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Time and Distance Study

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Abbreviations

ADB	Asian Development Bank
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
MOLISA	Ministry of Labour Invalid and Social Affaires
SEDP	Socio- Economic Development Plan
CCTDI	Consulting Centre for Transport Development Investment, belonging to TDSI
GoV	Government of Vietnam
DFID	Department for International Development - UK
GBP	Great Britain Pound
GDP	Gross Domestic Product
RT1, 2	Rural Transport Project 1, 2
JICA	Japanese International Cooperation Agency
ODA	Official Development Assistance
HW	Highway
PR	Provincial road
PDOT	Provincial Department of Transport
PPID	Provincial Planning and Investment Department
SEACAP	South East Asia Community Access Programme
TDSI	Transport Development and Strategy Institute (TDSI)
TOR	Terms of Reference
TRL	Transport Research Laboratory, UK
PC	People's Committee
UK	United Kingdom
UN	United Nations
USD	US dollar
VAT	Value Additional Tax
VND	Vietnamese Dong
PID	Planning and Investment Department - MOT
WB	World Bank
GSO	General Statistics Office
VHLSS	Vietnam Household Living Standard Survey
(t)	Time
(d)	Distance

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VIET NAM:TIME AND DISTANCE STUDY

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EXECUTIVE SUMMARY

1. Introduction

This report describes the investigations, conclusions and recommendations of the "Time and Distance Study " – SEACAP 022/001. The study was funded by the DFID – UK and carried out for the Ministry of Transport, Vietnam. The TDSI was the consultant appointed to carry out this study after a selection process under the South East Asian Community Access Programme (SEACAP).

The objectives of this Study are to improve the rural transport statistical analysis methods through a direct interview approach with the participation of local people to:

(i) analyze and assess the travelling pattern of the rural people, and
(ii) review the reliability of the data.

A sample of Six communes was selected to be included in this new survey methodology. These were 2 communes of Son La province (being representative of the mountainous terrain), 2 communes of Thanh Hoa province (being representative of the plains terrain) and 2 communes of An Giang province (being representative of the delta terrain). On average, 100 households were interviewed in each commune.

2. Findings

There was a diversity among the six rural communes of the three surveyed provinces with respect to the *transport network characteristics and socio – economic conditions*. This diversity had certainly affected the quality of the interview replies, obtained through surveys of their travelled time (t) and distance (d) estimations, and the errors of their estimations. However, the social backgrounds of the interviewees were relatively representative for local people of the surveyed communes.

The data obtained through the household surveys were processed to analyze the **travelling patterns** of the commune populations with respect to the travelled times (t) and distances (d) and the used transport mode (pedestrian, bicycle, motorbike etc.), *trip frequencies* (daily, monthly, quarterly, annually), as well as the *trip purposes* (for cash earning purposes, for maintaining social relations, to schools etc.), as well as the *travelled speeds*.

Key features of the travel patterns were found to be:

- Travel models: The travels of the local people in Thanh Hoa and Son La provinces (representing the flat and mountainous regions) were mainly on foot and by bicycles, accounting for 80% of the total journeys. In An Giang province (representing the delta regions), the travels by foot and by bicycles accounted for only 60%, because they also traveled by boats. The journeys by motorbikes accounted for from 8% to 24%. The automobile use was not significant (1.4% - 4.2%).
- Average travel time and distance: The travel times and distance in the mountainous communes were greater than those in the flat provinces.

With respect to reliability of household surveyed data, in data processing, the following issues should be highlighted:

- The distance (d) errors were smaller than the time (t) error
- The local people in Trieu Thanh commune (in the rolling terrain of Thanh Hoa province) and in the Phu Hoi island commune of An Giang province had replied with the largest errors on the travelled times (t) and distances (d). These errors were 16 - 17% on (t) and 27 - 30% on (d) respectively. This compared with good accuracy of 1.9% (t) and 3.6% (d) for Na Nghiu commune in Son La province.
- With regard to sex, the (d) and (t) estimate errors by women were higher than the ones by men (In Thanh Hoa province, the (t) estimate errors by women were 1.2 times as high as than the ones by men; and over twice regarding to the travelled distances).
- With respect to age, the adults estimated better than the children. However, the elderly people (over 60 years old) estimated with quite high errors, which were usually over 20%.
- There was a close correlation between (t) and (d) errors and some indicators, such as a number of motorbikes per capita, occupation, education level, condition of the transport infrastructure, sex, age etc... The higher education levels, larger frequency of visits (for trading purpose), having higher living standards make the (t) and (d) estimating skills better with lower errors.
- Among the factors as mentioned above, the education level factor has a relative significant impact to the (t) and (d) estimated errors. In particular, the local people in Phu Hoi island commune of An Giang Province had low education levels. The illiterates accounted for 29% of the interviewees of this commune. They made the highest errors – 29% for (t) and 17% for (d).

3. Recommendations

- In some mountainous localities, rolling terrain, or locations having high poor household rates (as in Trieu Thanh commune of Thanh Hoa province), the local people usually only have a vague perception on time and distance, as accurate measurement of these factors is not relevant to their daily lives. They have very poor estimating skills for these travel indicators. Therefore for future surveys, the most reliable recommended time measurement units in some circumstances may have to be based on familiar indicators such as the sun position (sunrise: 4- 5 am, midday: 12 am, afternoon: 15- 18 pm), or by the “cockcrow” (The first time is at about 3 am; The cockcrow also occurs at 4- 5 am).
- Due to rare involvement in interviews of the local people, the methodology for interviewing questions on the traveled times (t) and distances (d) therefore should commence with a general and confidence-building introduction, followed by a determination of the interviewee’s actual perceptions and estimating skills on (t) and (d). The interviewees, who are able to estimate well, would be asked about travel practices in detail. The remaining people would be questioned and allowed to provide their responses in a very simple way, so that they could understand.
- Due to having 8 economic sub–regions in Vietnam with nearly 10,000 communes, the SEACAP 22 has investigated only 6 communes under three of the various terrain categories found in Vietnam. The consultant suggests that the SEACAP will support initiatives to expand the survey methodology in a follow up stage 2 of the time and distance investigations.
- The SEACAP is recommended to arrange support for funding the expansion of the SEACAP 022/001 to 5 other sub-economic regions of Vietnam with different characteristics.
- Based on the collected data from the surveys, The Government of Vietnam and donors are recommended to support with further funding in order to update these surveys every 2 -3 years. Such regular surveys would greatly increase the knowledge base of the transport needs of rural and disadvantaged communities, and the impact of road improvement initiatives and related poverty reduction.

MAIN REPORT

I. OVERVIEW

1.1 National Background

Area and population. Víetnam has a total area of over 320,000 sq.km, with a population of 82 million people; of which, rural people account for 76%. Currently Vietnam comprises 64 provinces, 578 districts and 9,012 communes. Based on the distinctive features of terrain and social economic development, Vietnam is divided into 8 sub-economic regions, including: North - East (11 provinces), North - West (4 provinces), Red River Delta (11 provinces), North Coastal Region (6 provinces), South Coastal Region (6 provinces), Central Highlands (5 provinces), South - East (8 provinces) and Mekong River Delta (13 provinces).

60% of the total population of Vietnam live mainly in three sub-regions: Red River Delta, Mekong River Delta and South - East. The ethnic minority people account for 14% of the total population. Most ethnic minority people live in 4 sub-regions: North - East, North - West, South Coastal Region and the Central Highlands. In particular, the North - West sub-region has a high rate of ethnic minority communities, accounting for 79% of the total population within the sub-region.

The 15 poorest provinces of Vietnam are mainly located in 4 sub-regions: North - West, North - East, North Coastal Region and Central Highlands. Poverty is influenced by the predominant local characteristics in terms of terrain and geographical location/isolation.

Economic growth: Due to the high and continuous national economic growth rates within the last decade (approximately 7% per year). Vietnam has attained great achievements in poverty alleviation.

Poverty reduction has been one of the most successful achievements of Vietnam's economic development in recent years. Based on the survey results of the General Statistics Office, in the latter part of the last decade, 58% of the total population of Vietnam was below the poverty line. But in 2004, this indicator was reduced to 24.1%; and the poverty rate on foods and grains was also reduced from 13.3% in 1999 to 9.9% in 2002 and to 7.8% in 2004. Thus, the Government of Vietnam (GOV) had achieved the millennium objective on poverty reduction ahead of time compared to the intended 10 years target period.

The Comprehensive Poverty Reduction and Growth Strategy (CPRGS) was approved in May 2002 by the Government of Vietnam – the CPRGS is strongly supported by the International Donors. One of the objectives being set in the CPRGS is to ensure infrastructure development for the poor.

Investment in transport, in particular in rural roads, is considered a way to facilitate accessibility to markets, income – creating activities, and social services, for example schools, health care centres, as well as other social development needs within the remote areas. Rural transport contributes to rural access improvement, effectively promoting economic growth and poverty reduction of the society. Within the past 5

years, the investments in rural transport achieved nearly 1% of the annual GDP. On average, the number of poor households reduced from 1-1.5% per year.

1.2. **Rural transport**: Due to the efforts of the GOV to implement the above CPRGS and the significant support from the donors, currently, the rural road network comprises over 178,000 km, serving all areas of the country.

As a result, by the end of 2005, Vietnam has 8,690 communes with roads to commune and commune cluster center (accounting for approximately 96.3% of the total). The remainder being 290 communes without basic access roads (BAR). The communes without automobile roads to commune and commune cluster center are mainly in the Mekong River Delta and river areas. The road construction in these areas is extremely difficult due to distance from conventional construction materials sources, weak sub-grades and incidences of flooding. Many bridges require construction. The river waterways are well developed in these areas, however further rural road development will require facilitation.

There are also a small number of communes without roads in the high mountainous areas, with extremely harsh terrain, sparse population and long lengths of roads required to be constructed to serve these small communities.

The accessibility to roads and public transport services of the sub-economic regions varies significantly.

Based on the surveyed results of GSO on VLSS in 2002, of villages without roads the average distance to the closest road is (1.7 km) within the Red River Delta and the South East sub-regions. This distance is furthest (11.6 km) in the Central Highlands. The average distance of the whole country is 5.28 km. Additionally, the average distance from a village without public transport services to the closest passenger transport station is (2.95 km) in the Mekong Delta region. This distance is furthest (11.05 km) in the North - East sub-region; in the North Coastal sub-region : 7.5 km and in the North - East sub-region : 10.1 km. The average distance for the whole country is 7.46 km.

In order to reduce the differences between the sub-regions and integrate the rural areas into the economy of the country, the required investments in rural transport for the next decade are substantial.

However, due to limited resources, a defined necessity is to invest effectively in transport utilizing selection and prioritisation. Thus, the investment priorities must take into account such features as poverty distribution and rural economic growth potential. The two major factors to be found affective in bringing benefits to the poor, are as follows:

- Linkage of the local road network to the provincial and national roads, serving poor communities.
- Availability and allocation capacity of rural public facilities within the locality.

Therefore, the investment preparation study process on rural access improvement should commence with defining the actual requirements, movement model and accessibility of rural people. The survey in the communes/ villages and households can provide useful information on actual requirements, as well as opportunities to meet the access needs of people. To achieve effective investment programmes, the accuracy of statistical and surveyed data on rural accessibility to production and consumption locations and community facilities plays a vital role.

2. STUDY OBJECTIVES

The objectives of the South East Asia Access Programme – SEACAP, funded by DFID (Department of International Development – UK based) are as follows:

To help and support developing countries to make the optimal decisions on providing rural access to remote poor communes.

To improve sustainability and affordability of rural access to poor countries.
To create opportunities for pro-poor growth and poverty alleviation.

The objective of Time and Distance Study in Vietnam is data collection on travel time (t) and travel distance (d) – directly through household surveys with local people's participation in 3 typical provinces for 3 terrains (mountains, delta and plains) of Vietnam. Based on that, the movement model, accessibility of people are analysed and assessed. The analysed data also includes the assessments of statistic reliability to improve the quality of statistics. That is one of the priorities for various international investment initiatives. The results obtained will also support developing a WB guidance note for statistics improvement to better reflect development outcomes.

