Risk and Vulnerability in Thailand: A Quantitative and Qualitative Assessment[*]

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Abstract

To eradicate poverty, one needs to understand the dynamics of poverty as well as vulnerability to poverty. Specifically, people move between poor and non-poor states. Under a specific policy intervention, the poor could be able to exit the poor state. But, another policy intervention could make the non-poor who are vulnerable to poverty to enter the poor state. We use the household Socio-Economic Survey (SES) to assess household vulnerability to poverty in Thailand between 2002 and 2004 and uses qualitative method to assess social protection institution for vulnerability. From the SES, approximately 19.1 percent of the rural households were transient poor and 9.4 percent are chronic poor. Using the same methodology and definition of vulnerability to poverty as Bidani and Richter (2001) and Chaudhuri et al. (2002), we find that approximately 44.0 and 51.8 percent of rural households were vulnerability to poverty in 2002 or 2004. Approximately 35.0 percent were vulnerability to poverty in both years. These households were more likely to be male-headed households, or own-account or economically inactive households, live in the north or northeast regions or be headed by lower than upper elementary educated persons. Using a qualitative method, we find that middle income classes among the Thai view vulnerability concept in a broader view than the vulnerability to poverty. Risks they exposed are predictable and manageable. But, the main problems are they do not know how to manage or cannot get access to existing institutions or cannot get involve in public policy decision to protect them from predictable risks. Under the social protection mechanisms provided by the current formal institutions, we find that such institutions had used a high level of discretion when allocating cash and in-kind benefits and repeat receipts of cash and in-kind benefits was not uncommon.

[*] The finding of this report is based on two research projects; "Risk and Vulnerability Assessment: Measuring Deprivation and Vulnerability" and "Risk and Vulnerability Assessment: Thailand Social Protection Institutional Assessment." The author and a TDRI research team conducted the projects for the Ministry of Labor, Ministry of Social Development and Human Security and the World Bank in 2005. The author thanks Ammar Siamwalla and Niramon Sutummakit for their involvement and contribution in the projects, Kaspar Richter for sharing a draft paper and programs to estimate vulnerability and Community Organization Development Institute (CODI) for providing assistance on focus group discussion. The author alone is responsible for any errors in this report.

I. Introduction

Analysis of poverty and policies toward the poor in Thailand have traditionally been based on the definition (or more accurately the metric) of poverty as defined by the National Economic and Social Development Board. This starts out with the definition of the poverty line as the minimum level of income that will provide a person or a household with an adequate standard of living, and then uses data from the Socio-Economic Surveys that are conducted regularly every other year to count the number of persons whose incomes (or total expenditures) fall short of the poverty line. In the literature this metric sometimes called the head-count index to distinguish it from other, theoretically more sophisticated measures.

While this metric has been helpful in obtaining a broad picture of the poverty problem in Thailand, for example to identify where most of the poor people live, the household characteristics of the poor, their occupations, and the like. Policies that target those areas or economic sectors or social problems which give rise to poverty have then been devised accordingly. However, when attempts are made to implement policy measures that are to be targeted directly at the level of households or individuals, such tests are inadequate.

The most important shortcoming of the poverty-line test as a means of identifying the poor is that it presents a static picture based on income from a single year. If incomes are stable, then such a static picture would not be inaccurate, but incomes of the poor in Thailand are far from stable. Those deemed as poor in one year may be so because of some temporary bout of misfortune, and may not be so the next year. More importantly, households that are not classified as poor now may become poor in the next round of the surveys.[1]

Movements of household incomes (and expenditures) are due to many factors, some of which are somewhat predictable. Thus, it is generally supposed that as a person gets older, he or she acquires a greater ability to earn income, but at higher ages, that ability may begin to decline. Thus over a lifetime, there is a roughly predictable fluctuations of incomes. Within a given year, households also have seasonal variations in incomes and expenditures that coincide with such things as harvests or the opening of the school year.[2]

These fluctuations are roughly predictable. “Roughly”, because superimposed on these fluctuations are income movements that are unpredictable and arise from risks that accompany the economies of almost all households. Once risks are considered, the concept of vulnerability can then be defined as the probability that a household will become poor in the future, regardless of whether it is poor now.

Although this paper is not about deprivation, its definition follows so naturally from the concept of vulnerability that it is useful to present it now. The deprived are people who are poor now and who find it highly improbable to escape from poverty in the future. The improbability could arise from the low probability of a run of good luck (positive risks) or more importantly, through a lack of capability for them to undertake action to move out of poverty. Thus a person who is physically or mentally incapacitated, and without financial resources, would be classified as deprived.

The exercise that follows is an attempt to flesh out the above conceptual framework with empirical analysis, both qualitative and quantitative, of the risk and vulnerability situation in Thailand.

Section II of the study shows qualitative assessment of risk and vulnerability in Thailand. The assessment is based on three focus group discussions conducted in three provinces in October

[1] Even though this metric of poverty is unsatisfactory on account of its single-period focus, the discussion below will use the terms “poverty” or “poor” using this metric as the defining term.

[2] Strictly speaking, the measure of income used in categorizing the poor should be those that incorporate such fluctuations. Such measures of incomes are called “permanent incomes”.

2005. Section III is a social protection institution assessment. This study focuses on social insurance for private employees, health insurance, and social assistance. Section IV studies how to measure household's vulnerability to poverty quantitatively. The quantitative assessment of household vulnerability shows that vulnerability is not less important than poverty. To eradicate poverty, we must reduce the household vulnerability as well. Vulnerable households have a high probability to be poor in the future. Even though we can help the "today" poor move out of poverty, there will certainly be more of the "tomorrow" poor waiting ahead, if we ignore vulnerability.

II. Risk and Vulnerability in the Thai Context—A Qualitative Assessment

Qualitative assessment for risk and vulnerability in Thailand was conducted in October 2005. Various groups of people including youths, elderly, disables, workers from different careers, monks, government employees and community's leaders were invited to express their views on risks they and their communities expose, how to manage various types of risks and how they define vulnerability. The focus group discussion was held in three provinces in three different regions; Nonthaburi in central region, Chiang Mai in northern region, and Khon Kaen in northeastern region.[3] About twenty people participated in each group discussion.

Participants in the discussion defined risks they and their communities are exposed to as uncertainty, instability, unpredictability, and unsafe situation, i.e. illness, accident, robbery, drought, teenager and family crisis, and social and culture illness. The participants defined vulnerability in a broad dimension as shown in the following Table. They add that risks and vulnerability are inter-related. Risks can cause people's vulnerability. Meanwhile, people with high level of vulnerability might have to expose to a higher rate or level of risks.

From the focus group discussion, we group their views of risks into two categories; 1) risks caused by nature and 2) risks caused by human behaviour. The latter is of more serious concern, particularly, risks posed by children and youth. According to the risks causing household and community vulnerability experienced by participants in the three provinces in Tables 2.1 and 2.2, they show that many risks are predictable and can be managed and some are idiosyncratic. The main problems are households do not know how to manage or cannot get access to existing institutions or cannot get involve in public policy decision to protect them from predictable risks.

Table 2.1 Risk and Vulnerability at the Individual Level

Type of Risk Causing Vulnerability	Experiences
Natural disaster	▪ Casualties and asset losses from flood or land slide.
Accidents	▪ Disability from road accidents. For example, there are many accidents related to motorcycle gangs in Nonthaburi that cause disability and death.
Illness	▪ Use of pesticide and chemical fertilizer. ▪ Health hazard from food ▪ Falsely labeled organic vegetables. ▪ Pesticide and chemical entering rivers or other reservoirs. ▪ AIDS, leptospirosis, bird flu, allergy rash causing loss of income and life. ▪ AIDS causing of family separation and child abandonment. ▪ Loss of income from work due to illness. ▪ Low standard of public healthcare.
Aging	▪ Taking wrong medicine due to visibility problems. ▪ Mentally suffer from being abandoned.

[3] With the time constraint, we could not include more provinces in the focus group discussion.

Type of Risk Causing Vulnerability	Experiences
	▪ Expenses greater than income. ▪ Being abandoned, particularly the elderly that have insufficient assets and incapable of attending elderly centers. ▪ Chronic illness. ▪ Insufficient cash to advance medical care payment when using healthcare benefit under the government employee scheme. ▪ Lack of personal ID card causes ineligibility for free universal healthcare service for elderly.
Social risk for youths	▪ Having to study away from home or having cell phone generates greater chance to engage in dangerous activities (gangster behavior, sexual activities, drugs, teenage pregnancy, abortion, school drop out and motorcycle racing), which makes it more likely for them or their parents to fall into vulnerable group. ▪ Television and friends having negative influence on youth behaviour. ▪ Irresponsible behaviour leading to unemployment and criminality.
Social risk for families	▪ Domestic violence. ▪ Crowded houses causing mental illness and in some cases abuse of biological or step-daughters. ▪ Being raped at home, school, office, and while traveling to school or work. ▪ No time for parenting, ▪ Getting drunk and fighting in front of children, ▪ Engaging in prostitution to earn more income. ▪ Lack of communication in the family causing youth to be more vulnerable to social problems. ▪ Cheated by friend, neighbor or gangster and unable to use justice systems. ▪ Children migrating with parents to various construction sites lack proper care and education, creating various problems, i.e., crime and pregnancy.
Risk for farmer	▪ Low or volatile production. ▪ Agriculture price fluctuation. ▪ Loss of land and Indebtedness.
Risks from government policy	Decentralization of social assistance for elderly and HIV infected persons causes access problems for the needy: ▪ Officials plant evidence by forcing drugs into people procession, causing loss of money and time to fight for justice. ▪ Cash assistance for elderly is not efficiently operated. Poor elderly do not receive the benefit, but non-poor elderly do. ▪ Local government dose not distribute cash assistance for HIV infected family efficiently.

Table 2.2 Risk and Vulnerability at the Community Level

Type of Risk Causing Vulnerability	Experiences
Natural disasters	▪ Home and asset damages due to flood and land slide. For instance, the flood in Nonthaburi destroying famous durian farms.
Hazardous environment	▪ Polluted river leaving toxic chemical residues in fishes. ▪ In Nonthaburi, a large garbage dump causes diarrhea, allergies, and polluted environment.
Risk from government policies	▪ Free Trade Agreement reduces competitiveness of Thai agricultural products. ▪ Expansion of residential area without good planning and regulation has caused a landslide, garbage problems, wide income gaps between the new and local residents. The local residents (mostly farmers) become more vulnerable to poverty after selling their property and losing their traditional occupation. ▪ Poor resource management leads to conflicts, i.e., land and water conflict. ▪ Lack of city planning causing floods and public land invasion. ▪ Polluted water from hotel and housing damages farm land. ▪ Dam building reduces quality of arable land. ▪ Bridge construction made 50 household homeless. ▪ Village Fund discourages informal saving cooperatives and encourages indebtedness of the household. ▪ Agriculture policies increase the indebtedness without returns. For example, government promoted farmers to grow cashew nut, bamboo, and raise Australian cow, these activities did not increase their income but increased debts. ▪ Poor resource management such as the use of water in the dam. Only small groups can take advantage of the dam. ▪ Policy to demolish traditional dams cause flood and agricultural damages. ▪ Centralized community forest policy limit the role of community to protect and preserve their community forest.

