the model explains 37% of the variation of the log of per capita expenditure for the model of 1998 and explains 19.5% of the variation of the log of annual per capita expenditure for the 2002 model.

Table 4.2: Regression results in 1998 and in 2002

<i>Variables</i>	<i>In 1998</i>		<i>In 2002</i>	
	Coef.	t-value	Coef.	t value
lnexpr				
Sex	0.0898618	4.4 *	0.0247653	1.7
age	0.0030782	4.51 *	-0.000351	-0.82
primary	0.2073423	18.6 *	0.0938352	2.55 *
lnhhsz	-0.489053	-19.35 *	-0.1319102	-12.02 *
ethnicity	-0.232805	-10.4 *	-0.2986841	-13.95 *
diver1	-0.038487	-1.28	-0.0651225	-2.28 **
diver2	0.1376066	6.33 *	0.2011906	8.09 *
R1	-0.4452891	-17.5 *	-0.2509111	-10.87 *
R2	-0.4477528	-16.51 *	-0.129645	-4.66 *
R3	-0.5441129	-11 *	-0.213379	-4.89 *
R4	-0.5218873	-20.09 *	-0.2241851	-8.09 *
R5	-0.4025646	-13.69 *	-0.344505	-12.47 *
R6	-0.3931801	-12.03 *	-0.2343476	-6.87 *
R7	Dropped			
R8	-0.3127069	-12.73 *	-0.1175572	-5.18 *
Cons	8.455769	161.33 *	8.158165	212.18 *
R-squared	0.3711		0.1956	
Observations	3825		22536	

*Notes: *, **, *** significant at 1%, 5% and 10% level respectively.*

Source: Author's calculation based on VLSS 1997/98 and VHLSS 2002

Theoretically, rural females are poorer than rural males (Ellis, 2000). But here it is very interesting that households headed by female increase the real per capita expenditure by 8% in 1998 when compared to households headed by male. However, in 2002 the influence is not significant, which means the gender of household head has no influence on real per capita expenditure of her/his household. This is consistent with the same idea by Vu (1999:162) who made her study based on the Vietnam Living Standard Survey in 1992-1993.

It is normally expected that when people get older they will have more knowledge and experience to earn more income, thus improving the living standards of their households (Le, 2004:21). In 1998, if all other variables are controlled, the age of household heads has a positive effect (+ 0.3%) on the living standard of his/her household members. According to the argument by Le (2004:21), the young people in rural areas do not have as many opportunities to be dynamic as those in urban areas, thus the return on the head's age is positive. However, the result of 2002 shows that the impact is insignificant. In other words, in 2002 the age of household head has no impact on the living standard of the household.

As mentioned above, education is a very important factor to determine the living condition of a household as well as the income diversification of the household. In both 1998 and 2002, the education of household heads has positive effect on real per capita household expenditure. Specifically, if the household heads finishing primary education level or above, the yearly real expenditure per capita rises by 20% in 1998 and by 9% in 2002 when compared to those not finishing this education level. However, the difference of coefficients of the two models reflects changes of returns to education in two years. The fact can be explained in the following way. Thanks to encouragement of program of primary education universalization by Ministry of Education in Vietnam, some tuition fee for primary level in rural areas have been reduced even free for some remote and mountainous areas. Therefore, the returns to education of household heads obtaining primary degree in 2002 is lower than that of 1998, although the rate of household head finishing primary level increased from 1998 to 2002 (see the table 4.1)

The number of household members can not be ignored when discussing human capital. The results of the two years provide a significant negative effect between household size on real per capita expenditure. If holding other variables constant, an additional member reduces real per capita expenditure by 48% in 1998 and 13% in 2002. It is clear that absorbing an additional member puts downward pressure on consumption per capita (Walle and Cratty, 2004:255). However, the variable of demographic component is expected to have ambiguous effects. If the additional member is a child, the per capita expenditure of the household can be reduced. But if an additional member is an adult, the labor force of the household increases, to some extent leading to more household income.

Many studies on poverty in Vietnam argued that ethnic minority groups who are mainly living in mountainous or remote areas are more likely to be poor than Vietnam's Kinh and Chinese majority (Walle and Gunewardena, 2001:1). And the results of two regression models provide the same idea that the real expenditure per capita of a household involving on ethnic minority groups is 23% (in 1998) and 29% (in 2002) less than that of a household belonging to majority groups (Kinh and Chinese groups).