3. STUDY SCOPE

Based on the TOR: "Surveys will be undertaken in differing areas of terrain including mountainous, plain and delta", The consultants have selected 3 typical provinces representing the 3 terrains, and are as follows:

- Mekong Delta sub-region (representing delta terrain): Two communes have been selected: Da Phuoc and Phu Hoi, under An Phu district of **An Giang** province.
- North - West sub-region (representing mountainous terrain): Two communes have been selected: Na Nghiu and Chieng Khuong , under Song Ma district of **Son La** province.
- North - Coastal sub-region (representing flat terrain): Two communes: Minh Dan and Trieu Thanh, under Trieu Son district of **Thanh Hoa** province.

4. METHODOLOGY

The Study has included desk research activities in the office headquarters and investigations in the field.

Desk research activities in the office included: Preparation and design of questionnaires, consultations with relevant agencies, collected data entry, data analysis and preparing reports.

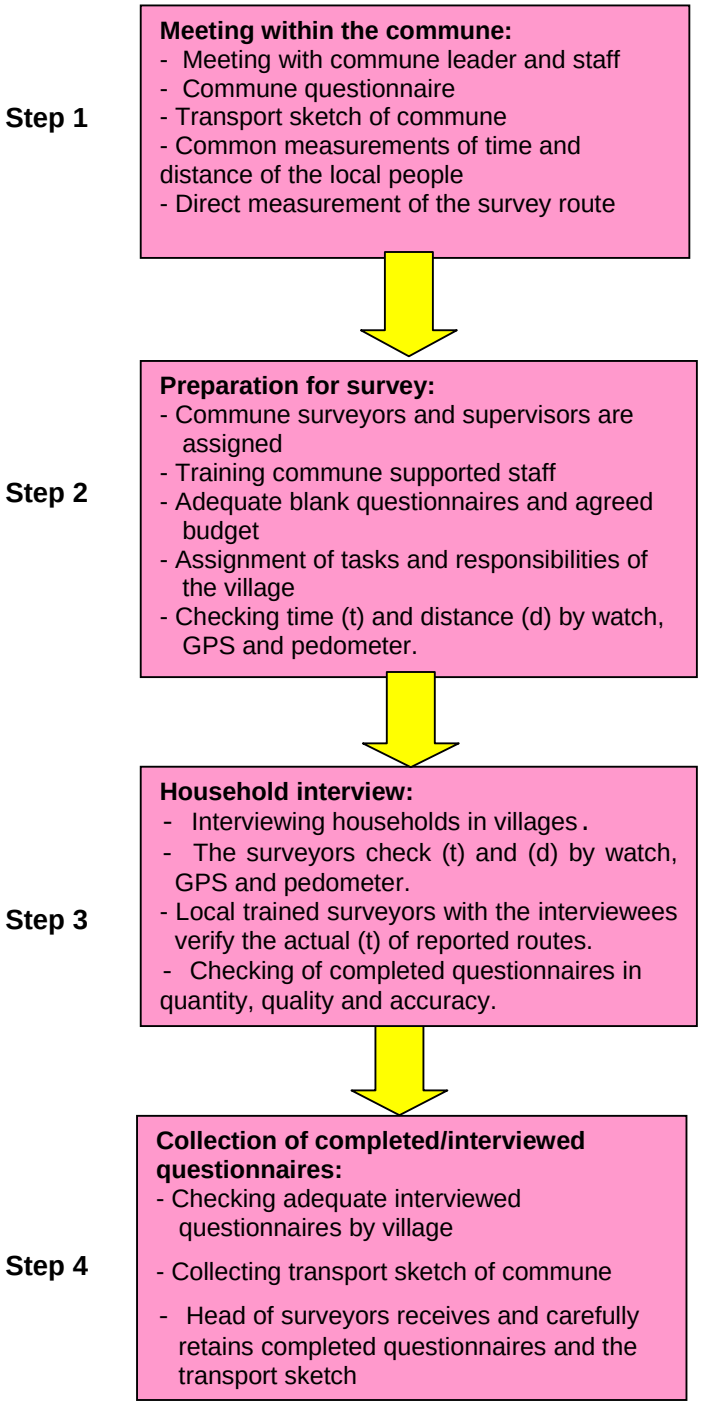
Survey activities in the field included: Meeting with authorities at province, district levels and especially at commune level on major socio-economic issues, issues related to the survey, survey activities, household direct interviews and household member interviews, by questionnaire samples agreed with project management agencies in Hanoi.

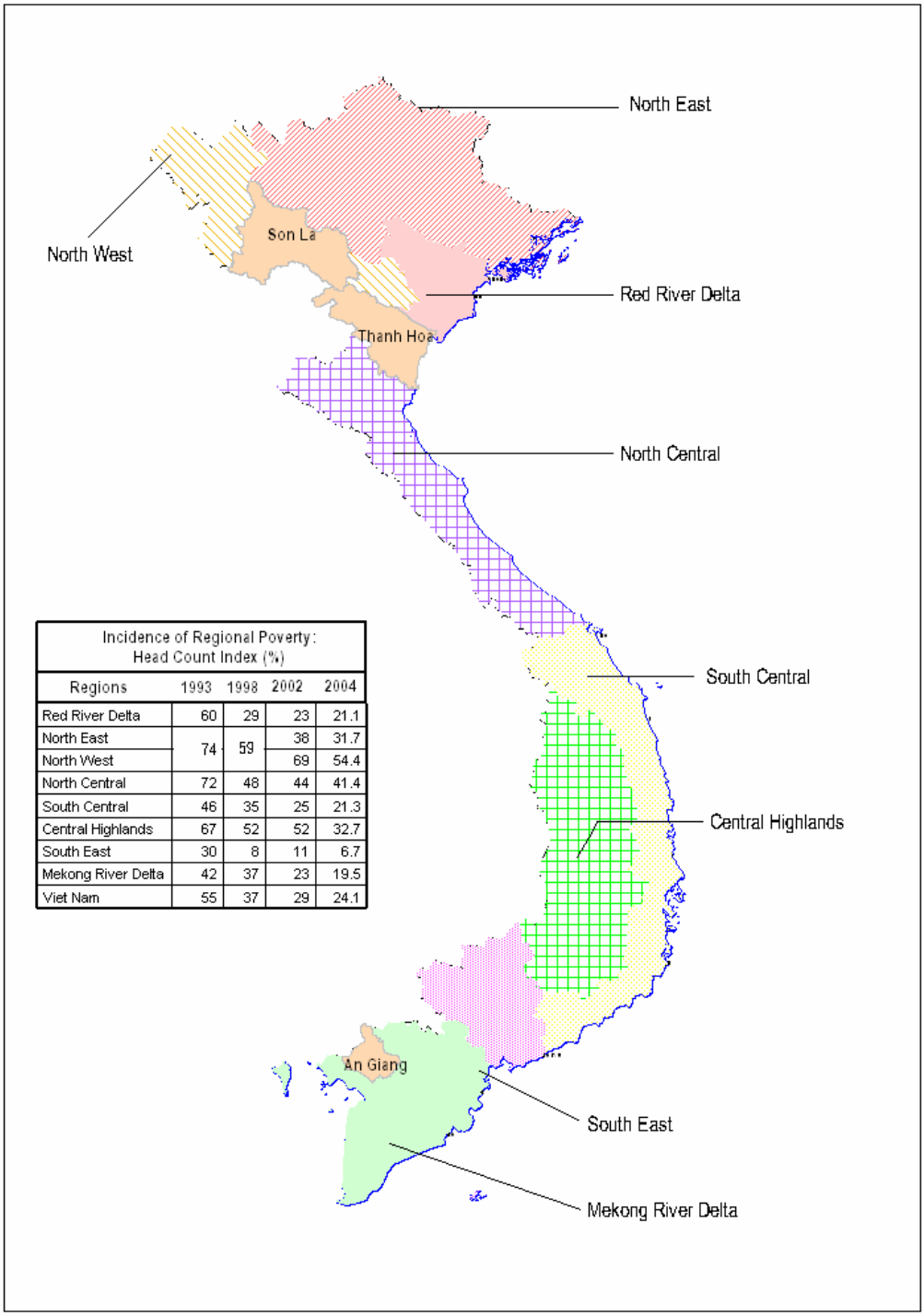
Data collection

Usually, two kinds of data need to be collected for analysis purposes: primary and secondary data. Primary data are those collected first hand, by a numerator in the community. Secondary data refers to available semi-processed data already processed and compiled for a variety of other purposes.

Primary data is the first hand data and needs to be collected directly from village representatives. The household surveys in communities or villages requires resources namely, organizational time and costs, as well as the efforts of surveyors. The support of local authorities and commune staff is a necessary and important factor to ensure the success of the surveys.
The implementation process of this Study is presented in Figure 1, following:

The survey was implemented in 4 steps, as following:





Incidence of Regional Poverty: Head Count Index (%)				
Regions	1993	1998	2002	2004
Red River Delta	60	29	23	21.1
North East	74	59	38	31.7
North West			69	54.4
North Central	72	48	44	41.4
South Central	46	35	25	21.3
Central Highlands	67	52	52	32.7
South East	30	8	11	6.7
Mekong River Delta	42	37	23	19.5
Viet Nam	55	37	29	24.1

map regions of viet nam

5. METHOD AND PRACTICAL MEASUREMENT TOOLS OF SURVEYORS

The survey team directly measured the necessary distances, using: automobile odometer, GPS, and wrist watches for measurements of time. In places that were not accessible by automobile, but passable by motorcycle, the distance was measured by motorcycle odometer and GPS. This data was used for verification and analysis of adequacy of the respondent's answers to detailed questions. In addition, in order to measure the practical times of the routes, the surveyors have trained the local staff in verifying the practical travel times and distances together with the surveyors. The sample rates for each route type is from 40 to 50% of the total routes.

6. FINDINGS

6.1 Findings drawn from qualitative study

Village and commune selections for survey executions: This activity was carried out by the survey team in consensus with the PDOT staff. The selections were decided upon based on the project objectives. However in Son La province, due to the terrain features of the high mountains, the access and activities were expected to be very difficult, especially on rainy days. Moreover, many ethnic minorities of the province have specific cultural sensitivities and on occasions are difficult to gain access to. Due to these circumstances. The selection of villages and communes was recommended by the PDOT staff based on local knowledge. Ultimately, the selected villages and communes were not found to be too problematic with regard to accessibility.

6.1.1. Distinctions between surveyed provinces

Transportation infrastructure and network linkages

Minh Dan commune of Thanh Hoa province has the best road network and the best transport linkage in the province. The commune roads are bituminous with constructed drainage alongside. All village roads are bituminous or concrete, In the commune, a passenger station under the district management has been constructed. Therefore, travel to destinations outside of the village is easy.

Trieu Thanh commune of Thanh Hoa province has a road network in very bad condition. The roads have been constructed to basic standards and reasonable coverage. All villages have roads. The commune has two major roads: the first one is a provincial road, running through 4 villages (villages No 1, 3, 10 and 11). This road is totally earth, 6 m width; The second one is the commune road, running through 4 (villages No 4, 5, 6 and 7). This road is also earth, 4 m width. The other villages have roads connected to the major roads of the commune. Although all villages have roads, these roads are in a very bad condition. The roads are seriously affected by the weather including natural disasters (in the flooding and rainy seasons). Therefore, the journeys of local people are very difficult in the rainy season. In this period, the local people travel within village mainly on foot. The other transport means, such as: bicycles, motorbikes cannot be used in wet conditions.

Rural Road Trieu Thanh commune

Da Phuoc commune of An Giang province has a road network in very poor condition. The roads to the commune centre are to basic earth standard. The material being clayey, they are very slippery and muddy in the rainy season. In the dry season, the road surfaces are bumpy with many deep pot-holes. In some sections, the remaining assessable sections of road surface are 30-40 cm width. The sub-grades and surfaces are seriously deteriorated. The road level is low compared to the surrounding ground. Every year, in August, September and October, the whole commune is flooded, as are the roads. The school pupils are prevented from accessing their school. Journeys of local people are difficult.

Phu Hoi commune of An Giang province is an island commune. Therefore, its road transport linkage is naturally poor, however the roads within the commune are in better condition than those in Da Phuoc commune (which is not an island commune). The major commune road is 5m - 6m width. The sub-grade is stable and higher than the river water level by approximately 5 - 7m. This road is dry; it is not flooded in rainy season. The road is passable all year round.