Faced with those risks, households usually ask for assistance from their family and community. Government assistance was more common when there was a covariate risks that affecting a large number of households. Risk management strategies the participants used to manage the risks they exposed are as follows.

<u>Informal Strategies</u>

- People in the community take charge in inspecting organic vegetables, learn about diseases, epidemic, garbage recycle and effects of alcohol beverage and drugs. They also support one another when facing with natural disasters.
- Farmers diversify their crops and emphasis on consumption control to increase income and reduce consumption.
- People in the community initiated saving cooperatives to alleviate indebtedness and exploitation from loan shark.
- Parents try to encourage neighbour watch to monitor youth behaviour and promote youth to have activities and networking to monitor their own group.
- HIV infected patients form groups to create activities and income. They support one another in many circumstances, for example, skill training and moral cultivation in temple.

<u>Formal Strategies</u>

- Government and local community try to promote activities for children and youth in the community.

- Local community cooperates with international organization to have shelter for HIV infected group.
- Government supports low income group in slump to have a permanent home in a new area.
- Government support cash assistance to those affected by flood or landslide. For example, 50 baht per Rai (0.395 Acres) was given to the family whose house was damaged by flood, and 150 baht per Rai was given to family whose fishery was flooded.

III. Social Protection Institution Assessment

The social protection mechanisms in the form of *ex-ante* social risk management mechanisms for Thai are social insurance and health insurance. These mechanisms cover healthcare, invalidity, death, old age, survivor, unemployment and child education benefits, and child allowances as shown in Table 3.1. These types of protection are administrated under different institutions. The Comptroller-General's Office administrates social protection programs for government employees. The Private School Teacher Welfare Fund (PSTWF) under the Ministry of Education administrates social protection programs for private school teachers. The Social Security Office (SSO) under Ministry of Labor administrates programs for private employee in non-agriculture sector. The Ministry of Public Health administrates the universal healthcare for people excluding government and private employees. Moreover, the social assistance programs in the form of *ex-post* risk management mechanisms are administrated by the Ministry of Social Development and Human Security.

Table 3.1 Social Protection Coverage by Types of Benefits

	Healthcare	Invalidity	Death, old age and survivor	Child allowance	Child education	Unemployment
Private employees in non-agriculture sector	√	√	√	√		√
Private school teachers	√	√	Only lump sum payment when retire	√	√	
Government employees	√	√	√	√	√	permanent employment
State enterprise employees	√	√	√	√	√	permanent employment
Private employees in agriculture sector	√					
Self-employed	√					
Other work cohorts	√					
People not in labour force	√					

Source: TDRI.

The following discussion includes the *ex-ante* and *ex-post* risk management mechanisms administrated by three ministries; Ministry of Labour, Ministry of Public Health and Ministry of Social Development and Human Security. The mechanisms under these three public institutions cover a large proportion of private employees, people in informal sector and the needy. The social protection mechanism for government and state enterprise employees is not a focus in this report since it covers a small group of workers who are lucky enough to get generous benefits.

Social Insurance for Private Employees: Ministry of Labour

Social Insurance benefits provided to private employees are under a contributory basis. Contribution from employer goes to the Workmen's Compensation Fund (WCF) and contribution from employee, employer and government goes to the Social Security Fund (SSF). The WCF was the first social insurance fund for the private employees found in 1974 under the announcement No. 103 of the Revolutionary Council in 1972. Its main objective is to provide social security to workers who are injured or sick due to work-related activities.

The SSF was setup under the Social Security Act B.E. 2533 (1990). It provides a wider range of non-work related benefits than the WCF, i.e. sickness, maternity, invalidity, death, old-age and unemployment benefits including child allowance, to the insured persons. Prior to 2002, when the Social Security Act was enforced to private enterprises employing ten or more workers, many employees were not covered by the social insurance system as shown in Table 3.2. Less than half of employees in the northeastern and northern regions were covered under the social insurance system. Figure 3.1 shows that among the insured employees in 2001 more than 50 percent worked in the firms with 100 and more workers or in the manufacturing industry.

Table 3.2 Number of Insured Employees in Private Enterprises by Region in 2004

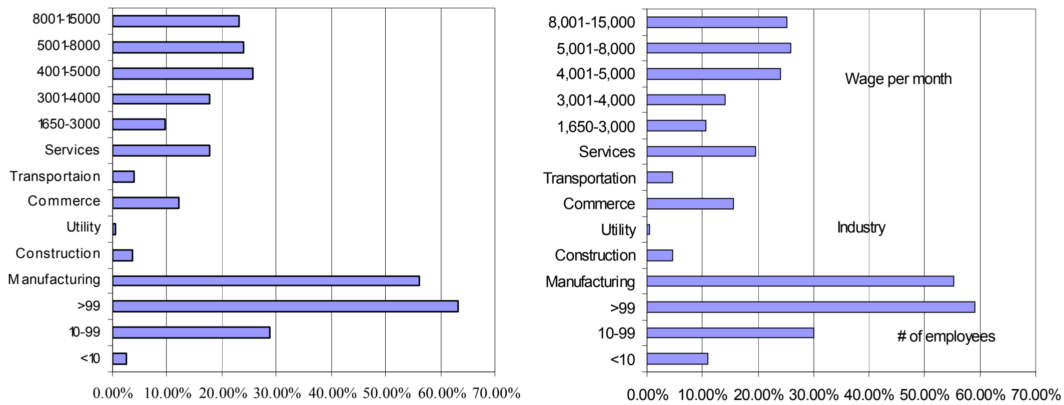
	Actual number	Expected number	Percentage of coverage
Bangkok	2,762,888	2,849,484	96.96
Central	3,420,018	3,563,712	95.97
Northeast	566,648	2,129,615	26.61
North	541,775	1,563,702	34.65
South	540,134	1,064,200	50.75
Total	7,831,463	11,170,713	70.11

Source: [1]Social Security Office and [2]Labour Force Survey (LFS).
Note: The expected number refers to the number of employers and employees in non-agriculture sector who receive wages and work in enterprises with 10 and more workers in 2001 and in the enterprises at all firm sizes in 2004.

Employees covered by social insurance are young people and have low average income. In 2001, approximately 56 percent were in age group 15-30 (Figure 3.2). This has made the average expenditure on healthcare per employee of the Social Security Fund low. In addition, approximately 53 percent earned up to 5,000 Baht per month. It can be said that their average daily earnings were about the same as the daily official minimum wage.

Figure 3.1 Insured Employees by Firm Size, Industry, and Wages in 2001

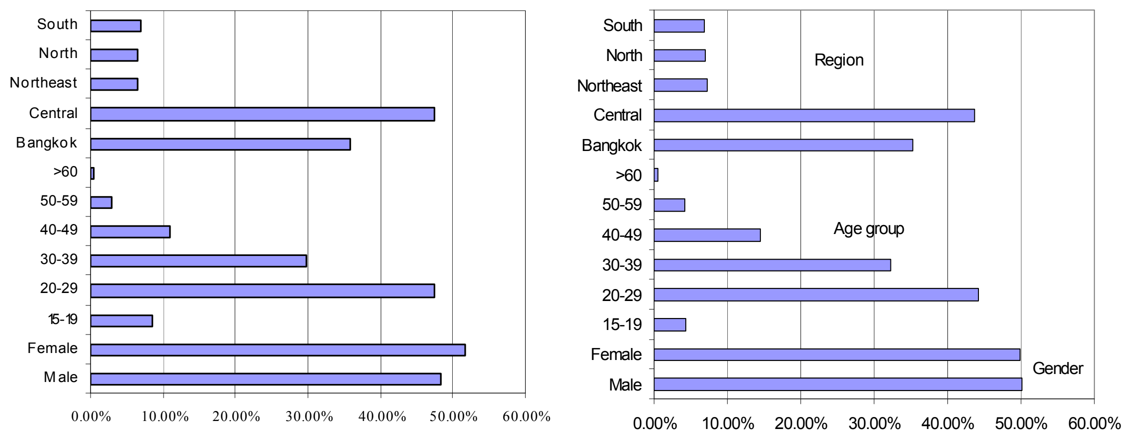
2001 2004



Source: SSO.

Figure 3.2 Insured Employees by Gender, Age Group and Region

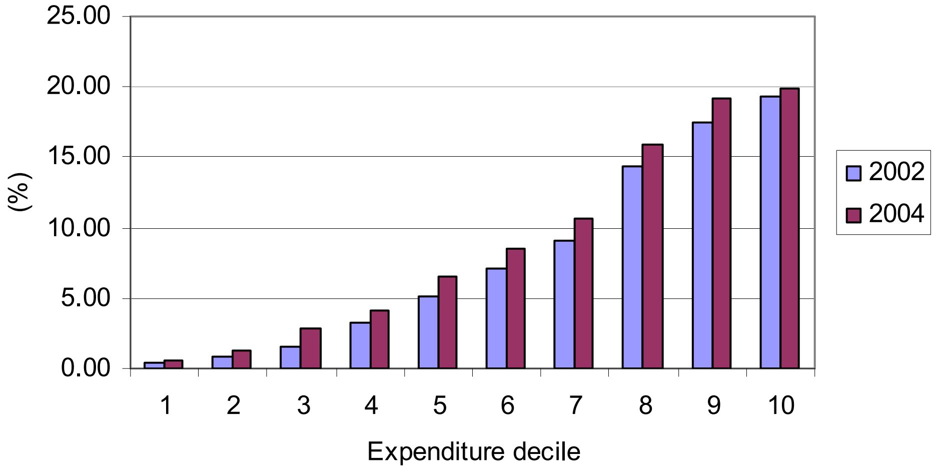
2001 2004



Source: SSO.

Figure 3.3 shows the benefit incidence of social insurance in 2002 and 2004. Approximately 19 and 21 percent of households have their members covered by social insurance in 2002 and 2004. The coverage of social insurance is higher among the rich than the poor. Less than ten percent of population in the sixth and lower deciles, have been insured under the public social insurance system. The pattern is similar between 2002 and 2004.

Figure 3.3 Proportion of People with Social Insurance by Expenditure Decile



Source: SES.

Health Insurance: Ministry of Public Health

Thailand has developed three main public health insurance. The first scheme covers government officials and dependents (Civil Servants Medical Benefit Scheme or CSMBS) and state enterprise employees and dependents. The CSMBS is the first subsidized healthcare coverage that is known to the public as a generous attractive fringe benefit to government officials. The CSMBS is financed from the government's budget through the Comptroller-General's Office. The healthcare coverage for state enterprise employees is comparatively not inferior to the CSMBS. Each state enterprise has its own package of healthcare benefits.