Clearly, with different conditions of regions the living standards is also different across regions. As the variable of region is the dummy one ranging from 1 to 8 corresponding to the 8 regions across the country, the variable of South East region is omitted and thus considered as a basement. All the coefficients of 7 variables of region are negative. Particularly, if a household residing in Red River Delta, Northern east, Northern west, North Central Coast, Central highlands, and Mekong River Delta, the real expenditure per capita of the household reduces by 44.5%, 44.7%, 54.4%, 52.1%, 40.2% and 39.3% respectively when compared to that in South East (the basement) in 1998. Similarly, in 2002 the real expenditure of a resident in those regions decrease by 25.1%, 12.9%, 21.3%, 22.4%, 34.4% and 23% and 11.7% in comparison with that in South East. In fact, residents in the Southeast region are better off than other regions. Located near Ho Chi Minh city, the South east region is the most developed region in Vietnam. In the recent years, some non-agriculture production in the region has made big contribution for the GDP growth. The per capita income of the region is even 1.2 times higher than the average of the national level (WB, 2005).

The main concern of the paper is how income diversification (including diver1 and diver2) affects real per capita expenditure in rural Vietnam. The two indicators of diver1 and diver 2 reflecting the income diversification in rural Vietnam in 1998 and 2002 show some interesting results.

Diver1 - Income diversification into non-crop production (including livestock, aquaculture and forestry) has negative effect on per capita expenditure. Particularly, if holding other variables constant, an additional percent of sales from non-crop production decreases real annual per capita expenditure by 3.8% in 1998. However, in 2002, this effect is insignificant. In other words, in 2002 income diversification towards non-crop production has no impact on living standards of rural people. In fact, the negative effect to some extent is rational because some farming households in many

rural regions use the outputs of non-crop production (raised fish or shrimps) as inputs for semi-processing activities which are included in non-crop production. Therefore, the sales of non-crop production are gained from raw livestock, aquaculture and forestry products which are mainly used for small demands of local markets. In addition to this, in 2000 farmers in Vietnam had to suffer from the law suits of catfish and shrimps which led to the fall of some Vietnamese aquaculture product in the international market. This fact led to low returns of non-crop production (particularly in aquaculture).

By contrast, the second indicator – *diver2* which measures the income diversification towards non-farm production has significant positive effect on per capita expenditure at 1% level. If all other variables are constant, an additional percent in sales of non-farm products and services increase the real per capita expenditure by 13% in 1998 and by 20% in 2002. This reveals to some extent the positive impact of encouragement of Vietnamese government on diversification in rural areas over the time.

4.2.2 Decomposition of changes over time in 1998-2002

The previous section shows us the living standard of rural people over time has changed positively, the log of real expenditure per capita (at mean value) increased by 16% from 7.6669 thousand VND to 7.8278 thousand VND. Following the logical idea in the section 2.2, next we turn to next we turn to examine how the change of income diversification affects the growth of living standards in rural areas over times.

For this purpose, after undertaking the cross-sectional regression in two separate times the methodology of decomposition by Blinder - Oaxaca (1973) is applied. With this methodology, the change of per capita consumption at mean value between 1997/98 and 2002 will be decomposed into changes due to differences in means and differentials due to differences in parameters. The equation (3) in the section 2.2.2 performing the differential of two models is again shown more detailed as follows:

$$\overline{\ln(y_i^{2002})} - \overline{\ln(y_i^{1998})} = \underbrace{\beta^{2002} (\overline{X_i^{2002}} - \overline{X_i^{1998}})}_{\text{due to differences in means}} + \underbrace{(\beta^{2002} - \beta^{1998}) \overline{X_i^{1998}}}_{\text{due to differences in parameter}} \quad (3)$$

The first component of the right hand side of the (2) – the explained portion- is taken by multiplying the gap of the mean value of a variable (between 1998 and 2002) by the coefficient (return) of the variable in 2002. This component is seen to be the portion of the per capita expenditure difference explained by the changes in income diversification, household head's characteristics (age, sex, and education level), and other household's characteristics (like household size, region and ethnicity). The second component is explained by the differential of returns to these characteristics as well as by the differences in the intercept term. This can be taken by multiplying the difference of the coefficient of the variable (between 1998 and 2002) by the average value of that variable in 1998.

The results of decomposition of differential of log per capita expenditure between the years 1998 and 2002 are provided in the table 4.3. The positive growth of real per capita expenditure between 1998 and 2002 indicate the better-off life in rural areas of Vietnam. The differential of log expenditure per capita (0.16) is explained by two portions. In order to measure the contribution of two portions to the growth of expenditure per capita over the times, let consider the differential in expenditure per capita as 100%. Only about 21% of the observed long per capita expenditure differential between 1998 and 2002 is explained by differences in mean characteristics (0.033) while the remaining 79% may be attributed to higher returns to these characteristics (0.127).