Cu Lao – Phu Hoi - An Giang Commune

Rural Road Phu Hoi commune

Na Nghiu commune of Son La province has a good transport linkage. A provincial road and a highway 4G run through the commune. The road sections in the commune are heavily degraded. These roads are almost all to earth standard. The major roads have a narrow surface of 4 - 5m width. Automobiles heavily deteriorate the road surfaces, therefore they are very uneven. The roads to the villages and the hamlets are in the similar condition. In the rainy season these roads are not passable. The paths to houses on the hill slopes are very narrow and slippery.

Chieng Khuong commune of Son La province has a good transport linkage. The major road of the commune is the highway 4G. Currently, this highway has been under construction to upgrade its condition; therefore the journeys are very dusty and uneven. All village roads are earth construction and are in a similar condition to Na Nghiu commune. All public service facilities are located alongside the highway 4G. Therefore, journeys are easy. The commune does not have a permanent public bus station, therefore the local people "hitchhike" alongside the road.

Highway 4G in district Song Ma – Son La Province

Features of residential areas – survey organization

In Thanh Hoa and Son La provinces, the population distribution is typical of the villages of the North region ; i.e. there are major village roads and paths leading to houses. With the assistance of the commune staff, the meetings of the local people for training and for the interviews, were easy to organize and were held in the village cultural houses.

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In An Giang province, due to the features of the Mekong Delta sub-region and the very high density of water channels, the local people mainly live alongside roads. They do not live in villages as in Thanh Hoa and Son La provinces. The distances from the households to the village culture house are generally too far for the consultation of the local population. Therefore, the organization of meetings in a

particular site is not reasonable. The surveyors had to go to each household or organize small groups of from 3- 4 people to interview.

Interviewed and regional Characteristics

In Thanh Hoa and Son La provinces, the interviews took place in the off-farm season therefore all of representative groups were interviewed. In An Giang province people of working age were working during the day time, most of interviewees were elderly people who are less capable to work. In order to meet the project requirement on sample patern, the consultant had to do interviews in the night time. Even though, the sample was not as good as expected.

Phu Hoi commune of An Giang province is a commune bordering Cambodia. In 1979, the commune suffered from the ravages of the Pol Pot exterminatory regime from that country. Each household had members killed on April 11th 1979. Each year, this day is remembered as the anniversary of the deaths of the whole commune. Subsequently, since 1980, many people have migrated from other regions to the commune. These new migrants were not provided with fields. They therefore, mainly do contract work away from the village. Many local people do the hired farming work in Cambodia or they become the hired porters at the border gate.

Song Ma district of Son La province: During the 1960's , the migration of a whole village under Hung Yen province (close to Hanoi) occurred. Therefore, the majority of local people of the Kinh group and are of Hung Yen origin. The ethnic minorities mainly are of the Thai group, which are one of the more educated ethnic minorities, following the Kinh majority. Due to the border with Lao PDR, many local people have been involved in business activities.

Training, interview HH in Thanh Hoa

Training, interview Household in Son La

Perception on Time and Distance of rural people

The local people living in the communes, which have a good linkage and roads in good condition, are generally familiar with the use of minutes and hours.; and metres and kilometres. (as in Minh Dan commune of Thanh Hoa province, and 2 communes of Son La province).

Contrarily, in communes, which have a bad linkage and roads in bad condition and whose households are less informed (as in Trieu Thanh commune of Thanh Hoa province and 2 communes of An Giang province); the surveyors have been required to spend more time to explain and support the local people, so that they can understand the study objectives, the meaning of questions and reply to the questions. Moreover, while the surveyors facilitated the discussion, the local people discussed by themselves their replies to the questions. A predominant feature is that, most local people are not interested in the required travel time for a specific journey, they are interested only in the time taken to complete the works. Many old people and ethnic minorities use time measurement units such as “half a day”, “the position of the sun”, or “the signal of a cocks crowing” (the morning, the afternoon, half the morning and half the afternoon), or (from the cocks crow to past noon)**.** Although local people use metres and kilometres as distance measurement units, however they estimate the distance with great differences in accuracy. This perhaps reflects the lack of need for exact measurements of these parameters in their daily lives.

6.1.2 Features of Vietnam rural life affecting the accurate estimation of travel times and distances.

80% of the total rural population are farmers and mainly cultivate paddy. Because the agriculture production relies substantially on climate, so the farmers are not in full control of the achievements. They are very busy in a certain periods of time, but they

have free time in another parts of the seasonal cycle. The time measure units of minute or second are not important to the rural people. They are not under the pressure of accurate time measurements Their time measure units are the crop, month, year and season. Therefore, the exact time estimation capability of farmers in terms of minutes or hours are very limited and un-necessary for their daily lives.

Most trips of the rural people are usually combined with many other activities, Many activities are done casually on the way. For instance, on the way to the market, when they see the green grass, they may stop to cut the grass for buffaloes; and then they continue going to the markets. The surveyors verified the direct route travel times for the sole purpose of going to the markets. However in reality, people often went on longer routes, and it took more time, because they concomitantly did many other work or activities.

Most local people are interested only in the completion and purpose of their work. For example, for fetching fire-wood, they could only estimate the time spent from leaving home until coming back. They had no interest in the travel time and distance to the forest gates, this was verified by the surveyors.

Each individual replied differently to the same questions on travel time, although the distances were similar. This is explained by, the terrain of Trieu Thanh commune of Thanh Hoa province is diversified (flat, mountainous and valleys). People living in the high mountains spend more on their travel time than those of people living in the low areas.

Due to the limited economic situation and their isolated environment, the local people are rarely able to utilise odometers.. They are also not used to estimating distances in metres or kilometres.

Many households are extremely poor. Many people do not have clocks or watches or understand them. Therefore most people have no perception of measured time (hours and minutes).

6.2. Findings drawn from quantitative study by statistical method.

This study section is aimed at identifying the distinctions between the communes having a developed road network with a good linkage to the transport network, and the communes having a less developed road network, with a worse linkage, being obtained through the interviewed data.

6.2.1. Distinctions on social economic and natural conditions between the selected provinces.

Table 6.1 following indicates the major distinctions in social economic and natural conditions for the three selected provinces. These distinctions are originating from a number of related factors, such as: terrain, density of population, average incomes, poor household rate and accessibility. The details are as follows:

Terrain: Covers three different terrains: mountainous, flat and delta.

Density of population: The densities of population vary from province to province, ranging between 69 people per sq. km (Son La province) to 637 people per sq. km (An Giang province). Rural natural resources create income and economic potentials. The average incomes per capita vary substantially, from 1.6 million (Son La province) to 7.1 million.VND per person per year (An Giang province).

Poor household rate: The differences between provinces are considerable, from 4% of An Giang province to 40% of Son La province.

Accessibility: The rate of communes without roads to the commune centre varies from 2% of Son La province to 10% of An Giang province. However in the latter case, the communes without roads to the commune and the commune cluster center could be accessed by the waterways.

Table 6.1: Indicators of the distinctions between the surveyed provinces (in 2004)

No	Indicators	Unit	Name of Province		
			Son La	Thanh Hoa	An Giang
1	**Land use**				
-	Area	Km^2	14,055	11,116	3,406
-	Terrain		Mountainous	Plain	Delta
2	**Population**	1,000 people	972.8	3,824.8	2,170.1
-	Density of population	People /sq.km	69	328	637
-	Ethnic minority percentage	%	82	14	6
3	**Economic situation**				
-	GDP per capita	1,000 VND	1,652	3,862	7,190
-	Paddy per capita	Kg/person	360.7	429.6	1,415.6
4	**Poor household rate**	%	43.9	39	4
5	**Transport**				
-	Density of roads	Km/sq.km	0.340	0.730	0.9
-	Percentage of communes without automobile roads to the Commune Centres	%	2	2.7	10

Source: National Statistics for 2004 and Updating RTSS

6.2.2. Distinctions on social economic and natural conditions between the selected communes

Table 6.2. Indicators of the distinctions between the surveyed communes

No	Items	Unit	Thanh Hoa		An Giang		Son La	
			Minh Dan	Trieu Thanh	Da Phuoc	Phu Hoi	Na Nghiu	Chieng Khuong
1	**Land**							
	Area	km^2	3.3	11.4	16	20.26	102	86.4
	Terrain		Plain	mountainous	delta	delta	mountainous	mountainous
2	**Population**	people	3,544	5,513	21,123	13,413	11,875	9,915
	Density	People /km^2	1,074	483	1,315	662	116	115
	Ethnic minority percentage	%	0	23	6.9	0	77.1	14
	Total Hamlets	hamlet	7	11	4	3	34	20
	Surveyed hamlets	hamlet	4	5	2	2	3	2
3	**Economic**							
	GDP per capita	1000^d	5,000	3,500	6,000	4,000	2,400	3,500
	Paddy per capita	kg/ people	590	485	695	1,047	319	350
4	**Poor rate**	%	18	55.2	17	19.1	48	28.8
5	**Rate of households with permanent house (tile roof, brick house)**	%	98.6	70	3	2.4	5	20

Source: Households Survey of SEACAP 022/001

Minh Dan commune of Thanh Hoa province has a road network in good condition and good linkages to the highways and provincial roads. The commune is located

adjacent to an urban area, near to the industrial zones and the trading areas.

The two surveyed communes of Son La province and Trieu Thanh commune of Thanh Hoa province have good connectivity. However, the rural roads are in bad condition.

The two remaining surveyed communes: Da Phuoc and Phu Hoi of An Giang province, have rural road networks in bad condition, with bad connectivity.

If scoring from 1 to 3 in order of the convenient level of the rural transport infrastructure (including the connectivity to the network and the condition of rural roads), Minh Dan commune (Thanh Hoa province) was placed first; the two communes of Son La province were placed second; Trieu Thanh commune of Thanh Hoa province and two communes of An Giang province were placed third.

Table 6.3. Assessment of rural transportation infrastructure in surveyed communes

Province	Commune	Rank of the Rural Transportation Infrastructure (From 1 to 3)		
		connectivity	Quality	General
Thanh Hoa	Minh Dan	1	1	1
	Trieu Thanh	2	3	3
An Giang	Da Phuoc	2	3	3
	Phu Hoi	3	2	3
Son La	Na Nghiu	1	2	2
	Chieng Khuong	1	2	2

Source: Assess of consultant - SEACAP 022/001

The condition of a rural road network is just one of the factors to create the distinctions between the surveyed localities, areas, communes and villages. The distinctions between the areas having rural networks in good condition, with good linkages and the areas having rural networks in bad condition, with bad linkages may be influenced by the following indicators:

Gross Domestic Products (GDP) of communes

There are very clear differences between the average income per capita. In Minh Dan commune of Thanh Hoa province, the average income per capita is from 1.4 to twice as high as Trieu Thanh commune of Thanh Hoa province and in the 2 communes of Son La province. The local people in the two communes of An Giang province have average incomes which are similar to that of local people in Minh Dan commune. A contributory reason is that these communes have the advantageous features of the Mekong River Delta sub-region (Delta region); being the “granary” of the country, having a developed waterway network and water transport services to complement the road network (See Table 6.4 concerning water craft ownership). The poor household rate also exhibits a correlation to that of the average income. (Refer to Table 6.4)

Transport means

The indicator on transport means owned, is a clear indicator. The communes which have a rural road network in good condition and good linkage to the provincial roads and highways, where the poor household rate is low; then the number of motorbikes per capita is high. This number of motorbikes per capita in Minh Dan commune of Thanh Hoa province, and Chieng Khuong commune of Son La Province is about 3 to 10 times as high as that of other communes. (Refer to Table 6.4).

Table 6.4: Comparison of major socio – economic indicators between communes of the surveyed provinces.

Provinces	Order	Commune name	GDP (Billion VND)	GDP per capita (1,000VND)	Poor Household rate (%)	Number of motorbikes per capita
Thanh Hoa	1	Minh Dan	17.7	5,000	18	0.102
	2	Trieu Thanh	19.3	3,500	55.1	0.018
An Giang	3	Da Phuoc	127	6,000	17	0.03
	4	Phu Hoi	53	4,000	19	0.029
Son La	5	Na Nghiu	28.5	2,400	48.4	0.06
	6	Chieng Khuong	34.7	3,500	28	0.099

Note: Exchange Rate May 2006: US$1 = 15,900VND
Source: Commune staff survey of SEACAP 022/001

Social background of Interviewed people
Table 6.5 indicates that, the interviewee's structure varies significantly between the surveyed communes. The details are as follows:

Sex: Within the poorer areas, there is a lower rate of interviewed females. This rate ranges between 30% - 53%.