The second scheme covers private employees in the non-agriculture sector as described in the previous sub-section. The third scheme is the Universal Healthcare Coverage (UC), used to be called "30 Baht scheme". It covers Thai residents who are not covered by the first two schemes. The name "30 Baht" was derived from the user fee of Baht 30 per visit, either outpatient or inpatient hospital care[4]. Prior to 2001 (when the 30-Baht scheme was launched), low-income household and disadvantaged people received the health insurance through the Health Welfare Program for the Poor and Disadvantaged (or free healthcare) and the voluntary health insurance.

The Socio-Economic Survey (SES) showed that the coverage of the Health Welfare Program or free healthcare was very low (Table 3.3). In 1999-2000, approximately 10 percent of households or 1.7 million households were covered by the free healthcare; the program that targeted to the poor. Approximately 21 percent of population in the lowest expenditure quintile were covered by free healthcare. Most of the free healthcare cardholders lived in the Northeast and North. Less than one percent of people in Bangkok were covered.

After the implementation of the 30-Baht scheme, the proportion of people with health insurance in Thailand has been improving. Approximately 85 percent of population in the lowest expenditure decile got access to 30-Baht scheme in 2002 (Figure 3.4). This proportion increased to 95 percent in 2004. As shown in Figure 3.4, the incidence of public expenditure on 30-Baht scheme is progressive. Population in the higher expenditure decile are less likely to use 30-Baht health insurance.

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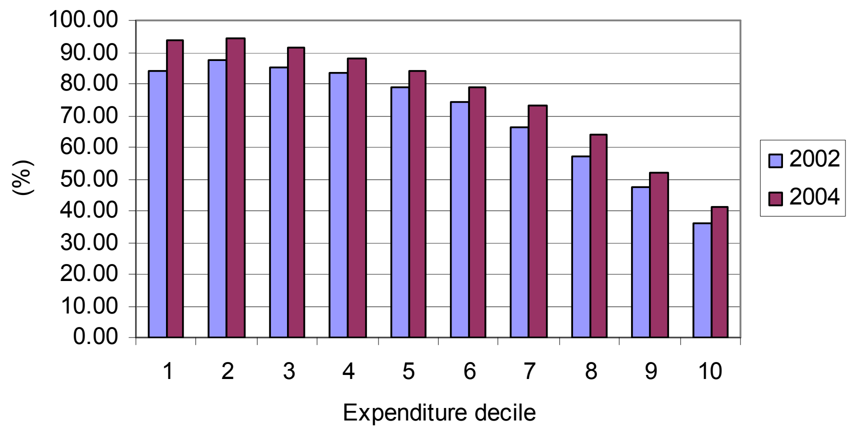
[4] The 30 Baht fee was eliminated in 2006.

Table 3.3 Household with Free Healthcare Card

	Household with free healthcare card 1999		Household with free healthcare card 2000	
	% of row	% of total	% of row	% of total
By region				
- Bangkok and metropolis	0.15	0.03	0.17	0.02
- Central	6.12	1.04	6.80	1.62
- Northeast	15.35	4.73	13.11	4.08
- North	12.84	2.49	15.35	2.93
- South	7.17	0.88	11.58	1.45
By expenditure Quintile				
- Q1 (lowest)	20.34	3.06	21.45	3.18
- Q2	15.16	2.70	16.96	3.06
- Q3	11.55	2.27	11.08	2.18
- Q4	4.65	0.98	6.42	1.38
- Q5 (highest)	0.64	0.17	1.19	0.31
Total	9.18		10.10	

Source: SES 2000.

Figure 3.4 Proportion of People with 30-Baht UC



Source: SES.

The healthcare coverage could be improved after an implementation of the 30-Baht Universal Healthcare Coverage. As shown in Chandoevwit (2005), there were approximately 3 million people not covered by any public health insurance. The excluded people are expected to be the rich who could afford expensive healthcare treatment or private health insurance and the poor who had poor information and access to healthcare centres. It is the later group that needs more attention from the policy makers.

Social Assistance: Ministry of Social Development and Human Security

Social assistance programs in Thailand were initiated in 1941, one year after an establishment of the Department of Public Welfare. The program provided assistance to homeless, panhandler and people suffered from natural disaster and terrorism. The coverage of assistance, later, had been extended to cover children, disadvantaged women, elderly, disabled individuals, families and minorities. The minorities are tribes that live in the mountainous areas. The benefits provided are cash benefits, in-kind benefits, and loans.

The Department of Public Welfare who responded for many social assistance programs was under the ministry of interior. In 1994, it was restructured to be under the Ministry of Labour and Social Welfare. And later, in 2002, it transformed into a new ministry, the Ministry of Social Development and Human Security (MSDHS).

The Ministry of Social Development and Human Security has provincial offices in every province and social assistance centre in some provinces, e.g. Social Assistance Centre for children aged below seven in Nonthaburi and Khon Kaen Provinces. The main obligation of the Provincial Social Development and Human Security Centre (PSDHS) is to protect the vulnerable and disadvantaged people defined under fourteen Acts, e.g. Child Protection Act and Disability Act. The provincial offices also provide in-kind and cash assistance to clients in their own provinces.

Table 3.4 shows target groups who received cash benefits in 1998-2003. Children in family with HIV infected parents received cash assistance; families with one child receive 1,000-2,000 Baht and families with more than one child may receive up to 3,000 Baht. In 1998, only 287 families received the cash benefits, increased to 2,101 families in 2003. Cash assistance from the PSDHS is a one-time assistance. Even though, by regulation, a family can get cash benefit up to three times in a year, it is very rare that the family gets the cash benefit up to the limit. It is not that repeat use of welfare is not happening in Thailand, but it is because of the budget constraint. Repeat users of welfare are more likely to receive in-kind benefits (e.g. rice, dry food, and other daily necessary household products).

The possibility for the poor and needy to receive cash benefits from the social assistance programs has been low because the number of beneficiaries has been capped or determined by the government budget. To get the cash benefit, the social assistance recipients have to apply for the benefits at the Tambon Administration Office (TAO)[5] for people live in the rural area or at the Provincial Social Development and Human Security Office for people live in the urban area. The TAO officials review the application and forward the case to the provincial office. The applicants receive in-kind or cash benefits depending upon availability of the budget and PSDHS's discretion. In most case, the applicants receive in-kind benefits, e.g. rice and dry food, and various kinds of consultation. The applicants who are viewed as needy by the PSDHS's discretion receive the cash benefit. In many cases, the applicants who viewed as needy had to wait for benefit in the next fiscal year.

From an interview to a PSDHS officer, it is interesting to learn that there is seasonal pattern for social assistance application. In June when a new academic year starts, many poor families go to the PSDHS and request for social assistance. In addition, in the northeastern region, the number of homeless and panhandler increases in December. This is because every province taking-turn in organizing an annual fairs.[6] Homeless and panhandler learn about the timing of the fairs. They migrate out from the province where the annual fair just ended to the province where the annual fair has just started. Nobody knows about their whereabouts in the other time of the year.

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[5] The level of official administration in Thailand is Mooban (village), Tambon (city), Amphoe (county), and Changwat (province).

[6] The fair is sometimes called silk fair as there are many local silk shops in the fair. The fair is organized in the last month of the year because it is the period that rural people finish harvesting

Table 3.4 Number of Recipients By Type of Cash Benefits

Benefits	1998	1999	2000	2001	2003
Children: 1,000-3,000 Baht for children whose parents are HIV infected.	287 (n.a.)	289 (n.a.)	1,289 (1.5)	1,114 (1.7)	2,101 (2.3)
Disadvantaged women: 5,000 Baht for their investment.	1,236 (6.2)	1,200 (6.0)	1,211 (6.0)	1,240 (6.0)	1,200
Seniors: monthly allowance 200-300 Baht.	318,000 (763.2)	400,000 (1,101.6)	400,000 (1,440.0)	400,000 (1,440.0)	400,000 (1,400.0)
Disabled individuals: monthly allowance 500 Baht.	15,000 (90.0)	15,000 (90.0)	15,000 (90.0)	20,000 (120.0)	25,000
Families in need:					
- cash 2,000 Baht to families whose breadwinner was death, lose, or unable to work.	58,011 (80.8)	234,284 (133.2)	352,687 (200.7)	309,207 (217.7)	143,979 (288.0)
- cash 2,000 Baht (maximum 3 times a year) to families whose members are HIV infected.	1,031 (n.a.)	512 (n.a.)	512 (1.0)	965 (2.0)	10,700
- cash 4,000 Baht to HIV infected families to invest in the group occupation.		49,398 (n.a.)	17,746 (28.2)	20,311 (41.8)	17,580 (31.8)
- cash 3,000 Baht to HIV infected families to invest in agriculture business.		2,717 (5.8)	2,011 (4.0)	1,271 (2.0)	47 (0.07)
- monthly allowance to families whose members suffer from HIV/AIDS (500 Baht per month until death)		6,051 (36.0)	7,200 (36.0)	6,000 (36.0)	6,000 (36.0)
Minority: cash 1,000 Baht to families whose members are HIV infected.	500 (0.5)	500 (0.5)	500 (0.5)	500 (0.5)	500 (0.5)

Source: Department of Public Welfare and Ministry of Social Development and Human Security.
Note: Figures in parentheses are expenditure in millions of Baht. Data for 2002 are not available.

Table 3.5 Social Assistance Centres

Target Group	Type of Assistance	Number of Service Centres Across Country			Number of Recipients		
		2001	2003	2004	2001	2003	2004
1. Children and Youths	Social assistance centre for children aged below seven	3	3	3	1,437	1,622	1,641
	Social assistance centre for children aged 7-18	17	17	17	4,606	4,453	4,249
	Emergency shelter for children	2	2	2	1,211	919	881
	Shelter to protect child's welfare	2	2	2	651	608	607
	Free shelter and centre for skill training	1	1	1	108	117	145
	Temporary shelter for family and children	9	9	24	3,385	2743	4,336
2. Disadvantage Women	Emergency shelter and centre for skill development	4	4	4	6,904	1,138	1,619
	Free shelter and centre for skill training	8	7	8	8,876	5,936	8,275
3. Disables	Social assistance centre for disable children	4	4	4	2,129	2,003	2,352
	Social assistance centre for disables/mental disorder persons	5	5	5	1,840	1,775	2,232
	Skill training centre for disables	9	8	9	1,005	487*	639
4. Homeless	Shelter for homeless	9	9	9	4,549	4,409	5,458
	Emergency shelter for homeless	2	2	2	3,985	2,006	2,083
5. Elderly	Public home care for elderly	20	20	20	2,804	2,959	2,860
	Social service center for elderly	17	17	17	295,535	503,531	237,534
Total		112	110	127	348,078	512,905	237,534

Note: *The number is accounted for people who completed the courses, which was lower than the number in 2001 and 2004.