Differentials due to differences in means:

+) Household's head characteristics: Over the time (from 1998 to 2002) the household head's characteristics including gender, age and education level have changed. Particularly, the rate of households headed by male decreased (from 0,813 to 0.754). Average age of household head increased (from 47 to 48) and the rate of household heads obtaining primary education level increased (0.53 to 0.662). All these changes (at mean value) of these characteristics have increased the real expenditure by 2.7% (0.027).

+) Household's characteristics: Similarly, the variation of the mean value of household's characteristics (including changes of residents between ethnic groups - majority and minority, and among 8 regions - see the table 4.1; and decline of number

of household members) over the time have increased real expenditure per capita by 0.9% (0.009).

+) Income diversification (including *diver1* and *diver2*): the increase in mean value of non-crop diversification reduces the expenditure per capita by 0.7%, but the increase of in means of non-farm diversification increases the expenditure per capita by 0.4%. This implies that the trend of shifting from crop production into non-crop activities leads to decline in welfare of rural people but tendency of shifting towards non-farm activities has contributed to the improvement of living standards of rural people over the time from 1998 to 2002. These results to some extent reveal how effective of the going-on government policies on encouragement of income generation have been over the time.

Differentials due to differences of parameters:

+) Household heads' characteristics: the changes of parameters of variables: (gender, sex and education levels) over the time leads to 34.3% decline of real expenditure per capita (-0.343). In other words, the differences of returns to these characteristics between 1998 and 2002 decrease the living standards of rural people.

+) Household's characteristics: differences of returns to household's characteristics including ethnicity, regions and household size from 1998 to 2002 increase the real expenditure by 74.2%.

+) Income diversification (*diver1* and *diver2*): the fall (from -0.038 to -0.065) of returns to income diversification (in terms of shifting non-crop production) over the time decreases the real expenditure per capita by 0.6%. While the increase of parameter of indicator *diver 2* - implying the shifting into non-farm production (from 0.137 to 0.201) increases the real expenditure per capita by 3.1%.

+) Intercept term: The variation of intercept term in 2 OLS regression models also makes contribution to change of real expenditure per capita over the time. The intercept terms describes the starting point of log of real expenditure per capita in the two models when the values of all variables in the two models equal to zero. This change makes the real expenditure per capita decrease by 29.8%.

Overall, the decomposition methodology helps us to know out of 16% of growth of real expenditure over the time (1998-2002) 12.7% is explained by the differences in

parameters and 3.3% is explained by the differences in means. It is noteworthy that the variation of mean and parameter of income diversification (diver1) decrease the real per capita expenditure by 0.7% and 0.6% respectively. By contrast, the differences of mean value and parameter of income diversification in terms of shifting towards non-farm production increase the real per capita expenditure 0.4% and 3.1%.

Table 4.3: Decomposition of difference of per capita expenditure in 1998-2002

<i>Characteristics</i>	<i>Difference value</i>
<i>Observed expenditure per capita differential</i>	0.16
<i>Differentials due to differences in parameters (OLS) $(\beta_{2002} - \beta_{1998})\overline{X}_{1998}$</i>	0.127
Of which explained by	
- Household heads' characteristics (age, education level and sex)	-0.343
- Non-crop diversification	-0.006
- Non-farm diversification	0.031
- Household's characteristics (region, household size and ethnicity)	0.742
- Intercept term	-0.298
<i>Differentials due to differences in means (OLS) $(\overline{X}_{2002} - \overline{X}_{1998})\beta_{2002}$</i>	0.033
Of which explained by	
- Household head characteristics (age, sex, and education)	0.027
- Non-crop diversification	-0.007
- Non-farm diversification	0.004
- Household characteristics (region, household size and ethnicity)	0.009
- Intercept term	0