Age: In Thanh Hoa province, no interviewee was in the age range from 12 to 25 years old. In An Giang province, the rate of the interviewees of this age range accounted for over 10% and in Son La province - under 10%. The age of the interviewees mainly ranged between 26 – 55 years old.

Educational level: No interviewee in the three surveyed provinces had achieved the education level higher than high school. They mainly achieved an education level of secondary or high school. There were incidences of illiterate people. No illiteracy was found in Minh Dan commune of Thanh Hoa province. The highest rate of illiterate people was in Phu Hoi commune of An Giang, accounting for over 29%.

Occupation: The local people mainly were farmers (accounting for 80% overall). However, in An Giang province, the farmers accounted for only 50%. Due to the significant rate of hired workers in this province; accounting for over 20% (the local people are able to carry out a variety of works, such as: hired farmers, hired porters, hired construction workers etc. Predominantly they were mainly hired farmers). However, there were distinctions between the rate of small traders. In Thanh Hoa province, this rate was not significant (1%); But in Da Phuoc commune of An Giang province, this rate accounted for 14%. The highest rate was in Chieng Khuong commune of Son La province, accounting for 18%.

Incomes: The rate of the interviewed poor households was relatively high. But, it varied considerably from commune to commune: The rates in Minh Dan commune and two communes of Son La province were similar, between 18% to 24%. In Trieu Thanh commune of Thanh Ho province and 2 communes of An Giang province, these rates ranged between 43% to 67%.

Ethnicity: In communes of Thanh Hoa and An Giang provinces, the interviewees from the Kinh group accounted for 99.5%. In two communes of Son La province, the Kinh people accounted for only 45%; the remainder were of ethnic minority. The ethnic minorities were mainly from Thai group. In some villages, all were from Thai group (accounting for 100% of the non-Kinh).

Table 6.5: Social background structure of interviewee

Unit: %

	Indicator	Thanh Hoa			An Giang			Son La		
		Minh Dan	Trieu Thanh	Total	Da Phuoc	Phu Hoi	Total	Chieng Khuong	Na Nguu	Total
Sex	Males	47	70	58	68	56	62	69	62	66
	Females	53	30	42	32	44	38	31	38	34
	Total	100	100	100	100	100	100	100	100	100
Age	< 12 years	0	0	0	0	0	0	0	0	0
	12 – 25	0	0	0	9	13	11	4	8	6
	26-55	80	80	80	73	70	71	83	74	78
	>56	20	20	20	18	18	18	13	19	16
	Total	100	100	100	100	100	100	100	100	100
Education	Illiteracy	0	3	1	9	29	19	3	2	2
	primary school	22	12	17	32	28	30	10	11	11
	secondary school	41	71	56	37	25	31	67	64	66
	high school	37	15	26	23	18	20	19	2	21
	> high school	0	0	0	0	0	0	0	0	0
	Total	100	100	100	100	100	100	100	100	100
Occupation	Farmers	81	95	88	45	62	53	67	90	79
	Workers	2	0	1	9	0	4	2	0	1
	Official	15	5	10	1	3	2	7	3	5
	Pupils, students	0	0	0	1	1	1	1	2	1
	Traders	1	0	0	14	6	10	18	3	10
	Other	1	0	0	11	2	6	4	3	3
	Hired – workers	0	0	0	20	26	23	0	0	0
	Total	100	100	100	100	100	100	100	100	100
Income	A	4	43	24	8	29	19	5	2	3
	B	15	25	20	35	29	32	19	16	18
	C	40	23	31	39	24	31	36	39	37
	D	41	10	25	19	18	18	40	43	42
	Total	100	100	100	100	100	100	100	100	100
Ethnicity	Kinh	100	99	99.5	99	100	99.5	50	40.6	45.
	Ethnic minority	0	1	0.5	1	0	0.5	50	59.4	55
	Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Household survey of SEACAP 022/001
Note: Average Expenditure per House Hold person (1,000 VND);
a - <100; b - from 101 - 150; c from 151 - 250 and d -> 250

Accessibility

Transport means

Owned transport means: The number of the interviewed households in the selected provinces were similar: Thanh Hoa province - 202 households; An Giang province – 203 households and Son La province - 204 households. Whereas, the number of

households that owned transport varied. The following Table 6.4 indicates this finding:-

Bicycles: The number of bicycles owned in Thanh Hoa province was 1.8 times as much as that of Son La province and 3.9 times as much as that of An Giang province.

Motorbikes and motor–boats: The number of these means of transport owned in Son La province was 2.0 times as much as that of Thanh Hoa province and 1.6 times as much as that of An Giang province.

Cong nong (small local manufactured truck): Was owned only in Thanh Hoa Province

Motor vehicles[1] of all kinds: The total number of motor vehicles owned by the interviewed households in Son La province were 4 vehicles (this result was unexpected), whereas no motor vehicles were owned in Thanh Hoa and An Giang provinces.

Table 6.6: Transport means owned by interviewed households

Unit Item

Vehicles	Number of vehicles		
	Thanh Hoa	An Giang	Son La
Bicycle	433	111	240
Goods Carrying Bicycle	71	1	4
Motorbike	77	31	150
Pulled Motorbike	0	0	0
Cong Nong (small local truck)	6	0	0
Car	0	0	0
Minibus	0	0	0
Large Buses	0	0	0
Light Truck	0	0	0
Heavy Truck	0	0	4
Handcart	16	2	0
Animal Cart	3	0	7
Pack Animal	0	0	0
Non- Motor Boat	0	45	22
Motor Boat	0	67	2
Other Vehicles	0	0	10

Source: Households Survey of SEACAP 022/001

Transport means use

Table 6.7 indicates: The transport mean use structure as following:

Pedestrians: Thanh Hoa province has the lowest rate of pedestrians. Its rate accounted for only 66 - 65% as that of An Giang and Son La provinces.

Bicycles: Thanh Hoa province had the highest rate of bicycle use. It was 5.3 times as much as that of An Giang province; and 3 times as much as that of Son La province.

[1] Motor vehicles in this context means motor vehicles manufactured to international standards.

In Son La and An Giang provinces, bicycles were used mainly by pupils riding to and from school.

Motorbikes and motor- boats: An Giang province had the highest rate of this means of transport.. This rate was 4.0 times as that of Thanh Hoa province; and 1.4 times as much as that of Son La province.

Automobiles of all kinds: Son La province had the highest rate of automobile use. However, this rate was only just over 4%.

Table 6.7: Structure of transport means use of households

Unit: %

Number	Vehicles	Name of Provinces		
		Thanh Hoa	An Giang	Son La
1	Pedestrian	36.4	55.1	56.4
2	Bicycle	50.7	9.5	16.5
3	Motorbikes	8.1	23.5	21
4	Automobiles	1.4	2	4.2
5	Motor–Boat	0	8.5	1.2
6	Others	3.4	1.4	0.7
Total		100	100	100

Source: Households Survey of SEACAP 022/001

Travel frequency

Travel frequency: The use of the transport infrastructure reflects not only the selections of the used means of transport but the travel frequencies (i.e. regularity).

The highest daily, weekly, monthly, quarterly and yearly *frequencies of trips* were in the two plains terrain communes of Thanh Hoa province. The lowest frequencies were in the two delta communes of An Giang province, accounting for only 50% of the ones in Thanh Hoa province. These frequencies of the mountainous Son La province accounted for only 66% of the ones in Thanh Hoa province. The travelling frequencies were low in the two delta communes of An Giang province, because: one out of the two communes is an island commune and was connected to outside destinations by a ferrry, which was not passable by automobiles; the other commune had an inconvenient transport connection. It was connected with the outside by a ferry, which was passable by only medium automobiles

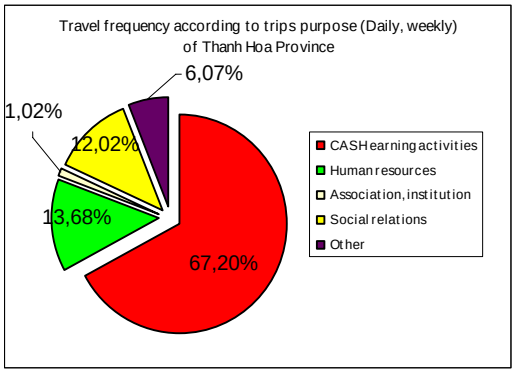
With regard to the frequencies by trip purposes:
The travelling frequency structure by trip purpose did not vary much from commune to commune in the same province. But it varied somewhat from province to province. The trip purpose analyses of the three surveyed provinces were as follows:

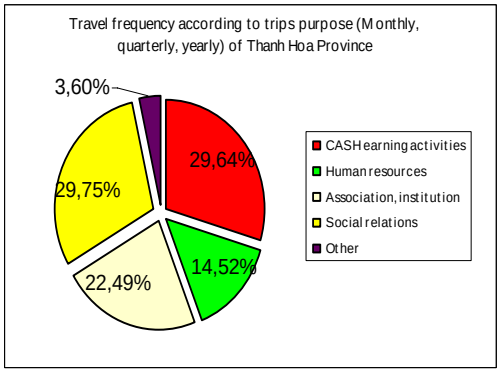
- The daily and weekly frequencies for cash- earning purposes (to the fields to work and harvest, to working places) had the highest value, accounting for 58 - 72% of the total of trips. Human resources activities *(Education: Primary school, Middle school, High school; Health care: Come H. Station, District Health Centre; Hospital)* accounted for between 14 and 19% of trips. The frequencies for maintaining social relations accounted for 10 - 12% of the total. The frequencies had the lowest value for meeting purposes, accounted for 1% or less of the total.
- For the monthly and quarterly frequencies for maintaining social relations (visits to relations, going to weddings, funerals, etc.) had the highest value, accounting for between 30 and 45% of the total of trips. The frequencies for cash earning activities accounted for between 20 and 30% of the total. Human resources activities

accounted for 14 - 15% of trips.The frequencies for meeting and association purposes accounted for 19 - 23% of the total. The diversity of the travelling frequency characteristics by trip purpose is presented in Figure 2 following.