Some of the social assistance applicants or vulnerable people require emergency or long term assistance, e.g. children, disables, disadvantaged women and elderly. For such cases, the PSDHS officials evaluate the types of assistance they need and direct them to selected regional social assistance centers shown in Table 3.5.

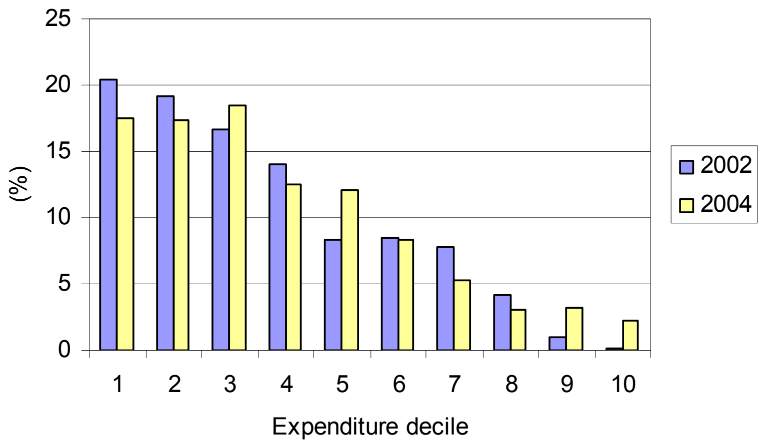
Children in trafficking industry, abandoned children, orphans, or children in poor or insecure family get helps in the Social Assistance Center for Children or Emergency Shelter for Children. The number of children in the social assistance centres did not have a remarkable change in the past few years because the centres have admitted children in need up to their capacity. The fluctuation of the number of recipients stems from the length of stay and turn over rate of those children. Children are discharged from the centres for many reasons: get adoption, return to their parents, move to a new social assistance centres, or die.

Disadvantaged women are women rescuing from prostitution, violent family or trafficking. Social assistance for these women includes emergency shelter, counseling and occupational training. These types of assistance also provide to the homeless.

Disables and poor elderly are the only two groups that get monthly cash benefit. A disabled person gets monthly allowance of Baht 500 (around US 15) and a poor old age gets Baht 300 (around US 9) per month. However, the number of beneficiaries for these types of benefit is limited by the government budget. Government allocated budget for five to six old age per village. The village committees selected poor old age to receive the benefits. There is no legitimate means test. Selected old age can receive the benefit until they die. The new qualified disable or old age will not get monthly cash allowance unless one of those who received the benefit has died or disqualified.

In 2002, the administration of old age monthly allowance is transferred to Tambon Administration Organization (TAO) as a result of budgetary reform and government decentralization. In the same year, approximately 875 thousands of the old age were poor, but only 400 thousands of them received the old age benefit from central government budget. Figure 3.5 shows the distribution of the monthly allowance for poor old age across expenditure deciles. Practically, this type of benefit should have concentrated in the lowest expenditure decile. The distribution of this benefit worsened when its administration was transferred to TAO.

Figure 3.5 Proportion of Old Age With Monthly Cash Benefit



Source: SES

The formal social protection programs in Thailand are social insurance and health insurance—*ex-ante* social risk management—and social assistance—*ex-post* social risk management. Social insurance system provides insurance against risks such as sickness, death, unemployment and old age to private, government and state-enterprise employees. The current social insurance system for private employees covers only 70 percent of eligible private employees whereas the systems for government and state-enterprise cover a hundred percent of their eligible employees. Private employees who are not covered are more likely to be in the construction sector, or live in the northern or northeastern part of Thailand. The proportion of private employees with social insurance coverage is higher among the rich than the poor, unlike the universal healthcare insurance or the 30-Baht scheme.

The 30-Baht scheme provides health insurance to people who are not insured under the social insurance systems. The benefit incidence of the 30-Baht scheme is progressive. It covers 90 percent of people in the lowest expenditure decile and 40 percent of people in the highest expenditure decile.

People who were exposed to shock and unable to pull themselves away from the state of hardship could request for social assistance provided by the government. In most cases, social assistance applicants receive in-kind benefits such as food, emergency shelter, and various types of consultation. Repeat use of in-kind benefit or welfare is common. Homeless individual may go to PSDHS office frequently and children from insecure families may be in and out of the emergency shelters for children many times.

IV. Vulnerability Assessment

Vulnerability to poverty is defined as the probability that a household will fall below the poverty line or will remain in poverty if the household is currently poor. Vulnerability is a forward-looking perspective of household's well-being whereas poverty is a current state of household's well-being. This section tries to quantify household's vulnerability to poverty among the households in Thailand. The study does not focus on any particular risks that might cause household vulnerability or deprivation. However, it focuses on how to measure vulnerability to poverty and what types of households face continual risks that pass them into the state of deprivation.

Following Bidani and Richter (2001) and Chaudhuri et al. (2002), vulnerability level of a household h at time t is defined as:

(4.1) $$v_{ht} = \Pr(c_{h,t+1} \le z)$$

where $c_{h,t+1}$ is the household's per capita consumption level at time t+1 and z is the consumption poverty line.

By this definition, to assess vulnerability, we need to make inferences about household's future consumption. The reduced form model for consumption depends on a set of observable household characteristics, a number of the aggregate environment and some unobservable factors:

(4.2) $$c_{ht} = c(X_h, \beta_t, e_{ht})$$

where X_h is the vector of observable household characteristics, β_t is a vector of parameters describing the state of the economy at time t, and e_{ht} represents unobserved factors.

To estimate household consumption, we assume that household consumption is log normally distributed:

(4.3) $$\ln c_{ht} = X_h\beta_t + e_{ht}$$

where e_{ht} ~ iid $N(0, \sigma^2(X_h))$. We assume that uncertainty about future consumption is from idiosyncratic shock, e_h. We allow the variance of e_h to depend on observed household characteristic in the following pattern:

$$(4.4) \quad \sigma^2_{e,h} = X_h\theta .$$

The vector of parameters, β and θ, are estimated using a three-step feasible generalized least square (FGLS). The estimated expected log consumption and variance of log consumption for each household h are:

$$(4.5) \quad \hat{E}[\ln c_h \mid X_h] = X_h\hat{\beta}_{FGLS}$$

$$(4.6) \quad \hat{V}[\ln c_h \mid X_h] = \sigma^2_{e,h} = X_h\hat{\theta}_{FGLS}$$

Using vulnerability to poverty defined in equation (4.1) and normal distribution of log consumption, an estimate of household's vulnerability to poverty is:

$$(4.7) \quad \hat{v}_h = \hat{P}r[\ln c_h < \ln z \mid X_h] = \Phi\left[\frac{\ln z - X_h\hat{\beta}_{FGLS}}{\sqrt{X_h\hat{\theta}_{FGLS}}}\right]$$

where Φ denotes the cumulative density of the standard normal.

Vulnerability Among Rural Households

Data used to assess vulnerability to poverty come from Socio-Economic Survey (SES) conducted by the National Statistical Office. The last survey, covering 34,843 households, was conducted in 2004. What is special about the 2004 SES is that it interviewed the same households in the rural areas who were interviewed in April-September 2002. These two period repeat samples allow us to study the dynamism of vulnerability and poverty.

The number of interview households in the rural area between April and September was 6,586 in 2002 and 6,309 in 2004. From the data file, we can identify the same houses between the two year periods and we know the identification number of household members, but we do not know whether a household living in a same house in 2002 and 2004 was the same household. Therefore, we have to make sample selection. We delete the households who were interviewed one year only, either 2002 or 2004 and also delete the households whose number of member changed more than ±3. We also check the age of household's head. This is an ad hoc selection, but we want to make sure that samples in 2004 are the same households as samples in 2002. After the selection, we end up with 5,543 household in the sample.

Using the new official poverty lines by region (Jitsuchon et al, 2004), approximately 22.17 percent of the sample were poor in 2002 and 15.62 percent were poor in 2004 (Table 4.1)[7]. The poverty incidence in Thailand has been improved. However, approximately 9.35 percent of the rural households were chronic poor or poor in the three-year period (2002-04). Rural household in the Northeast and North are on average poorer than households in other rural regions (Table 4.2).

[7] The national poverty lines were 1,190 baht per person in 2002 and 1,242 baht per person in 2004.

Table 4.1 Dynamism of Poverty among Rural Households

		Non-poor in 2004	Poor in 2004	Total
Non-poor in 2002	Row %	91.95	8.05	100.00
	Table %	71.56	6.27	77.83
Poor in 2002	Row %	57.82	42.18	100.00
	Table %	12.82	9.35	22.17
Total		84.38	15.62	100.00

Table 4.2 Poverty Rate among Rural Households

	Central	North	Northeast	South	Total
(Baht per month)					
Per cap consumption 2002	2,838	1,739	1,568	2,100	1,950
Per cap consumption 2004	3,442	2,225	1,808	2,865	2,400
Poverty line 2002	1,184	1,032	1,009	1,041	1,055
Poverty line 2004	1,243	1,089	1,043	1,116	1,106
Poverty in 2002					
Non-poor	87.66	75.07	71.31	86.52	77.83
Poor	12.34	24.93	28.69	13.48	22.17
Poverty in 2004					
Non-poor	93.62	81.72	79.35	89.58	84.38
Poor	6.38	18.28	20.65	10.42	15.62

The FGLS estimates of log per capita consumption (equation (4.3)) by region are shown in Table 4.3 (see sample in appendix). Household size, household head's education, socio-economic status (main source of household income), and housing infrastructure are significant factors affecting household consumption in all regions. Gender and marital status do not affect household consumption, except households in the Northeast. Heads of households who were divorced in the Northeast had lower consumption than other households. Households without piped water, fixed line phone, and a small number of bedrooms have lower consumption than others.

Estimated vulnerability at a household level in 2002 is calculated using the results in Table 4.4 and equation (4.7). Estimated household's vulnerability level in 2004 uses household characteristics in 2004 and parameters from Table 4.4. Average estimated household vulnerability to poverty was 0.22 in 2002 and 0.21 in 2004. Households in the Northeast and North have the same average vulnerability level.