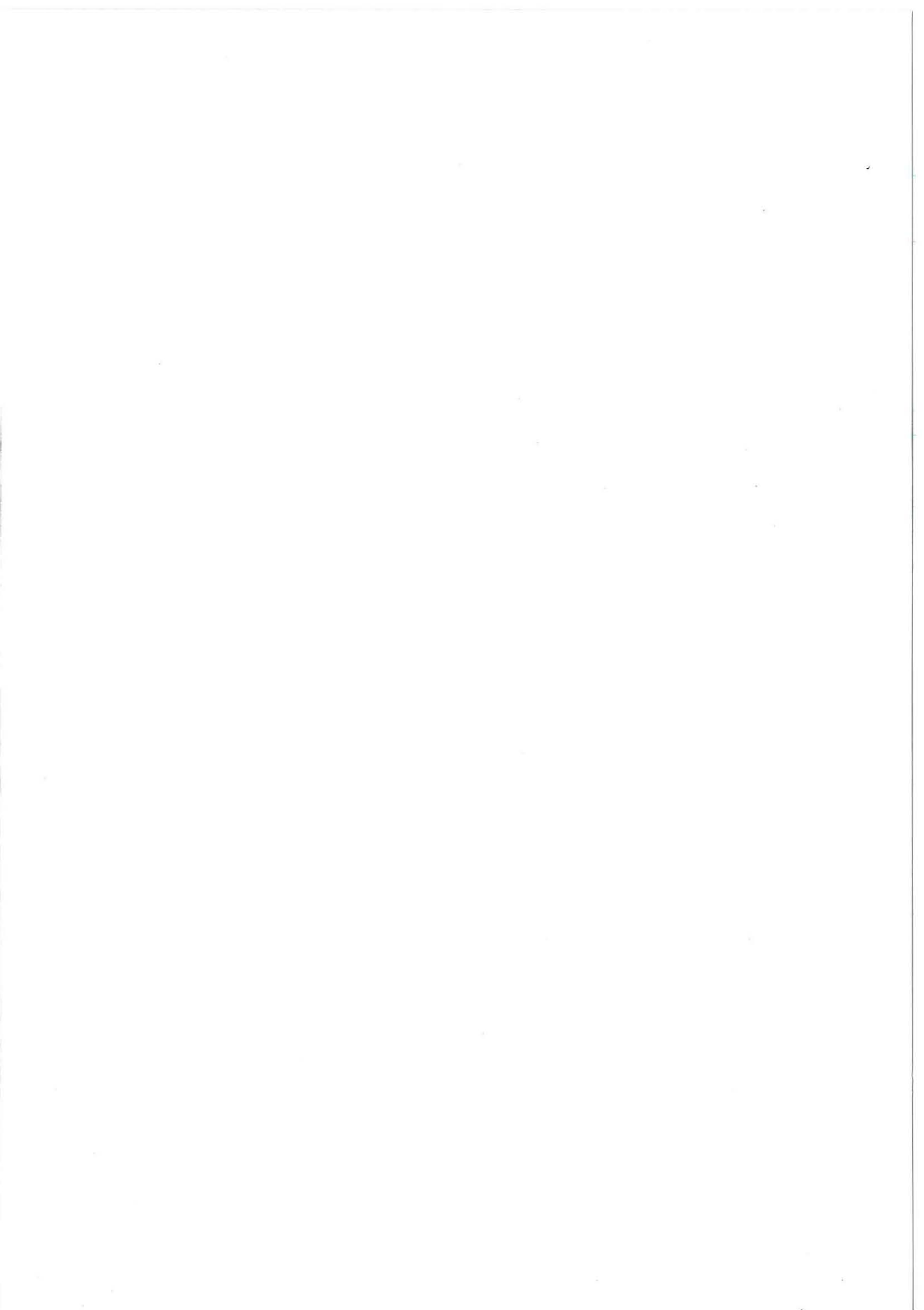
Source: Author's calculation based on VLSS 1998 and VHLSS 2002

4.3. SOME FINDINGS

In short, based on the two data sets of VLSS 1998 and VHLSS 2002, the cross-section analysis has implemented. The analysis points that there exist positive correlation between the log of real per capita expenditure and some independent variables included in the model (like gender, age and education level of household heads; and non-farm diversification). However, some characteristics like the indicator of

non-crop diversification, region and ethnicity have negative impact on living standards of rural people of Vietnam.

It is not enough if only looking at the cross-section analysis for the examination on the income diversification on poverty. Thus the methodology of decomposition by Blinder-Oaxaca (1973) helps to examine the effect of the changes in income diversification on the growth of living standards of the rural people in Vietnam over the time. Noticeably, the variation of income diversification as for shifting from crop production into non-crop production (both changes in means and parameters) decrease the living standards of rural people. But the differences in both means and parameters of income diversification (shifting from on-farm production into non-farm production) increase the living standards of rural people.



CHAPTER 5

CONCLUSION AND POLICY IMPLICATION

Targeting to the rural development through income diversification seems to be a common topic in many developing countries including Vietnam. However, concerning income diversification through sustainable poverty reduction is still limited. Thus, the paper aims at answering the question of what is relationship between income diversification and quality of life of household in rural areas of Vietnam, especially in 1998-2002. To answer this question, the OLS regression model and decomposition methodology of Blinder-Oaxaca (1973) are applied through the two data sets of VLSS 1997/98 and VHLSS 2002 VLSS. From the analysis and information of the paper, some conclusions are drawn as follows:

5.1 CONCLUSIONS

Firstly, over the decades Vietnam has gained many achievements in both economic and social conditions. Together with economic growth, the poverty rate of Vietnam has reduced rapidly, public services (education, health services and infrastructures and so on) have improved. Specially, this achievement also benefit rural population (70% of total population; 90% of total poverty population) despite inequality still exists between urban areas and rural areas.