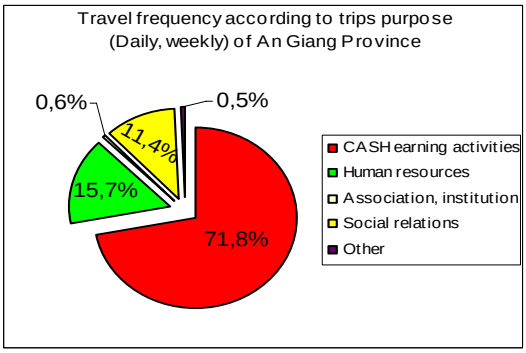
Figure 2: Travel frequency according to trips purpose by province

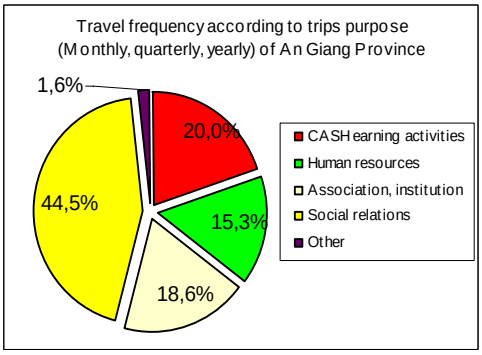
Trip purpose averages Thanh Hoa Province:



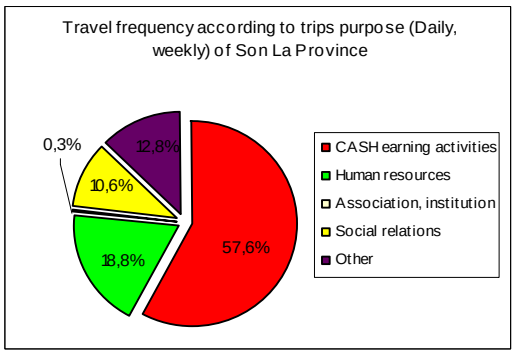


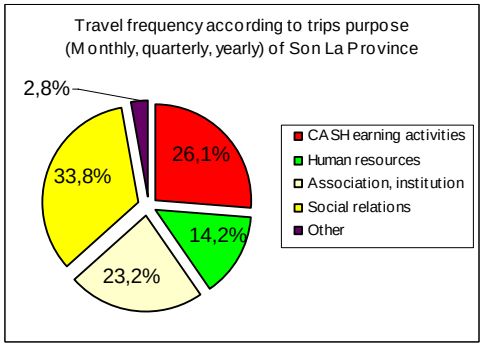
Trip purpose averages An Giang Province:





Trip purpose averages Son La Province:





With respect to the journeys made to the provincial centre: The provincial centre could be regarded as similar in role to small cities, being close to the rural areas. **Table 6.8 indicates** the significant changes in frequencies of journeys to the provincial centre of the surveyed communes. Thanh Hoa residents made the most frequent trips to provincial centres, followed with considerably less frequency by An

Giang residents. Son La province community residents made the least number of trips to provincial centres each year

Table 6.8: Total of trips to the provincial centres of communes

Provinces	Communes	Travel frequency				
		Daily	Weekly	Monthly	Quarterly	Yearly
Thanh Hoa	Minh Dan	2	7	10	34	60
	Trieu Thanh	0	0	4	10	56
An Giang	Da Phuoc	0	2	5	3	16
	Phu Hoi	2	0	0	1	17
Son La	Na Nghiu	1	0	1	6	44
	Chieng Khuong	0	0	2	3	51

Source: Households Survey of SEACAP 022/001

Travel distances

Average distances by purpose of journey

- The average distances from households to locations made in order to maintain social relations are longest of all categories of journey. The furthest average distance was in Son La province (16.5 km); the following was An Giang province (7.6 km); and the nearest distance was in Minh Dan commune of Thanh Hoa province (0.7 km).
- The average distances from households to the locations of cash earning activities were placed second. The longest distance was in Son La province (6.5 km); the following was An Giang province (5 km); and the nearest distance was in Minh Dan commune of Thanh Hoa province (2.5 km).
- The average distances from households to the other locations ranged between 0.8 km - 8 km.

The following Table 6.9 and Figure 3 illuminate the above findings.

The furthest distances by purpose of journey:

The travel distances of households made in order to maintain social relations were furthest, being 500 km in Son La province, and 33 km in Thanh Hoa province). The closest distances were for meetings, attending social activities being 2 km in Thanh Hoa province and 10 Km in An Giang province).

Table 6.9: Comparison of accessibilities through the travel distances within and outside communes.

Unit: Km

Purpose of Journey		Thanh Hoa		An Giang		Son La	
		Minh Dan	Trieu Thanh	Da Phuoc	Phu Hoi	Na Nghiu	Chieng Khuong
Cash Earning Activities	Average	2.2	3.2	5	5.2	6.5	6.5
	Longest	25	33	83	77	119	74
Education	Average	0.7	2.7	4.2	3.7	4.8	8
	Longest	3	12	14	22	113	400
Others	Average	0.8	2.9	1.1	4.2	2.3	1.6
	Longest	2	8	4	9	7	4.1
Association / Institution	Average	0.4	1	2.2	1.3	0.9	1.3
	Longest	2	5	14	10	4.9	74
Social Relations	Average	1.7	4.2	7	7.6	16.5	12.8
	Longest	3	35	380	75	500	430

Source: Households Survey of SEACAP 022/001

Figure 3: Average Distance of Journeys of Communes

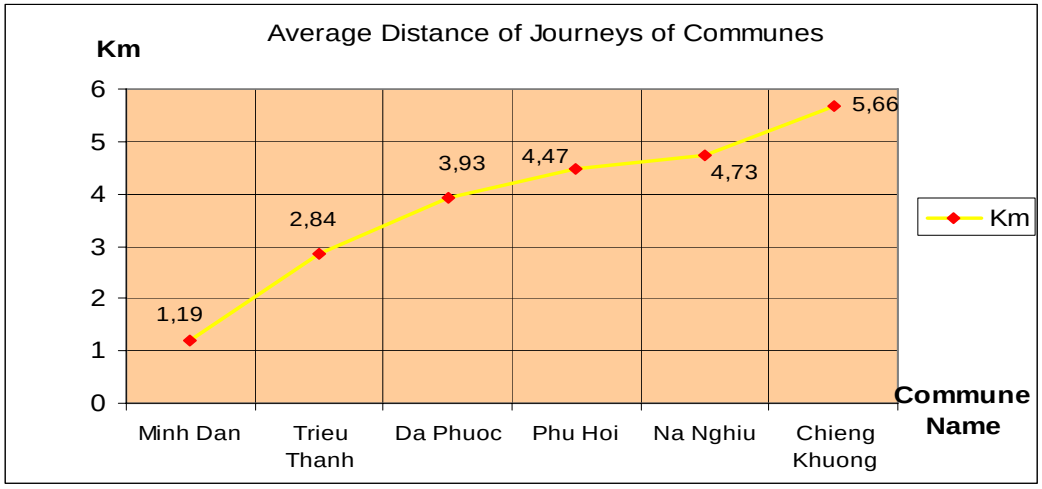


Table 6.10 indicates that:

- The distances to district and provincial centre have a great impact on the incomes of local people and poor household rates. These distances reflect the accessibility to markets. The provincial and district centres are trade hubs and have significant economic growth rates.

- The average distances were 1.4 km to schools of primary level, 2.1 km to schools of secondary level, and 3.4 km to schools of high level. The difference in the average distances to the schools of primary school and secondary school were not great amongst the surveyed communes; but this difference was significant for the average distances to the schools of high school. The nearest distance was in Minh Dan commune of Thanh Hoa province (0.8 Km). The furthest distance was in Trieu Thanh commune of Thanh Hoa province (8.3 Km).

Table 6.10: Comparison of accessibility by distances to center and schools of communes under the three surveyed provinces.

Province	Commune	Average distances (km) to				
		District centre	Provincial centre	School Grade 1	School Grade 2	School Grade 3
Thanh Hoa	Minh Dan	1.5	20	0.6	0.6	0.8
	Trieu Thanh	12	35	1.72	2.29	8.33
	Average	6.8	28	1.2	1.4	4.6
An Giang	Da Phuoc	1.5	58	2.49	5.28	6.84
	Phu Hoi	2.4	85.4	1.24	1.4	7.65
	Average	2.0	72	1.9	3.3	7.2
Son La	Na Nghiu	3	106	1.43	2.51	2.45
	Chieng Khuong	35	74	1.03	1.95	2.31
	Average	19	90	1.2	2.2	2.4
3 Provinces	Average	9.2	63	1.4	2.3	4.7

Source: Households Survey of SEACAP 022/001

Travel time

The travel times have a direct proportion to the travel distances. Normally the longer the distances are, the greater the travel times. However, the travel times greatly depend on the used transport means, sex and the health status.

Table 6.11: Comparison of accessibility by the average practical travel time by mode of transport.

Units: Km, minutes.

Transport means		Thanh Hoa		An Giang		Son La	
		Distance	Time	Distance	Time	Distance	Time
Pedestrian	Reported data	0.9	16.2	3.6	25.9	4.3	24
	Verified data	0.7	10.7	3.9	19.2	2.5	17.4
Bicycle	Reported data	3.8	26.5	5.3	32.2	9.3	30.4
	Verified data	2.3	13.7	4.9	22.4	5.4	18.3
Motorbike	Reported data	11.4	24.2	5.5	33	13.5	37.5
	Verified data	7.4	16.7	5.3	26.9	8.6	22.9

Source: Households Survey of SEACAP 022/001

Travel speed

The travel times reflect clearly the terrain features and the condition of roads in each surveyed commune: Trieu Thanh commune of Thanh Hoa province and two communes of Son La province had disadvantageous terrain and difficult travel conditions. In these localities, the speed of vehicles was lower than that of other communes. The lowest speeds were in Trieu Thanh mountainous commune of Thanh Hoa province (pedestrian - 3.7 km per hour, by bicycle – 9.7 km per hour., by

motorbike – 19.2 km per hour.). The highest speeds were in Minh Dan plain commune of Thanh Hoa province (pedestrian - 4.69 km per hour, by bicycle – 12.2 km per hour, by motorbike – 25.3 km per hour.). The differences of the highest and the lowest verified speeds for each mode were on average 25 - 30% (excluding boats, which are not comparable).

The following table 6.12 indicates the above findings.

Table 6.12: Comparison of travel speeds by means of transport of the surveyed communes

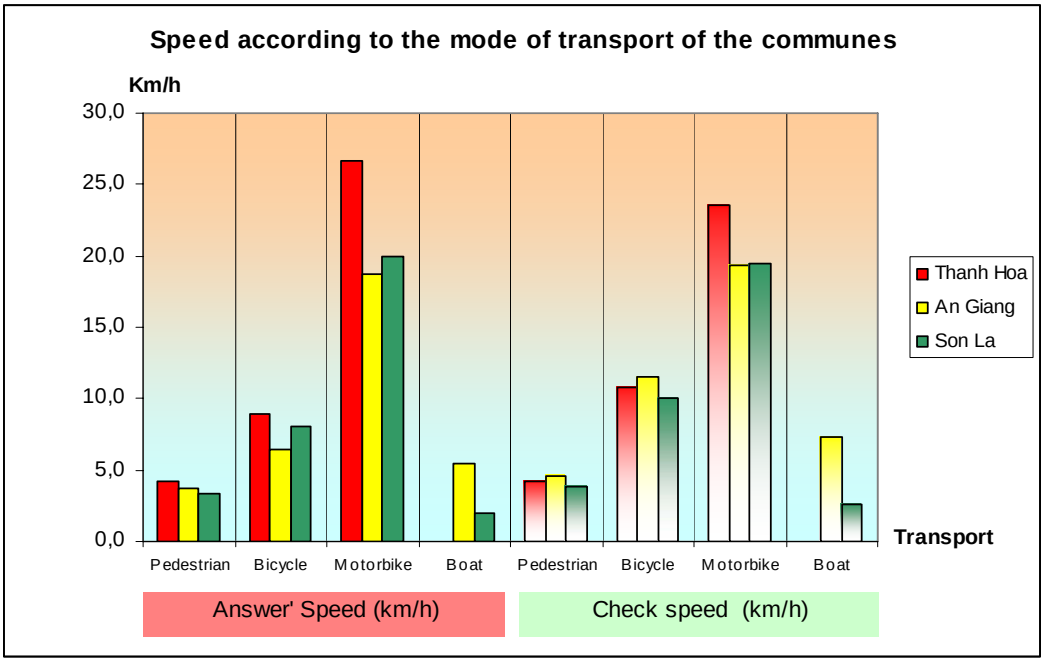
Unit: km/hour

Name of Provinces, Communes	Interviewed speed				Verified speed			
	Pedestrian	Bicycle	Motorbike	Boat	Pedestrian	Bicycle	Motorbike	Boat
Thanh Hoa	4.22	8.94	26.63		4.22	10.80	23.58	
Minh Dan	4.30	8.74	27.29		4.69	12.20	25.30	
Trieu Thanh	4.15	9.12	25.00		3.71	9.77	19.24	
An Giang	3.76	6.49	18.68	5.41	4.55	11.52	19.34	7.29
Da Phuoc	3.44	5.89	13.60	5.70	4.61	11.20	19.33	8.87
Phu Hoi	4.16	7.11	23.90	5.12	4.49	11.87	19.35	5.83
Son La	3.29	8.01	19.97	1.98	3.83	10.05	19.44	2.61
Chieng Khuong	3.03	8.31	21.10		3.84	10.03	19.28	
Na Nghiu	3.54	7.87	18.86	1.98	3.82	10.06	19.58	2.61

Remark: - Consultant's calculation through household surveys under SEACAP022/001

- The reported speeds averaged for all trips.
- The verified speeds averaged for all verified trips.