Table 4.3 FGLS Coefficients of Log Per Capita Consumption of Rural Households

	Central		North		Northeast		South	
	Coef	Asym-t	Coef	Asym-t	Coef	Asym-t	Coef	Asym-t
constant	8.1006	56.910	7.6743	45.810	7.7738	41.480	7.8084	35.870
size of household	-0.3252	-11.680	-0.3086	-8.740	-0.3409	-10.140	-0.1824	-6.010
size squared	0.0267	8.890	0.0277	6.500	0.0261	7.210	0.0104	3.960
age of head of household	0.0073	1.510	0.0010	0.190	0.0092	1.620	0.0189	2.690
age squared	-0.0001	-2.130	-0.0001	-1.170	-0.0001	-1.770	-0.0002	-3.150
gender of head of household	0.0238	0.940	0.0159	0.540	-0.0647	-1.800	-0.0009	-0.020
no. of male	-0.0002	-0.010	-0.0286	-1.700	-0.0092	-0.600	-0.0208	-1.170
head of hh-single	-0.0182	-0.350	0.0554	0.750	0.0080	0.100	-0.0199	-0.210
head of hh-married	0.0059	0.180	-0.0123	-0.340	0.0747	1.850	0.0185	0.410
head of hh-divorced	0.0793	1.000	0.0369	0.440	-0.3154	-3.510	0.0554	0.390
head educ-lower elem	-0.0579	-1.790	-0.0794	-2.260	0.0006	0.010	-0.1384	-3.380
head educ-upper elem	-0.0824	-2.200	-0.0610	-1.390	-0.0843	-1.920	-0.0773	-1.630
head educ-tertiary	0.0996	1.650	0.3294	4.490	0.4663	3.890	0.3596	3.550
no of no educ in the hh	-0.1881	-9.160	-0.1637	-8.530	-0.0871	-3.870	-0.1818	-9.330
no. of member with elem educ	-0.0766	-5.320	-0.0364	-2.210	-0.0396	-2.450	-0.0296	-1.420
no. of member with secon educ	0.0451	1.900	0.0779	2.580	0.0621	2.750	-0.0303	-1.220
no. of member with terti educ	0.2598	4.080	-0.0312	-3.970	0.0259	1.970	0.1544	0.650
entrepreneur	0.1533	4.560	0.1834	4.510	0.2824	7.050	0.1897	4.740
professional	0.2981	6.880	0.2313	4.110	0.3811	4.860	0.3751	4.410
blue collar	-0.0460	-5.090	-0.0540	-5.440	-0.0283	-1.260	-0.0228	-1.790
white collar	0.0713	2.880	0.0654	2.360	0.1155	3.900	0.0140	0.420
no. of children-private school	0.1370	4.410	0.1137	2.990	0.1836	2.920	0.0345	0.900
no. of children-pub school	-0.0359	-2.520	-0.0160	-0.940	-0.0115	-0.740	-0.0679	-3.920
no. of bedroom	0.1191	8.310	0.0906	6.160	0.0669	4.390	0.1132	6.110
electricity	0.2094	3.520	0.4554	8.170	0.0724	0.710	-0.0440	-0.410
piped water	0.0636	3.060	0.0434	2.090	0.0514	2.160	0.1088	4.270
phone	0.3025	11.650	0.4022	11.550	0.3692	4.940	0.2224	5.850
Sample	1,707		1,482		1,343		998	
Average vulnerability 2002	0.12		0.27		0.27		0.16	
Average vulnerability 2004	0.11		0.25		0.25		0.15	

Table 4.4 Proportion of Household' Vulnerability using Different Threshold Level

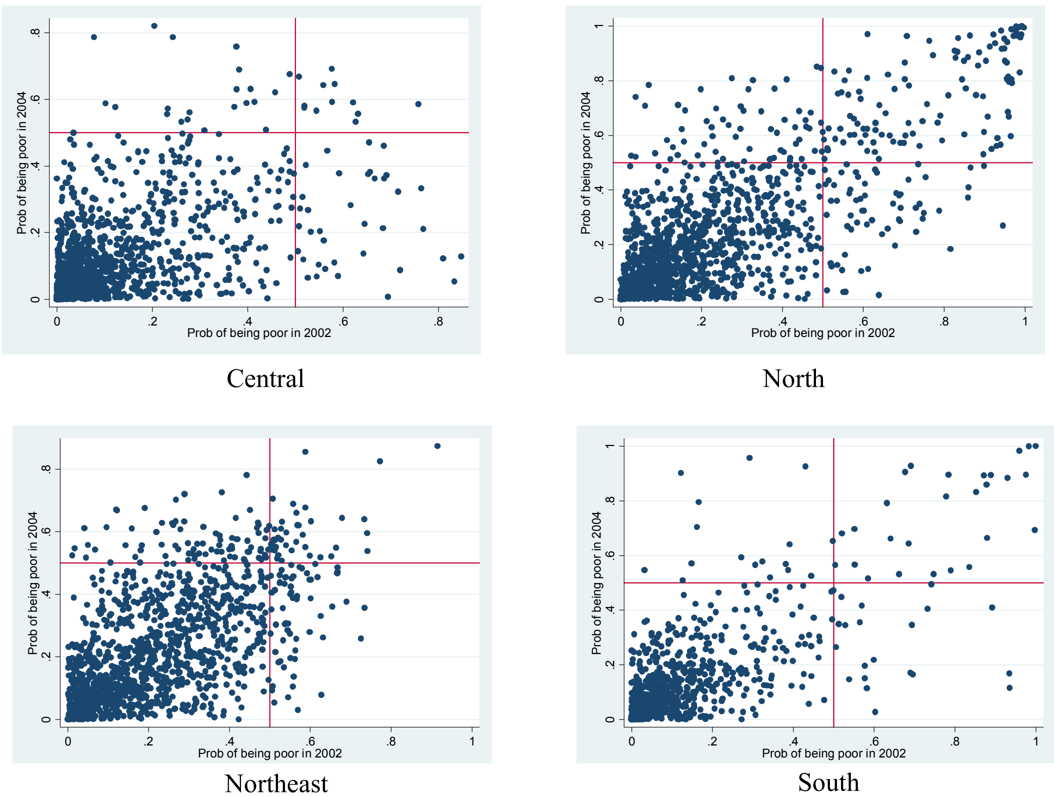
	Vulnerability in 2004		
	No	yes	Total
Threshold = regional headcount poverty ration			
Vulnerability in 2002			
No	39.2	16.8	56.0
Yes	9.0	35.0	44.0
Total	48.2	51.8	100
Threshold = 0.5			
Vulnerability in 2002			
No	84.0	4.9	88.9
Yes	5.7	5.4	11.1
Total	89.7	10.3	100.0

Note: A household is vulnerability to poverty when its estimated vulnerability is above a threshold level.

While approximately 9.35 percent of rural population were poor in both 2002 and 2004 (Table 4.1), approximately 35 percent were vulnerability to poverty during the period 2002-04 (Table 4.4). Almost half of rural population were vulnerability to poverty in either 2002 or 2004. When the threshold level is 0.5, a household is vulnerability to poverty if its probability to have per capita consumption below the poverty line in the future is greater than 0.5. Using 0.5 threshold level, approximately 5.4 percent of the rural households were vulnerability to poverty in the three-year period (2002-04).

Figure 4.1 shows that household vulnerability to poverty is sensitive to the threshold, particularly households in the North and Northeast. The probability of being poor in both 2002 and 2004 for households in the North and Northeast is concentrated in the middle of the Figures. When the threshold levels move below 0.5, a large proportion of households will be vulnerability to poverty.

Figure 4.1 Probability of Being Poor in 2002 and 2004



Note: The lines represent 0.5 threshold level.

Table 4.5 Vulnerability among the Poor and Non-Poor

	2002		2004		Poor 02, Non poor 04	Non poor 02, Poor 04	Poor 02 and 04
	Non-poor	Poor	Non-poor	Poor			
(Baht per month)							
Per cap consumption 45	2,271	824	2,117	1,049	871	1,481	760
Per cap income 45	2,921	1,060	2,745	1,235	1,147	1,674	941
Per cap consumption 47	2,698	1,355	2,686	854	1,751	917	812
Per cap income 47	3,413	1,679	3,369	1,188	2,128	1,373	1,064
Estimated vulnerability							
2002	0.17	0.42	0.18	0.42	0.35	0.30	0.50
2004	0.17	0.36	0.17	0.43	0.27	0.35	0.48
Prob. of being poor > 0.5 in 2002 (%)							
no	94.68	68.68	93.29	65.29	78.60	80.50	55.09
yes	5.32	31.32	6.71	34.71	21.40	19.50	44.91
Prob. of being poor > 0.5 in 2004 (%)							
no	94.37	73.10	94.49	63.52	87.69	79.07	53.09
yes	5.63	26.90	5.51	36.48	12.31	20.93	46.91
Prob. of being poor > poverty rate in 2002 (%)							
no	66.61	18.65	62.29	21.83	25.13	39.84	9.76
yes	33.39	81.35	37.71	78.17	74.87	60.16	90.24
Prob. of being poor > poverty rate in 2004 (%)							
No	54.91	24.58	54.52	13.94	34.03	17.40	11.63
Yes	45.09	75.42	45.48	86.06	65.97	82.60	88.37

Vulnerability to poverty among the transient and chronic poor was very high. Table 4.5 shows that households who were poor in either 2002 or 2004 had an average probability of being poor of 0.27-0.35. Approximately half of the chronic poor are expected to be poor in the future. The proportion of non-poor who were vulnerability to poverty increases dramatically when we use the regional poverty lines as threshold levels. Approximately 33 percent of non-poor in 2002 were vulnerability in 2002 while 45 percent of non-poor in 2004 were vulnerability in 2004. Approximately 90 percent of the chronic poor were vulnerability to poverty in 2002. This proportion reduced to 88 percent in 2004.

This study uses the headcount poverty ratio by region in 2002 and 2004 as threshold levels for vulnerability. A household is vulnerable if its probability of having per capita consumption below the poverty line is above the threshold level.

Vulnerable households are more likely to fall into poverty in the future than the non-vulnerable (Table 4.6). Approximately 28 percent of vulnerable households in 2002 fell into poverty in 2004. Only six percent of households who were not vulnerable in 2002 fell into poverty in 2004. Approximately 32 percent of vulnerable households in 2004 used to be poor in 2002 and were poor in 2004. About half of poor households in 2002 were vulnerable in both periods, 2002 and 2004. Approximately 30 percent of the same households were poor in 2004. This incidence indicates how difficult it is for the poor and vulnerable household to move out of the vicious cycle of vulnerability and poverty. Based on these data, these households may be characterized as being deprived.

Table 4.7 and 4.8 show poverty and vulnerability profiles. The chronic poor, households who were poor in both periods, concentrated in the Northeast. They were more likely to be self employed and to head by a very low educated person or economically inactive person. More than 20 percent of the chronic poor were headed by a person without any formal education. The transient poor households were headed by a person with higher education level than the chronic poor households.

Female headed household was not a significant factor for household's vulnerability to poverty. A high proportion of households with chronic vulnerability or poverty was headed by male and married couple. Private employees have low probability to be vulnerability to poverty in both 2002 and 2004, but have a higher probability to be vulnerability in either 2002 or 2004. Households with infrequent vulnerability incidence (vulnerability for one year only) were more likely to be headed by widows.