Secondly, under the transition of economy from the centrally-planned economy into the market- oriented one, Vietnam's rural people began to be more active to diversify their income resources for income growth and better living conditions. They no longer much depend on requirements and allocation of resources by the government. Many Small and Medium Enterprises (SMEs) and trade villages have been set up for more employment and income sources in rural areas.

Thirdly, the empirical analysis of the paper helps to provide the information on the relationship between income diversification and wellbeing in rural areas in the years 1998 and 2002. The cross-sectional analysis targets to determinants of poverty (household expenditure per capita). Regression results show that there are some positive relationships between real expenditure per capita and some characteristics like income

diversification in terms of shifting to non-farm production (non-farm enterprises and unearned income sources like interest, remittances and so on); age of household heads, household belonging to majority ethnic groups, higher education achievement of household heads. However, there are also some negative effects of some characteristics like small household size, income diversification in terms of shifting towards non-crop production.

Fourthly, the decomposition of the changes of expenditure over the time reveals the positive effect of trend of diversification into non farm production but negative effect of trend of diversification into non-crop activities. This to some extent reflects the effect of going-on policies for income generation in rural areas has positive impact on poverty reduction in rural areas.

Finally, there are some limitations in the paper although many efforts have been made. Because of limited data sets, the measurement of income diversification does not reflect clearly the real output of non-crop production (fishery, forestry and aquaculture) and non-farm production (off-farm enterprises and unearned income sources: interests, remittances, gift and others). In some farming households, outputs of non-crop production are used as inputs of non-farm production and thus these outputs of non-crop production are included in sold outputs of non-farm production. In addition, the two data sets are not really corresponding due to different survey methodologies. Some information in the first survey is not available in the second one. Moreover, observations in the first survey are not the same as those in the second one. Therefore, assessment of growth of living condition and income diversification over the time is not really concrete. Furthermore, due to limitation of information, data and time, the paper has not yet mentioned the negative effects of income diversification like gender, inequality in income distribution. These black holes are left for further study.

5.2 POLICY IMPLICATIONS

These findings of the paper have important possible implications for the decisions on poverty and income diversification in rural areas of Vietnam especially under the Resolution No.5 which targets to industrialization and modernization in rural development.

Firstly, the results and analysis of the paper about living standards in rural areas in the years 1998 and 2002 have given some implications for poverty reduction as follows:

- Education is very important for improvement of human capital in rural areas for better employment under the competitiveness of labor market. Although some support policies on education have launched, the poor still have burdens in accessing education services because in fact besides tuition fee the poor have to pay other extra fee for education like new books, uniforms and extra fee classes. Therefore, some unnecessary fee for education should be cut down especially for the mountainous and remote areas.

- Another public services should be paid attention to is health services for poverty reduction. A policy to develop free health insurance is a way to pursue. However, decentralization and private sector's participation should be applied. This helps to increase the pressure on implementation.

- The inequality between minority ethnic groups and majority groups still is a current problem. The inequality may reduce by facilitating minorities to access markets, access higher education.

Secondly, the results of the paper have shown that income diversification has positive impact on poverty reduction and the current trend of income diversification in rural areas seems to be good way out of poverty. Therefore, some new policies for encouraging income diversification should be launched and the current ones should be improved:

- Farming products recently tend to be influenced by the fluctuation of markets. Thus, market information network should be updated for farmers and private sectors to reduce risks due to fluctuation of markets.

- Although some training programs for constructing new production models have been implemented in some regions, the poor should be considered to participate in the program. The power and participation in making decisions should be encouraged among the poor and peasants.

- Traditional products are currently developing but their quality is still low. Thus, village crafts should be invested to improve the quality so that the products can penetrate in big markets.

- Authorities at local levels should be active, they should know clearly about their local condition, in turns know what production models are suitable for their location.

- Credits loan policy should target equally objectives not only household heads who usually are men in rural areas. Thus, woman can make loans and launch their own business which is suitable with their capacity.

These are some policy implications drawn from analysis and information provided by the paper. Issuing a policy is not easy and implementing a policy is even more difficult. Thus, these policy implications in some cases are not easy to implement but hopefully it somehow helps policy-makers to have new ideas in issuing a new policy in poverty reduction and income diversification encouragement in rural areas of Vietnam.

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