Figure 4: Speed according to the mode of transport of the communes



7. ASSESSMENTS AND ANALYSES

7.1. The reliability of data

There were two data sources: From the first source, the data were provided by the commune level (based on the questionnaire Form A). From the second source, the data were provided by households (based on the household questionnaire Form B). In Form B, there were two kinds of data: data provided by households through the interviews and data verified by the surveyors together with the local people. Therefore, the consultants have made comparisons and analyses of data from these two data sources.

7.1.1. Comparison of data provided by commune level and data reported by households.

***Statistic Data from the commune level**:*

- With respect to data on poverty: The poverty standard were taken in accordance with the national lines (Refer to Appendix 3), which were uniform from the central to the local levels. This data was reported monthly, quarterly and yearly. The poverty statistics were issued by the Ministry of Labour – Invalid and Social Affairs. (Refer to the Annex on poverty). In reality, there was difficulty in comparing the data collected from commune level among the surveyed communes. Because, some communes reported data, which was based on the old criteria for 2001 - 2005 period; whereas some communes reported data, this was based on the criteria for 2006- 2010 period. These criteria were different. So the comparisons were extremely difficult.
- Data on means of transport: This data has not been recorded regularly. It has been recorded in special periods and for projects.

***Data reported by households**:*
This data was reported by households to the project surveyors (project consultants), through direct interviews.

The project surveyors directly interviewed the representative households, not all households in the communes. In each commune, only 100 households were interviewed; so the ratio between the number of interviewed households and the number of total households of the surveyed communes varied greatly (the ratio of samples).

***Differences**:*
Table 7.1 indicates the differences between the two data sources. These differences depend substantially on the ratio of samples. The larger the ratio of samples is, the more accurate the results are expected to be. The difference in data of Thanh Hoa province was not significant. But the differences in data on poverty of An Giang and Son La provinces were very large. In An Giang province, the data provided by commune staff were up to 3 times as small as those reported by households. Whereas, in Son La province, the data provided by commune staff were up to 2.5 times larger than those reported by households.

These differences depended not only on the ratio of household samples, but depended greatly on the knowledge of the local people and the customs (and perceptions) of the rural areas. There may also be differences in the sampling techniques of the communes and the study surveyors.

Table 7.1: Comparison of data provided by commune staff with data reported by households

Provinces	Communes	Ratio of Households Samples (%)	Data sources			
			Poverty Rate (%)		Number of motorbikes per capita (person)	
			Provided by commune	Reported by households	Provided by commune	Reported by households
Thanh Hoa	Minh Dan	12	18	19	0.102	0.126
	Trieu Thanh	8	55	67	0.018	0.038
An Giang	Da Phuoc	2	17	42.6	0.03	0.034
	Phu Hoi	3.6	19	59	0.029	0.024
Son La	Na Nghiu	4	46	17.9	0.069	0.139
	Chieng Khuong	5	28	24.5	0.099	0.154

Source: Commune staff and household surveys under the SEACAP 022/001

7.1.2. Comparison of the reported and verified data between (t) and (d).

Table 7.2 indicates the differences between (t) and (d) of reported and verified data on the routes of the local people by purpose of journey (accompanied by the surveyors):

- ✓ The differences in distance were smaller than those in time.
- ✓ The local people in the surveyed communes of Son La province reported most accurately. The differences were smallest (1% on distance and 5% on time).
- ✓ The local people in Trieu Thanh commune of Thanh Hoa province and Phu Hoi of An Giang province reported most inaccurately (about 17% on distance and about 30% on time).
- ✓ The other communes have differences of over 8%.

Table 7.2: Summary of average (t) and (d) by trip purpose

Province and Commune	Average reported time (min.)	Average verified time (min.)	Average reported distance (km)	Average verified distance (km)	Difference in time (%)	Difference in distance (%)
Minh Dan	7.46	6.59	1.00	1.19	**13.2**	**15.9**
Trieu Thanh	25.92	20.37	3.29	2.84	**27.2**	**15.7**
Thanh Hoa	**18.89**	**15.24**	**2.49**	**2.25**	**23.9**	**10.5**
Da Phuoc	21.14	19.56	3.45	3.93	**8.1**	**12.2**
Phu Hoi	27.49	21.18	3.72	4.47	**29.8**	**16.9**
An Giang	**24.30**	**20.21**	**3.58**	**4.17**	**20.3**	**14.1**
Chieng Khuong	23.14	21.13	4.63	4.73	**9.5**	**2.1**
Na Nghiu	25.54	25.06	5.86	5.66	**1.9**	**3.6**
Son La	**24.39**	**23.15**	**5.25**	**5.19**	**5.4**	**1.0**

Source : household surveys under the SEACAP 022/001

Figure 5: Error of time

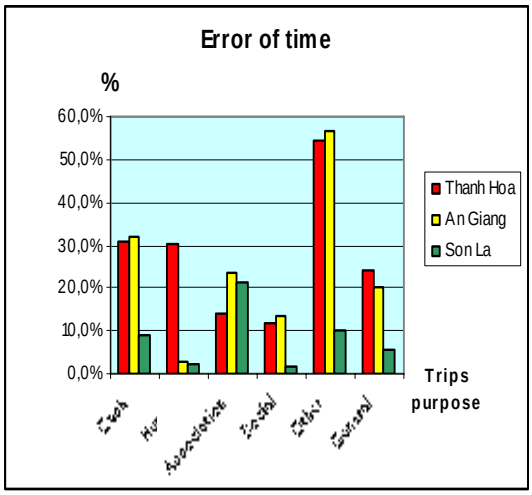


Table 7.3: Error of time

	Error of time (%)		
	Thanh Hoa	**An Giang**	**Son La**
Cash earning activities	30,7	32,0	8,9
Human resources	30,3	2,7	2,4
Association, institution	14,1	23,3	21,2
Social relations	11,8	13,4	1,6
Other	54,6	56,6	10,3
General	**23,9**	**20,3**	**5,4**

Figure 6: Error of distance

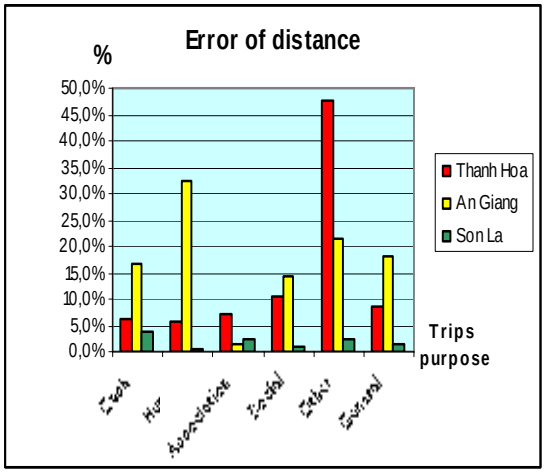


Table 7.4: Error of distance

	Error of distance (%)		
	Thanh Hoa	**An Giang**	**Son La**
Cash earning activities	6,0	16,8	3,9
Human resources	5,6	32,6	0,4
Association, institution	8,7	18,3	1,5
Social relations	7,0	1,5	2,3
Other	47,4	21,4	2,3
General	**10,5**	**14,1**	**1,0**

The study team has used the regression function for the reported (t) and (d) data by interviewed households and the verified (t) and (d) by age, sex and education level. The results showed that the regression model has high relation cooefficients (R^2):

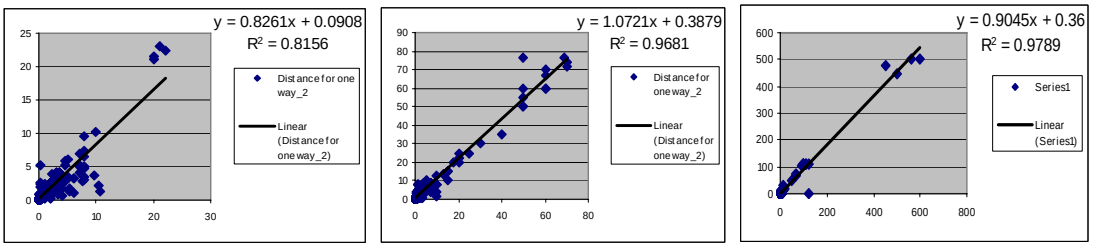
+ With regard to the travel distances, the value of R^2 ranged between 0.81 to 0.99
+ With regard to the travel times, the value of R^2 ranged between 0.52 to 0.94.

(Refer to the following charts)

Figure 7: Relation between the reported and verified travel distances by sex.

Female

Thanh Hoa An Giang Son La



Male

Thanh Hoa An Giang Son La

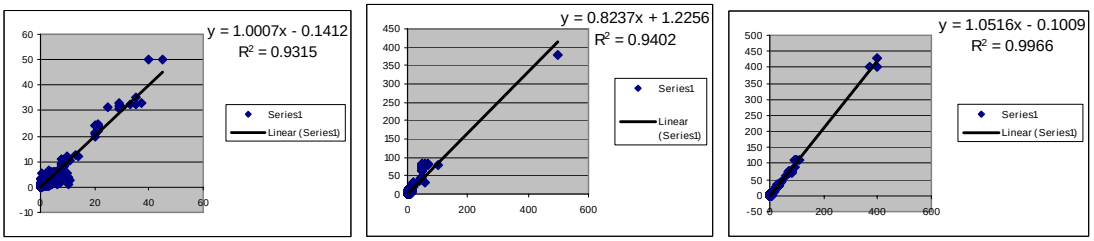
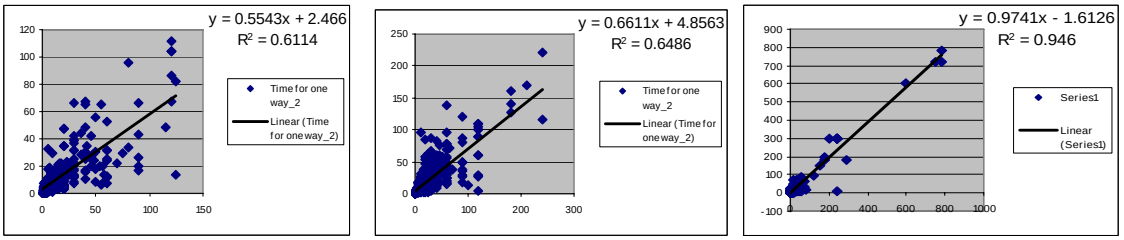


Figure 8: Relation between the reported and verified travel times by sex.

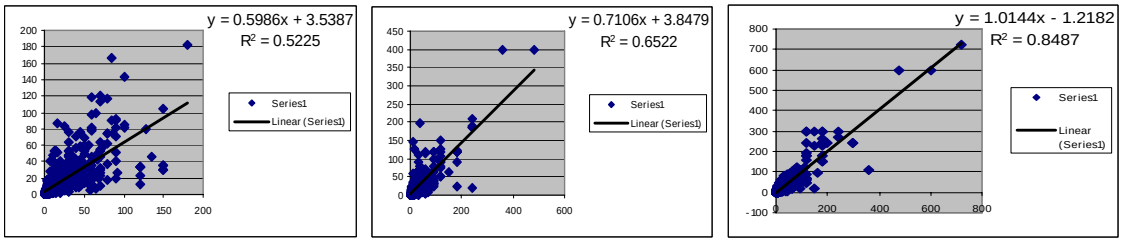
Female

Thanh Hoa An Giang Son La



Male

Thanh Hoa An Giang Son La



(1) Reliability of reported distances by households, compared to the verified distances by sex.

Table 7.5 indicates:

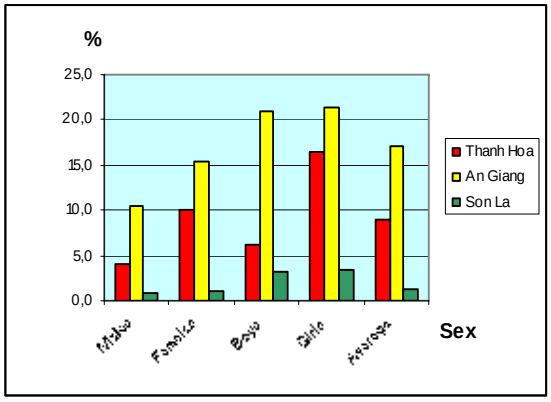
✓ With respect to distance estimation, males estimate better than females. Adults estimate better than young people. In Son La province, the difference in error of

males and females was not large, being almost similar. But in Thanh Hoa and An Giang provinces, this difference was very large (approximately twice).