Sources of vulnerability are low mean per capita consumption (LM) and high variance of per capital consumption (HV). Vulnerable households whose per capita consumption is below regional poverty line are a LM type. The rest of the vulnerable households are of the HV type.

Households who were vulnerable for a year (either 2002 or 2004) were more likely to be the HV type. This finding is similar to Bidani and Richter (2001) using 1996, 1998 and 1999 SES. The proportion of vulnerable household type HV in 2004 is lower than in 2002 by 0.05 percentage point even though the threshold level is lower. A higher proportion of households who were always vulnerable was in the LM type (17 percent in 2002 and 27 percent in 2004) than households who were infrequent vulnerability to poverty. Vulnerable households in the HV type in 2002 were more likely to be in the Northeast and the LM type were more likely to be in the North. However, in 2004, the majority of LM type households were from the Northeast. The sources of vulnerability vary across regions and years.

Characteristics of head of vulnerable household type HV had changed between the two periods of the study. Households who were vulnerability to poverty due to high variance of consumption in 2002 were more like to live in the Northeast (Table 4.10). But, households who were vulnerability due to low mean of consumption in 2002 were more likely to live in the North. In 2004, half of households with low mean consumption lived in the Northeast. The proportion of heads who were self-employed decreased but the proportion of employer or employee increased. It might be that risks affecting long term consumption in the year 2004 were high among the self-employed as more of them became vulnerable of the LM-type.

Table 4.6 Poverty Rate in Rural Thailand

	Vulnerability 2002		Vulnerability 2004		Vulnerability 02, Non vulnerability 04	Non vulnerability 02, vulnerability 04	Vulnerability 02 and 04
	no	yes	no	yes			
(Baht per month)							
Per cap consumption 45	2,448	1,317	2,431	1,503	1,439	1,955	1,286
Per cap income 45	3,253	1,562	3,226	1,842	1,733	2,517	1,518
Per cap consumption 47	2,969	1,677	3,134	1,718	2,067	2,011	1,577
Per cap income 47	3,810	2,036	4,099	2,034	2,671	2,370	1,872
Average vulnerability							
2002	0.08	0.40	0.12	0.32	0.32	0.11	0.42
2004	0.11	0.33	0.06	0.35	0.09	0.25	0.39
Poverty 2002							
Non-poor	92.61	59.03	88.69	67.73	65.10	89.11	57.47
Poor	7.39	40.97	11.31	32.27	34.90	10.89	42.53
Poverty 2004							
Non-poor	93.91	72.27	95.48	74.06	88.10	86.28	68.20
Poor	6.09	27.73	4.52	25.94	11.90	13.72	31.80

Table 4.7 Poverty Profile of Rural Households

	2002		2004		Poor 02 Non-poor 04	Non-poor 02 Poor 04	Poor 02 and 04
	Non-poor	Poor	Non-poor	Poor			
Region							
Central	23.41	11.57	23.06	8.49	14.47	9.83	7.59
North	21.90	25.53	21.99	26.57	22.40	21.72	29.82
Northeast	38.10	53.82	39.10	54.98	53.22	55.49	54.64
South	16.60	9.08	15.85	9.97	9.90	12.97	7.96
HH head-education 2002							
No formal educ	5.95	15.13	6.16	17.82	9.70	10.72	22.58
Lower elementary	66.25	71.02	66.98	69.07	76.43	77.23	63.61
Upper elementary	12.57	10.32	12.49	9.82	10.19	8.79	10.50
Lower secondary	6.80	2.30	6.38	2.68	1.71	2.03	3.11
Upper secondary	2.54	0.31	2.31	0.61	0.39	1.23	0.20
Under grad	3.00		2.77				
Graduate level	0.24		0.22				
Attending undergrad	2.52	0.79	2.53		1.36		
Other education	0.12	0.12	0.15		0.22		
HH head-education 2004							
No formal educ	5.91	15.14	6.33	16.76	10.64	9.96	21.32
Lower elementary	64.87	69.57	65.65	67.31	73.49	71.94	64.21
Upper elementary	12.72	10.99	12.46	11.68	11.82	14.39	9.86
Lower secondary	6.48	2.72	6.17	2.80	2.15	1.74	3.51
Upper secondary	3.73	0.47	3.39	0.94	0.63	1.98	0.25
Under grad	3.06		2.83				
Graduate level	0.43		0.40				
Attending undergrad	2.72	0.55	2.65		0.94		

	2002		2004		Poor 02 Non-poor 04	Non-poor 02 Poor 04	Poor 02 and 04
	Non-poor	Poor	Non-poor	Poor			
Other education	0.07	0.55	0.12	0.51	0.32		0.85
HH head gender 2002							
Female	22.68	18.98	22.49	18.44	20.82	21.38	16.47
Male	77.32	81.02	77.51	81.56	79.18	78.62	83.53
HH head gender 2004							
Female	25.06	22.79	25.15	21.36	24.22	22.15	20.82
Male	74.94	77.21	74.85	78.64	75.78	77.85	79.18
HH head marital status 2002							
Never married	2.03	1.48	1.88	2.06	0.67	1.28	2.58
Married	81.26	82.77	81.69	81.06	82.79	78.57	82.73
Widowed	14.47	14.32	14.30	15.12	15.30	18.34	12.96
Divorced	0.77	0.58	0.77	0.54	0.44	0.17	0.78
Other	1.47	0.86	1.35	1.22	0.79	1.64	0.94
HH head marital status 2004							
Never married	2.33	1.85	2.43	1.09	2.13	0.51	1.47
Married	78.75	79.68	78.53	81.25	77.81	79.78	82.24
Widowed	15.82	16.94	16.17	15.52	18.86	17.32	14.32
Divorced	1.26	0.63	1.14	1.00	0.22	0.74	1.18
Other	1.85	0.90	1.73	1.14	0.98	1.66	0.61
HH head work status 2002							
Look for work	0.47		0.38	0.28		0.69	
Employer	21.36	17.59	21.33	16.16	19.43	17.80	15.06
Own account worker	33.82	41.10	33.89	43.80	40.09	45.75	42.49
Unpaid family worker	2.13	3.00	2.44	1.70	3.60	1.00	2.17
Govt employee	7.12	1.20	6.62	1.40	1.83	2.99	0.33
State ent employee	0.67		0.60	0.07		0.17	

	2002		2004		Poor 02 Non-poor 04	Non-poor 02 Poor 04	Poor 02 and 04
	Non-poor	Poor	Non-poor	Poor			
Private employee	18.14	16.15	17.71	17.65	14.08	15.66	18.99
Economically inactive	16.08	20.90	16.82	18.92	20.85	15.89	20.96
No occupation	0.17	0.07	0.17	0.02	0.12	0.05	
Others	0.05		0.05				
HH head work status 2002							
Look for work	0.10		0.10				
Employer	20.33	18.10	20.95	13.83	22.27	16.00	12.38
Own account worker	34.66	38.13	34.43	40.83	37.09	42.70	39.57
Unpaid family worker	2.30	3.02	2.32	3.21	2.40	2.23	3.86
Govt employee	6.91	2.42	6.65	1.94	3.17	2.73	1.40
State ent employee	0.68		0.63				
Private employee	19.36	17.39	19.03	18.34	16.73	18.42	18.29
Economically inactive	15.29	20.20	15.46	21.32	17.63	17.74	23.72
No occupation	0.35	0.70	0.41	0.53	0.65	0.17	0.77
Others	0.01	0.04	0.02		0.07		

Table 4.8 Vulnerability Profile of Rural Households

	Vulnerability 2002		Vulnerability 2004		Vulnerability 02, Non Vulnerability 04	Non vulnerability 02, Vulnerability 04	Vulnerability 02 and 04
	no	yes	no	yes			
Region							
Central	23.05	17.90	21.85	19.79	17.02	23.26	18.12
North	22.35	23.15	22.23	23.14	21.07	22.01	23.68
Northeast	38.34	45.71	41.27	41.87	53.35	37.96	43.74
South	16.26	13.25	14.64	15.21	8.57	16.77	14.46
HH head-education 2002							
No formal educ	4.46	12.47	4.02	11.67	7.66	7.42	13.71
Lower elementary	63.77	71.82	64.75	69.69	75.67	67.34	70.82
Upper elementary	12.13	12.01	10.76	13.29	11.37	15.63	12.17
Lower secondary	8.19	2.76	7.98	3.77	3.13	6.08	2.66
Upper secondary	3.07	0.74	3.20	0.97	1.37	1.78	0.58
Under grad	4.17		4.68	0.15		0.48	
Graduate level	0.34		0.39				
Attending undergrad	3.66	0.20	3.99	0.41	0.79	1.17	0.05
Other education	0.22		0.22	0.03		0.10	
HH head-education 2004							
No formal educ	4.90	11.84	3.83	11.80	4.46	7.74	13.74
Lower elementary	62.80	69.86	61.56	69.96	69.88	70.16	69.86
Upper elementary	11.94	12.84	11.42	13.19	14.62	14.88	12.39
Lower secondary	7.18	3.70	8.18	3.29	7.48	4.46	2.72
Upper secondary	4.45	1.18	5.07	1.10	2.68	1.72	0.80
Under grad	4.26		4.88	0.07		0.20	
Graduate level	0.60		0.70				
Attending undergrad	3.77	0.29	4.22	0.40	0.50	0.74	0.23

	Vulnerability 2002		Vulnerability 2004		Vulnerability 02, Non Vulnerability 04	Non vulnerability 02, Vulnerability 04	Vulnerability 02 and 04
	no	yes	no	yes			
Other education	0.09	0.29	0.14	0.21	0.38	0.10	0.27
HH head gender 2002							
Female	24.22	18.85	23.69	20.16	18.53	22.70	18.94
Male	75.78	81.15	76.31	79.84	81.47	77.30	81.06
HH head gender 2004							
Female	26.20	22.47	27.05	22.23	26.46	23.89	21.44
Male	73.80	77.53	72.95	77.77	73.54	76.11	78.56
HH head marital status 2002							
Never married	2.71	0.90	3.00	0.90	1.36	1.14	0.78
Married	80.97	82.39	80.54	82.57	81.40	82.43	82.65
Widowed	13.79	15.24	13.85	14.97	16.01	14.83	15.05
Divorced	0.98	0.41	1.03	0.46	0.40	0.53	0.42
Others	1.55	1.05	1.58	1.10	0.83	1.07	1.11
HH head marital status 2004							
Never married	2.99	1.25	3.86	0.70	3.02	0.51	0.80
Married	78.67	79.32	77.78	80.05	75.65	79.62	80.26
Widowed	15.16	17.22	14.81	17.23	17.49	17.40	17.15
Divorced	1.26	0.94	1.53	0.73	1.74	0.72	0.73
Others	1.93	1.27	2.02	1.28	2.11	1.75	1.06
HH head work status 2002							
Look for work	0.50	0.20	0.45	0.28	0.65	0.71	0.08
Employer	21.71	19.01	20.32	20.71	16.72	23.00	19.60
Own account worker	33.97	37.29	34.49	36.31	40.40	35.92	36.49
Unpaid family worker	1.88	2.88	2.41	2.24	3.31	1.13	2.77
Govt employee	8.43	2.48	9.42	2.45	5.31	3.90	1.75
State ent employee	0.80	0.16	0.69	0.36	0.46	0.94	0.08