✓ The difference in error between the surveyed provinces varied considerably. It was only 1.2% in Son La province. Whereas, it was 17.1% in An Giang province and 8.9% in Thanh Hoa province.

Table 7.5 & Figure 9 : Difference in distance estimation by sex

Sex	Distance (%)		
	Thanh Hoa	**An Giang**	**Son La**
Males	4.1	10.5	0.8
Females	10.1	15.4	1.1
Boys	6.3	20.9	3.1
Girls	16.5	21.4	3.5
Average	**8.9**	**17.1**	**1.2**



Source: Calculated results of the consultants, from the household surveys under the SEACAP 022/001

(2) Reliability of reported times by households, compared to the verified times.

Table 7.6 indicates the following relationships.

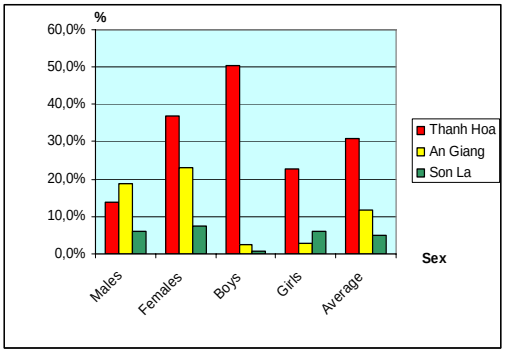
✓ With respect to time estimation, males estimate better than females. Adults estimate better than young people. In Son La province, the difference in error of males and females was not large (1%). But in Thanh Hoa province, the difference in error of males and females was very large (about 3 times). In An Giang province, this difference was 1.2 times

✓ Girls estimate time better than boys do in Thanh Hoa province, are similar and good in accuracy in An Giang province. However girls are less accurate than boys in Son La province.

✓ The difference in error between the surveyed provinces was very large. It was an average of only 5.1% in Son La province. Whereas, it was 11.8% in An Giang province and 30.9% in Thanh Hoa province.

Table 7.6 & Figure 10 : Difference in time estimation by sex

Sex	**Time (%)**		
	Thanh Hoa	**An Giang**	**Son La**
Males	13.8	18,7	6.0
Females	36.8	23	7.5
Boys	50.5	2.6	0.8
Girls	22.7	2.9	6..2
Average	**30.9**	**11.8**	**5.1**



Source: Calculated results of the consultants, from the household surveys under the SEACAP 022/001

(3) Close relations between the (t) and (d) assessment reliabilities and some quantitative indicators, as follows:

Based on the data processing by the software SPSS (Statistical Package for Social Sciences), we have found a close relationship between the following indicators and the (t) and (d) reliabilities which have very high correlation rates. The detailed indicators are as follows:

- Number of motorbikes per capita
- Occupation.
- Transport infrastructure.
- Education level and sex

The reliability of time and distance measurements of local people was closely related to the transport infrastructure status, occupation, education level, sex and the number of motorbikes per capita.

Table 7.7 following indicates the relation of (t) and (d), in particular:

Minh Dan commune of Thanh Hoa province has a transport infrastructure which is assessed as being in the best condition amongst the surveyed communes. However the accuracy of (t) and (d) estimations was placed second of the three provinces, following the two communes of Son La province.

It is assessed that the rural people in the two communes of Son La province estimated (t) and (d) most accurately because:

- These communes have a good transport infrastructure and a good transport connectivity. The local people mainly live alongside the national road 4G(highway). All public service facilities are located by the sides of highway.
- There are always chainage markers along the highway, so the rural people can easily and accurately estimate the traveling distances.
- The average number of motorbikes per capita and the percentage of the traders out of the total number of interviewees are highest in Son La province.

These are conclusions founded upon the reported data of households.

Table 7.7: Relations of (t) and (d) reliabilities and some indicators

Provinces	Communes	Transport infrastructure *	Number of motorbikes per 100 people	Rates of some indicators (%)				
				Error (t)	Error (d)	Illiterate people	Education level at Grade 3	Traders
Thanh Hoa	Minh Dan	1	12.6	13.2	15.9	0	37	1
	Trieu Thanh	3	3.8	27.2	15.7	3	15	0
An Giang	Da Phuoc	3	3.3	8.1	12.2	9	23	14
	Phu Hoi	3	2.3	29.8	16.9	30	18	6
Son La	Na Nghiu	2	13.9	1.9	3.6	2	24	3
	Chieng Khuong	2	15.4	9.5	2.1	3	19	18

Sources :Household surveys under the SEACAP 022/001

**Transport infrastructure (including road condition and linkages) was scored from 1 to 3 in order from good to bad.*

Figure 11: Relation between distance error and number of motorbikes per 100 people or in Traders.

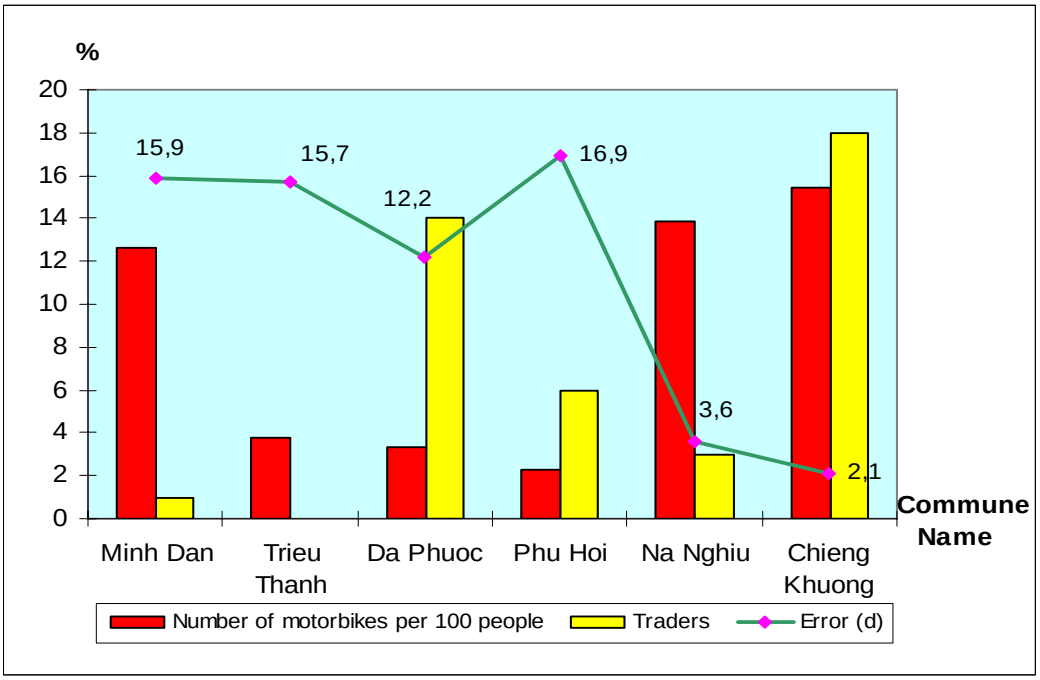
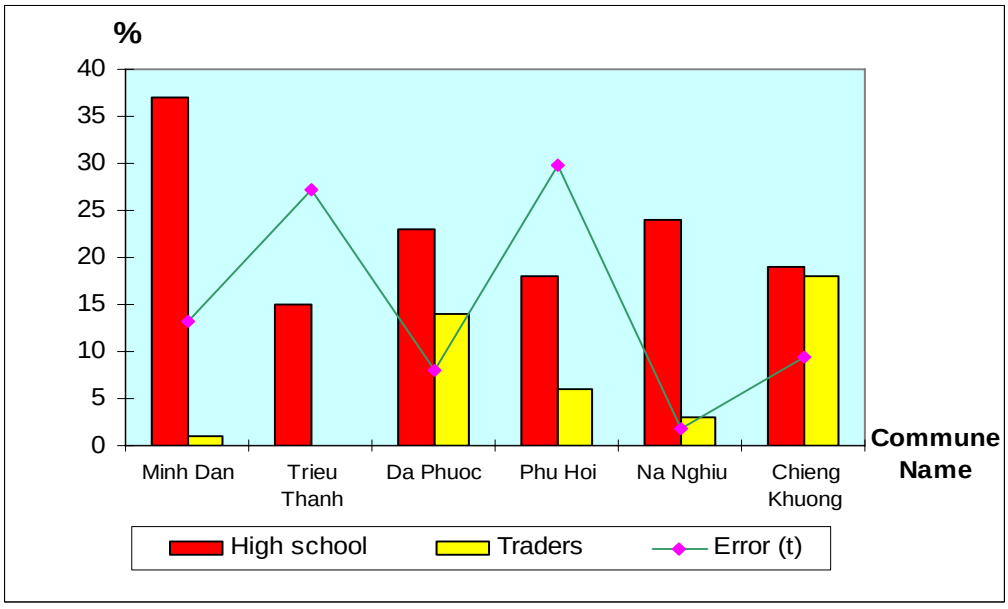


Figure 12 Relation between (t) error and interviewees who are in high school or in business.



7.2. How can the travel times be explained by the distance of travel?

In general, the travel distances usually correlated reasonably to the travel times: the further the distances were, the more the travel times were. However, on the same

distances, the following factors also affect the travel times: terrain, transport means, road condition, weather, health status, age, sex etc.

7.3. Factors affecting the accuracy of time and distance measurement units of local people:

Economic conditions: It is related to the livelihoods of the people. Most interviewed people participating in this study were farmers. They work on the fields, in the mountains, or in the forests fetching firewood. They do not experience pressures of time keeping. They work until they have completed their tasks. The travel distances taken are typically not lengthy, the travel time taken is relatively short. The travel frequency is not high. Typically, farmers estimate travel times and distances poorly. Travel time is apparently not a significant factor in their lives. Many of them did not know the answers or could not respond to the questions. With respect to the more affluent, the traders, the commune staff etc.; they can travel easily and have better working conditions. They can go further to buy various goods at cheap prices. Subsequently, they resell goods to the local people at slightly higher prices. Their travel times, distances and frequency of travel are higher. They also estimate travel times and distances better; time and distance appreciation are more important to their daily lives.

Linkage ability and road condition: The difficulties of accessibility to the transport services in the rural areas are an obstacle to economic development. Accessibility could be increased through the improvement of a rural transport infrastructure. Service, as well as quality and local product prices need to be improved; to promote economic development and reduce poverty. If the road conditions are improved, the local people will use them more frequently due to faster journey times, improved loading, reduced vehicle maintenance and lower unit transport costs. They will have many opportunities to travel outside their locality. The economy will become more developed; and of course, the perceptions with regard to time and distance measurements will improve.

Means of Transport: With regard to the poor community members in the population, most cannot afford to buy the existing available means of transport. Therefore, they usually go on foot. They use short cuts and low trafficked roads. The more affluent members of the society can purchase motorbikes, which are provided with odometers. Therefore, they can estimate exactly the distances of their journeys. Also they can select the most economic routes for each journey taken. Males operate vehicles more than females. They estimate travel times and distances better than females.

Age: Elderly members of the population make journeys to and within the villages in order to visit their neighbours, friends and family relations. They have limited means to visit communities outside their locality. However they have valuable experience using nature and weather to estimate travel times and distances. They use typical measurement units, such as: **"The morning, the afternoon, half morning, half afternoon", or "from the cockcrow to midday", "from early morning to midday"**

Education level: The level of education mostly affected estimations of time and distance. The higher the education level, the more accurate the estimation. In the areas where local people had low levels of education, the surveyors required time to explain the project purposes and assist the local people, so that they could respond to the questions themselves.

Box 1: Education level and Poverty and the customary measurement of time

Madam Bui Thi Lam lives in village No 7, Trieu Thanh commune, Trieu Son district, Thanh Hoa province. She is of the Muong ethnic minority. She is 37 years old and is illiterate. She was unable to make her own signature to endorse the interviews, and asked another person to sign. Her family totals 5: and includes her husband and 3 children. The eldest son works together with the parents in the fields. The two other children are students. Her family has 720 m^2 of land. This area is not sufficient for ensuring adequate grain for her household (on average, 1 person needs 360 m^2. As a result she has to carry out contract (hired) work everyday or fetch firewood to sell. She must pay 15,000VND for an electric light per month and 200,000VND per year for sending 1 child to school. It is a considerable burden for her to pay these amounts. Her family's furniture and goods are not valuable. They do not have any means of transport and do not own a clock (they do not know how to use a clock or watch). Her household is poor and subsidised by the commune authority.