	Vulnerability 2002		Vulnerability 2004		Vulnerability 02, Non Vulnerability 04	Non vulnerability 02, Vulnerability 04	Vulnerability 02 and 04
	no	yes	no	yes			
Private employee	18.24	17.01	18.14	17.29	17.23	17.99	16.95
Econ inactive	14.22	20.87	13.77	20.28	15.92	16.40	22.14
No occupation	0.18	0.10	0.21	0.09			0.13
Others	0.07		0.08				
HH head work status 2002							
Look for work	0.10	0.06	0.15	0.02	0.19		0.02
Employer	20.28	19.28	20.88	18.87	19.63	18.22	19.19
Own account worker	33.87	37.42	34.07	36.69	41.29	37.26	36.42
Unpaid family worker	2.68	2.19	2.28	2.63	0.96	2.89	2.51
Govt employee	8.30	2.88	9.31	2.75	5.09	3.67	2.31
State ent employee	0.86	0.11	0.70	0.37	0.13	0.94	0.10
Private employee	19.30	18.45	19.56	18.33	18.68	18.20	18.39
Econ inactive	14.17	19.18	12.56	19.93	13.86	18.62	20.55
No occupation	0.42	0.44	0.45	0.40	0.17	0.20	0.51
Others	0.03		0.04				

Table 4.9 Source of Vulnerability of Rural Households

	Vulnerability 2002	Vulnerability 2004	Vulnerability 02 Non Vulnerability 04	Non Vulnerability 02 Vulnerability 04	Vulnerability 02 and 04
Vulnerability type 02					
HV	85.81		98.09		82.65
LM	14.19		1.91		17.35
Total	100.00		100.00		100.00
Vulnerability type 04					
HV		80.04		95.03	72.84
LM		19.96		4.97	27.16
Total		100.00		100.00	100.00

Table 4.10 Source of Vulnerability by household characteristics

	Vulnerability 2002		Total	Vulnerability 2004		Total
	HV	LM		HV	LM	
Region						
Central	19.41	8.72	17.90	23.25	5.89	19.79
North	19.11	47.56	23.15	20.89	32.16	23.14
Northeast	48.24	30.41	45.71	39.73	50.45	41.87
South	13.24	13.31	13.25	16.13	11.50	15.21
HH head-education 2002						
No formal educ	9.62	29.72	12.47	8.48	24.45	11.67
Lower elementary	73.48	61.73	71.82	70.65	65.87	69.69
Upper elementary	12.81	7.18	12.01	14.64	7.89	13.29
Lower secondary	3.04	1.04	2.76	4.27	1.79	3.77
Upper secondary				1.21		0.97
Under grad				0.19		0.15
Graduate level	0.81	0.33	0.74			
Attending undergrad	0.24		0.20	0.52		0.41
Other education				0.04		0.03
HH head-education 2004						
No formal educ	8.76	30.45	11.84	8.41	25.37	11.80
Lower elementary	71.21	61.70	69.86	72.42	60.06	69.96
Upper elementary	14.22	4.54	12.84	13.98	10.05	13.19
Lower secondary	3.99	1.91	3.70	3.24	3.47	3.29
Upper secondary	1.32	0.33	1.18	1.26	0.43	1.10
Under grad				0.08		0.07
Graduate level						
Attending undergrad	0.34		0.29	0.50		0.40
Other education	0.16	1.07	0.29	0.11	0.62	0.21
HH head gender 2002						
Female	19.32	16.04	18.85	20.27	19.72	20.16
Male	80.68	83.96	81.15	79.73	80.28	79.84
HH head gender 2004						
Female	22.61	21.62	22.47	22.99	19.22	22.23
Male	77.39	78.38	77.53	77.01	80.78	77.77
HH head marital status 2002						
Never married	1.05		0.90	1.05	0.29	0.90
Married	82.01	84.68	82.39	83.26	79.83	82.57
Widowed	15.83	11.71	15.24	14.27	17.81	14.97
Divorced	0.20	1.72	0.41	0.42	0.61	0.46
Others	0.92	1.90	1.05	1.01	1.45	1.10
HH head marital status 2004						
Never married	1.39	0.41	1.25	0.72	0.62	0.70
Married	79.28	79.51	79.32	80.92	76.57	80.05

	Vulnerability 2002		Total	Vulnerability 2004		Total
	HV	LM		HV	LM	
Widowed	17.23	17.15	17.22	16.53	20.05	17.23
Divorced	0.82	1.66	0.94	0.64	1.08	0.73
Others	1.27	1.27	1.27	1.19	1.68	1.28
HH head work status 2002						
Look for work	0.22	0.07	0.20	0.33	0.10	0.28
Employer	20.04	12.80	19.01	21.32	18.26	20.71
Own account worker	37.61	35.38	37.29	35.56	39.29	36.31
Unpaid family worker	2.64	4.34	2.88	2.26	2.16	2.24
Govt employee	2.70	1.18	2.48	2.74	1.27	2.45
State ent employee	0.18		0.16	0.45		0.36
Private employee	16.50	20.11	17.01	18.41	12.81	17.29
Econ inactive	20.00	26.13	20.87	18.83	26.10	20.28
No occupation	0.12		0.10	0.11		0.09
HH head work status 2004						
Look for work	0.07		0.06	0.02		0.02
Employer	19.93	15.31	19.28	20.17	13.65	18.87
Own account worker	37.80	35.10	37.42	35.40	41.89	36.69
Unpaid family worker	2.16	2.38	2.19	3.13	0.62	2.63
Govt employee	3.08	1.67	2.88	3.14	1.23	2.75
State ent employee	0.12		0.11	0.47		0.37
Private employee	18.29	19.42	18.45	18.86	16.22	18.33
Econ inactive	18.07	25.89	19.18	18.38	26.11	19.93
No occupation	0.47	0.23	0.44	0.44	0.28	0.40

Vulnerability Among Wage Earners

The causes of vulnerability among employees who receive wage regularly might be different from the causes that affect rural households whose composition of wage income to total household income are low. Work status with wage income includes private, government and state-enterprise employees. In 2002, households with highest proportion of wage income to total household income are those in Bangkok and metropolitan (54 percent). Households in the urban area have a higher proportion of wage to total household income than households in the rural area.

Risks that affect the variation of wage income might affect household vulnerability if wage income is the main source of household income. We assume that a decline of wage income by 25 percent affect household well-being and vulnerability.

Using the Labour Force Survey in April 2002 and 2003 (See sample in appendix), we find that approximately 32 percent of the households whose heads are private, government or state employees experience a 25-percent decline in wage income. Total wage income calculated from the summation of wage income of all household members. The most vulnerable households are those with heads aged above 60.

Table 4.11 Sources of Household Income in 2002

	Bangkok and Metropolitan	Urban	Rural	Total
Central	100	100	100	100
Wage earning	54.15	53.85	43.19	47.74
Other income	32.55	33.62	41.52	38.14
Non monetary income	13.30	12.54	15.29	14.12
North		100	100	100
Wage earning		41.55	32.89	35.68
Other income		44.94	48.10	47.08
Non monetary income		13.51	19.01	17.24
Northeast		100	100	100
Wage earning		40.98	27.42	32.20
Other income		45.94	47.03	46.65
Non monetary income		13.09	25.56	21.17
South		100	100	100
Wage earning		42.59	32.48	36.15
Other income		44.06	50.68	48.27
Non monetary income		13.35	16.85	15.58
Whole Kingdom		100	100	100
Wage earning		50.14	34.64	42.83
Other income		36.75	45.96	41.09
Non monetary income		13.12	19.41	16.08

Source: Socio-Economic Survey 2002

Table 4.12 Percentage Change of Household's Wage Earnings in 2002-03

	Percentage change of wage earnings					No income in 2002	Average income change	Average wage per week (Baht)	
	-25%	-5% to -25%	-5% to +5%	+5 to +25%	+25%			2002	2003
Bangkok and Metropolitan									
% of column	11.19	17.49	30.50	16.75	21.85	21.75	2.83	4829	5419
% of region	19.71	12.28	23.71	15.01	27.25	2.04			
Central									
% of column	20.51	30.20	28.07	24.29	24.72	3.78	3.20	3131	3143
% of region	27.35	16.04	16.51	16.48	23.34	0.27			
North									
% of column	21.00	15.62	14.93	21.00	17.70	16.62	3.37	1876	1773
% of region	36.26	10.74	11.38	18.45	21.64	1.53			
Northeast									
% of column	35.71	25.22	16.35	27.51	25.22	52.03	3.51	2007	1813
% of region	40.77	11.47	8.23	15.98	20.39	3.16			
South									
% of column	11.58	11.47	10.16	10.46	10.51	5.81	3.37	2556	2410
% of region	34.36	13.56	13.30	15.79	22.07	0.92			
Total	32.16	12.81	14.19	16.36	22.77	1.71	3.27	2828	2849

Source: Labour Force Survey (April) 2002-03.

Table 4.13 Household with Wage Earning Changes above 25 Percent

	Increase above 25%		Decrease above 25%		Total
	% row	% column	% row	% column	
Age of head of household		100		100	100
15-19	3.06	0.04	11.55	0.09	0.26
20-29	27.15	18.05	26.18	12.32	15.14
30-39	22.00	31.61	35.09	35.70	32.72
40-49	22.20	30.42	30.36	29.47	31.21
50-59	21.15	15.70	31.27	16.44	16.90
60+	25.26	4.18	51.01	5.98	3.77
Gender of head of household		100		100	100
Female	27.10	20.59	26.82	14.44	17.30
Male	21.87	79.41	33.27	85.56	82.70
Household head's education		100		100	100
Primary and below	24.07	63.29	40.00	74.47	59.86
Lower Secondary	20.38	10.16	25.33	8.94	11.35
Upper secondary	34.31	7.47	26.37	4.07	4.96
Vocational	23.05	5.40	15.45	2.56	5.33
Diploma	15.91	3.06	20.28	2.76	4.38
Higher education	17.14	10.62	16.40	7.20	14.11
Household head's marital status		100		100	100
Never married	32.49	13.22	22.05	6.35	9.27
Married	21.14	77.00	33.33	86.00	82.96
Widow	25.10	5.15	34.77	5.05	4.67
Divorce	35.31	2.31	22.08	1.02	1.49
Separate	32.73	2.32	31.34	1.57	1.61
Household head's work status		100		100	100
Government employee	14.69	14.72	17.21	12.22	22.82
State enterprise employee	28.71	4.59	10.67	1.21	3.64
Private employee	24.98	80.68	37.85	86.58	73.54
Change of household head in 2003		100		100	100
Same household head as in 2002	24.07	76.40	29.06	65.32	72.29
2nd member in 2002 became head in 2003	19.11	21.65	40.53	32.51	25.79
3rd member in 2002 became head in 2003	4.93	0.13	56.71	1.04	0.59
4th member in 2002 became head in 2003			43.22	0.68	0.51
5th member in 2002 became head in 2003	56.80	1.23	25.99	0.40	0.49
6th member in 2002 became head in 2003	40.61	0.59	4.84	0.05	0.33
Region		100		100	100
Bangkok and metropolitan	27.25	21.85	19.71	11.19	18.25
Central	23.34	24.72	27.35	20.51	24.12
North	21.64	17.70	36.26	21.00	18.62
Northeast	20.39	25.22	40.77	35.71	28.17
South	22.07	10.51	34.36	11.58	10.84
Area		100		100	100
Urban	24.22	44.73	23.45	30.67	42.05
Rural	21.72	55.27	38.47	69.33	57.95
Industry household head works for		100		100	100
Agriculture	25.05	17.64	47.59	23.73	16.03
Manufacturing	23.71	22.78	26.91	18.30	21.87
Construction	19.99	15.49	47.16	25.87	17.64
Utility	23.16	0.92	25.72	0.72	0.90

	Increase above 25%		Decrease above 25%		Total
	% row	% column	% row	% column	
Commerce	25.04	13.33	36.62	13.81	12.12
Transport	34.92	6.40	24.44	3.17	4.17
Service	19.59	23.45	16.98	14.39	27.26
At least one household member was sick and stopped daily activity		100		100	100
No	21.83	56.43	28.54	52.25	58.86
Yes	24.12	43.57	37.33	47.75	41.14
At least one household member had difficulty with personal care		100		100	100
No	7.19	0.18	65.73	1.16	0.57
Yes	22.86	99.82	31.96	98.84	99.43
At least one household member could not move some parts of body easily		100		100	100
No	7.19	0.18	65.73	1.16	0.57
Yes	22.86	99.82	31.96	98.84	99.43
At least one household member had chronic disease		100		100	100
Yes	22.77	100.00	32.16	100.00	100.00
At least one household member stayed in the hospital		100		100	100
Yes	22.77	100.00	32.16	100.00	100.00
At least one household member could not participate social activities		100		100	100
No	7.19	0.18	65.73	1.16	0.57
Yes	22.86	99.82	31.96	98.84	99.43
Increase in employed member		100		100	100
No	17.68	64.65	34.38	89.02	83.25
Yes	48.05	35.35	21.08	10.98	16.75
Increase in unemployed member		100		100	100
No	23.02	98.07	31.34	94.57	97.01
Yes	14.70	1.93	58.48	5.43	2.99
Number of bedroom		100		100	100
One	22.07	49.08	34.74	54.71	50.64
Two or more	23.49	50.92	29.50	45.29	49.36
Own pick-up truck or van		100		100	100
No	23.67	91.37	33.66	92.01	87.90
Yes	16.24	8.63	21.24	7.99	12.10
Own cars		100		100	100
No	23.50	85.20	34.84	89.45	82.56
Yes	19.32	14.80	19.44	10.55	17.44
Own tractor-truck or walking tractor[1]		100		100	100
No	23.42	96.86	30.88	90.43	94.17
Yes	12.25	3.14	52.78	9.57	5.83
Own motorcycles		100		100	100
No	25.11	34.57	32.07	31.26	31.35
Yes	21.70	65.43	32.20	68.74	68.65

Source: Labour Force Survey (April) 2002-03.
Note: [1] A tractor-truck is run by a multi purpose machine. Thai farmers also use this same machine for walking tractor and plumbing.

Approximately 51 percent of those households experienced a 25-percent decline in wage income. Households whose heads have been changed for some reasons, e.g. death, migration, end of marriage, are also vulnerable to the decline in wage income. Approximately 41-57 percent of households with new heads who used to be the 2nd, 3rd, or 4th member of the households in 2002 have a lower wage income by 25 percent in 2004.

What type of households is prone to the 25-percent decline in wage income? We find that they are more likely to be those of private employees. One or more of their household members have problems with physical mobility or cannot join social activities. In addition, they are less likely to own assets such as a house with separated bedroom, cars, pick-up trucks or walking tractors.

V. Conclusion

The quantitative assessment of household vulnerability shows that vulnerability is not less important than poverty. To eradicate poverty, we must reduce the household vulnerability as well. Vulnerable households have a high probability to be poor in the future. Even though we can help the "today" poor move out of poverty, there will certainly be more of the "tomorrow" poor waiting ahead, if we ignore vulnerability.

Therefore, we should have some policies to help households who are always vulnerable to poverty (3-year consecutively as in this study, for example) to cope with risks more effectively. We find that households who are vulnerable to poverty are more likely to live in the northeast of Thailand, headed by individuals with no or lower education or without any economic activity. To help them move out of the vulnerability to poverty, we need to promote education to their young household members. Household members who are economically inactive but employable should be encouraged to join the labour force through appropriate workfare programs.

Households who consistently move in and out of vulnerability to poverty are more likely to have their heads as self-employed, employers or private employees. Income security is the major factor of household well-being. To smooth income for private employees, the unemployment insurance program is a good option. However, the mechanisms for self-employment and employer can be complicated since their might be many factors affecting their income. The comprehensive protection mechanisms might include crop insurance against natural disaster, soft loan and credit for small business, promotion of risk pooling among professions or community etc. The vulnerability incidence in this study shows that the current social protection mechanisms in Thailand are not enough to protect the Thai Against vulnerability to poverty.

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Appendix

Table A1 Proportion of Samples from Socio-Economic Survey (%)

	Central	North	Northeast	South	Total
Education of head of household 2002	100.00	100.00	100.00	100.00	100.00
No formal education	4.71	16.78	4.09	10.00	7.99
Lower elementary	62.90	62.75	75.48	57.63	67.31
Upper elementary	11.02	10.43	11.95	16.39	12.07
Lower secondary	9.10	4.90	4.06	7.42	5.80
Upper secondary	3.55	1.28	1.38	2.97	2.05
Diploma or undergrad	4.97	1.71	1.43	2.16	2.34
Graduate	0.36	0.09	0.12	0.29	0.19
Attending undergrad	3.26	1.87	1.37	3.11	2.14
Other	0.12	0.19	0.11	0.03	0.12
Education of head of household 2004	100.00	100.00	100.00	100.00	100.00
No formal education	5.34	17.56	3.12	0.00	7.96
Lower elementary	63.25	61.09	74.11	54.12	65.91
Upper elementary	10.15	10.43	12.68	17.34	12.34
Lower secondary	6.73	4.65	5.09	7.18	5.64
Upper secondary	4.27	1.96	2.22	5.07	3.01
Diploma or undergrad	4.97	1.72	1.58	2.03	2.38
Graduate	1.00	0.15	0.12	0.29	0.34
Attending undergrad	4.10	2.01	1.02	3.38	2.24
Other	0.19	0.44	0.06	0.10	0.18
Gender of head of household 2002	100.00	100.00	100.00	100.00	100.00
Female	28.36	23.07	19.21	18.34	21.86
Male	71.64	76.93	80.79	81.66	78.14
Gender of head of household 2004	100.00	100.00	100.00	100.00	100.00
Female	31.52	26.78	22.14	18.21	24.56
Male	68.48	73.22	77.86	81.79	75.44
Marital status of head of household 2002	100.00	100.00	100.00	100.00	100.00
Never married	3.29	2.16	1.29	1.35	1.91
Married	78.87	81.07	82.21	84.44	81.59
Widow	14.39	14.33	15.26	12.34	14.43
Divorce	1.11	0.97	0.46	0.59	0.73
Others	2.34	1.47	0.77	0.00	1.33

	Central	North	Northeast	South	Total
Marital status of head of household 2004	100.00	100.00	100.00	100.00	100.00
Never married	3.49	2.42	1.63	1.81	2.22
Married	75.50	77.94	80.07	82.22	78.96
Widow	16.42	16.97	16.28	13.60	16.06
Divorce	1.25	1.06	1.04	1.24	1.12
Others	3.33	1.62	0.99	1.13	1.64
HH head work status 2002	100.00	100.00	100.00	100.00	100.00
Look for work	1.24	0.20	0.09	0.14	0.36
Employer	18.64	26.65	21.91	9.96	20.52
Own account worker	22.55	26.31	45.17	40.10	35.43
Unpaid family worker	2.19	3.86	1.71	1.86	2.32
Govt employee	5.31	4.44	6.90	5.53	5.81
State ent employee	1.38	0.17	0.36	0.29	0.52
Private employee	28.16	17.96	9.63	25.24	17.70
Econ inactive	20.42	20.30	14.05	16.41	17.15
No occupation	0.11	0.06	0.10	0.48	0.15
Others	0.00	0.04	0.08	0.00	0.04
HH head work status 2004	100.00	100.00	100.00	100.00	100.00
Look for work	0.30	0.03	0.03	0.00	0.08
Employer	17.08	23.36	22.08	12.09	19.84
Own account worker	23.85	31.68	44.03	33.29	35.43
Unpaid family worker	2.94	1.81	2.24	3.40	2.46
Govt employee	6.13	4.80	6.87	4.66	5.91
State ent employee	1.25	0.34	0.37	0.25	0.53
Private employee	28.40	17.27	10.69	31.18	18.92
Econ inactive	19.49	20.28	13.30	14.69	16.38
No occupation	0.57	0.39	0.37	0.44	0.42
Others	0.00	0.04	0.02	0.00	0.02

Table A2 Proportion of Samples from Labour Force Survey

	Proportion of sample (%)
Age of head of household	100
15-19	0.26
20-29	15.14
30-39	32.72
40-49	31.21
50-59	16.90
60+	3.77
Gender of head of household	100
Female	17.30
Male	82.70
Education of head of household	100
Elementary or lower	59.86
Lower secondary	11.35
Upper secondary	4.96
Vocational	5.33
Diploma	4.38
Bachelor degree or higher	14.11
Marital status of head of household	100
Single	9.27
Married	82.96
Widow	4.67
Divorce	1.49
Separate	1.61
Work status of head of household	100
Government employee	22.82
State enterprise employee	3.64
Private employee	73.54
Region	100
Bangkok and metropolitan	18.25
Central	24.12
North	18.62
Northeast	28.17
South	10.84
Region	100
Municipal	42.05
Non-municipal	57.95
Industry of which head of household work for	100
Agriculture	16.03
Manufacturing	21.87
Construction	17.64
Utility	0.90
Commerce	12.12
Transport	4.17
Service	27.26