The surveyors questioned Madam Bui Thi Lam about her travel times and distances taken. She replied with simple perceptions on travel time: "Starting from getting up to over midday". She did have perceptions on distances of travel; She remarked that: "the travel took long time"

Village No 7, Trieu Thanh commune - Trieu Son District -Thanh Hoa province, on 6th April 2006

Ethnic minorities

Most ethnic minorities in Trieu Thanh mountainous commune of Thanh Hoa province live in remote areas of Vietnam and these areas are typically far away from the province centres. The ethnic minorities generally have a low level of education and rarely make journeys outside their locality. Therefore, they estimate travel times and distances very poorly; some persons were unable to estimate.

Some people do not speak the Kinh language, in such cases, the village staff interpreted their replies (the surveyors interviewed 4 ethnic minority people. Only one of the filled questionnaires was used in the data calculations. The remaining filled questionnaires had many items of information missing. They contained some information, such as names and the household member number). It was necessary for the surveyors to spend adequate time to explain the requirements of the survey and the purpose, so that the interviewees could reply by themselves in order to relate their own opinions.

Many households are poor. They do not have clocks. Many people do not know how to use clocks or watches, so that they do not have an accurate knowledge with regard to time or the use of hours and minutes. They frequently measure times as **"morning, afternoon and half morning, or half afternoon"**.

Their perceptions on distance are similar to that of time. Although they know the distance measurement units of metres and kilometres, they frequently estimate the distances inadequately.

In Son La mountainous province, the survey staff could interview only the local people, who lived alongside the highway. They could not gain access to far villages on the mountainous sides due to the very poor condition of the roads (and limited duration of the surveys). The interviewees from Thai ethnic minority group accounted for over 50% of the total. All households owned motorbikes. The education of children were cared for by the parents. All these facts help them to estimate the traveled times and distances very well. Many of them had estimated more exactly then the Kinh people.

In this Study, it was therefore impossible to assess representative reported traveled times and distances separately for the ethnic minority people, because the ethnic minority people by the selected communes were a small sample and were not representative for Vietnam.

Social and–cultural features: Females usually carry out house work and field work. They also go to the district markets to make purchases, They also make visits to their relatives and friends. Males are normally considered to be head of the households. They usually travel further than females to carry out their business. Males estimated travel times and distances better than females.

Natural conditions: Natural conditions and the weather also have affected road use of the local people. Many people travel on the dry road surfaces, On these roads, the travel speeds are higher than those on the wet, slippery road surfaces.

On the wet, slippery roads, the traffic flows are slow; and the travel speeds are low. Agriculture is affected by the condition of the roads and as a result affects the business sector. In general, in the agriculture harvesting period, the local people use roads and the transport services more than in other periods.

Health: Travel time depends on the health status of the population. People in good health are able to walk at a reasonable speed; their needs to stop for a break are less than if they are tired, when they would also be walking slower.

Box 2: Typical accessibility

The accessibility to the fields of Son La province is quite different to that of other surveyed provinces. Due to the characteristics of the terraced fields the roads to them are steep. Therefore, people must go on foot to the fields. They cannot go by motorbikes or by bicycles. They operate rice pluck machines at the field which package and carry the crop away. Then, they are able to use this means of transport to carry the crops to their home.
Madam Pham Thi Doanh is 54 years old, of the Kinh ethnic group, living in Hong Phong village of Na Nghiu commune. Her education is to the 4th class. When she was interviewed about the time taken to carry rice packs from the field to the boat pier, she answered **"When I am tired I carry slowly, because I must take a long break. When I am not tired I carry quickly"**.

Occupation: Non-farmers, especially business and the traders have greater mobility than the agricultural workers. They travel away from the villages and make more visits than the farmers. Due to the nature of their business, time is more crucial to the success or not of their occupation. As a result, they tend to care more about travel time and distances.. They estimated (t) and (d) better than the agricultural workers.

7.4. Which time and distance measurement units are recommended to be reliable and more suitable in special circumstances?

The difficult surveys were in Trieu Thanh commune of Thanh Hoa province. This commune is a mountainous commune, having disadvantageous terrain conditions. Its poor households rate was high. The travel time and distance estimation skills of the local people were poor. When they were interviewed by the surveyors, many people replied :"do not know", or "it takes long time", or "it takes little time". Their following time measurement units would be recommended:

- By the position of the sun: The sunrise is from 5 am to 6 am (depending on the season); The sun's position , i.e. midday (i.e. 12 o'clock). The sun-down is from 5 pm to 6 pm. (depending on the season).
- By the "cock–crow": The first time of the "cock-crow" is 3 am. The second of the "cock-crow" is from 5 am to 6 am (depending on the season) - It is later in winter; and it is earlier in summer. The "cock–crow" itself depended on the position of the sun.

For future surveys it would be advisable to initially determine whether the interviewees are familiar with the use of watch or clock based time measurement. A decision could then be made by the surveyors whether to use time based assessment or more approximate, but possibly familiar, period based assessments. Distances were actually assessed more accurately than times, despite the general lack of access to odometers or the benefit of km posts, and should probably be the preferred standard of measurement..

Box 3: Difficult accessibility and the familiar time measurements units

Mr Nguyen Si Vua lives in village No 7, Trieu Thanh commune- Trieu Son district – Thanh Hoa province. He is a Kinh ethnic minority. He is 37 years old. His immediate family totals 5. He and his wife are farmers. His three children are students. Twice a week he collects fire- woods to sell, in order to pay for his children to attend schools. The furniture or goods are not valuable. He owns a bicycle which is his sole means of transport. It has been used for 5 years. The distance from his house to the major roads is about 700m. The roads have steep gradients and are difficult to travel on (slopes of 10 to 20%). The bicycle is useful only when ridden on the major roads. However on the roads from the major roads to his house, the bicycle can sometimes be used on some sections. The remaining sections of the roads, users have to go by foot. Mr Nguyen Si Vua's children have been off school on rainy days due to the road's impassability.
When the surveyors interviewed him about travel times and distances, he answered: "going from cock–crow to midday then going back", or "it takes about 1/4 day or half a day", "it takes a long time". In special cases, he was asked about the travel time of the trips for collecting firewood, and he was not able to answer. He said that he was only interested in the whole time spent fetching the firewood, from leaving to coming back home.

Village No 7, Trieu Thanh commune - Trieu Son District - Thanh Hoa province, on April, 2006

7.5. How are questions on travel times and distances best phrased?

The interview manner of the surveyors plays an important role in determining whether local people can reply accurately.. The surveyors did not initially interview directly with the principal survey questions. They would first ask about the interviewee's life and circumstances, in order that the interviewees felt relaxed and also not to offend them. Importantly, the surveyors were to explain the purposes of these surveys and what they would be used for?. The interview procedure would be as follows:
Firstly, the surveyors will ask about the sites (destinations) (for example, asking about going to markets: Which markets?; also asking about the fields: do you have fields? Where are they?). Subsequently, the surveyors would ask questions about travel time and distances. They would not ask directly "How far is the distance, in km?", firstly or "How many minutes does it take?". They would ask "How long a time does it take?", "How far is it?". Subsequently, they would continue to ask "How far is the distance, in km?" and "How many minutes does it take?". Or they would ask: "Are the fields far from your house?", "By which vehicle do you go?". "How long a time does it

take?". Based on their replies, the surveyors could then realize their time and distance estimation skills and continue the interview. If an interviewee has good estimation skills, the surveyors will ask: "How many minutes does it take?", "How many metres or kilometres, is it far?". If an interviewee has bad phrase skills or they answer: "I do not know", the surveyors must help: by comparing that distance with the knowledge of the detailed section of the major village road (for instance, "Is the distance from your house to the interview site further or nearer?", "How many times is it nearer or further?"; Comparing the travel – Is it more difficult or easier etc.

8. INFORMATION SHARING

The method of investigation and data collection, as well as the results of the Study will be shared for the on-going Updating Rural Transport Strategy Study by TDSI and other studies related to rural transport, the national and international workshops on rural transport and Time and Distance statistics data improvement.

The results of the Study will also be shared among relevant agencies of MOT and Donors to help for preparatory activities, designing rural transport projects in the coming years. The results of the study will also be of help to the decision makers in providing reasonable and effective investment decisions in rural transport, aiming at rural access improvement and poverty reduction.

The electronic files of the report will be shared in the Transport Website of the World Bank, under the theme of "result measurement", and of the gTKP.

9. CONCLUSIONS AND RECOMMENDATIONS

9.1. Conclusions

The Study "time and distance in Viet Nam" has provided the interesting findings on the travel models, time and distance, and the reliability of the reported data. These data were collected through the interviews with local people in 6 communes, representing 3 different terrains: An Giang provice (representing the Delta region), Thanh Hoa provice (representing the flat regions) and Son La provice (representing the mountainous region). The main conclusions are as follows:

- Travel models: The travels of the local people in Thanh Hoa and Son La provinces (representing the flat and mountainous regions) were mainly on foot and by bicycles, accounting for 80% of the total journeys. In An Giang province (representing the delta regions), the travels by foot and by bicycles accounted for only 60%, because they also traveled by boats. The journeys by motorbikes accounted for from 8% to 24%. The automobile use was not significant (1.4% - 4.2%).
- Average travel time and distance: The travel times and distance in the mountainous communes were greater than those in the flat provinces.
- Reliability of the data: Surprisingly, the difference in the travel times and distances in two mountainous communes of Son La provice was the smallest. This highest difference was in Trieu Thanh mountainous commune of Thanh Hoa provice. This commune was the poorest commune, the most difficult travel conditions, and being the most affected by the natural disasters.
- In remote communes with low economic development and a low level of education and a high poor household rate, the rural people face difficulties in estimating traveled times and distances.

- The small traders, the rural people doing business estimated the traveled times and distances more accurately than the farmers did. The men estimated more accurately than the women; but the girls estimated more accurately than the boys . The persons will a certain level of education, estimated more accurately than the illiterate persons did. The long traveled distances were more easily estimated than the short traveled distances.
- The study has demonstrated the range of accuracy and influencing factors in the important assessment of time and distance parameters used for identifying rural transport needs and interventions.
- The data collected in this Study can be used for analysis of the road condition status and the accessibility of the local people in the defined areas. These data were based on the reliability assessments of the statistics and household interview data in the rural areas.

9.2 Recommendations

The time and distance surveys provided useful information on the travel times and distances of over 600 households in 6 communes, representing 3 terrains (flat, delta and mountain) under 3 sub-economic regions of Vietnam, namely:

- The North Central sub-region
- The Mekong Delta sub-region
- The North West sub-region

Based on the achieved results above, the consultants recommend the following:

(1) The SEACAP is recommended to arrange support for funding the expansion of the SEACAP 022/001 to 5 other sub-economic regions of Vietnam with different characteristics.

(2) Based on the collected data from the surveys, The Government of Vietnam and donors are recommended to support with further funding in order to update these surveys every 2 -3 years. Such regular surveys would greatly increase the knowledge base of the transport needs of rural and disadvantaged communities, and the impact of road improvement initiatives and related poverty reduction.

QUESTIONNAIRE ON RURAL COMMUNITY ACCESSIBILITY

Sample A - for commune leaders and village heads

We are representatives of a Time and Distance Study team in Vietnam, funded by DFID. We would like to know your opinions about actual time and distance to public services, rural infrastructure, such as going to work, to school or movements for other purposes; impact of movements to socio – economic situations in the area. Your responses will be helpful for us to make proper decisions on providing reasonable and better accessibility to serve community beneficiaries, create opportunities for economic growth and poverty reduct

1 - SURVEY SITE	**DATE:**
1.1	Province:
1.2	District:
1.3	Commune:
1.4	Village to be surveyed:

2 – RESIDENTIAL AREA

2.1	Limit of Residential area: Area (km^2)
	Terrain (mountains, flat or hilly)
2.2	Population Number of households a) Number of males over 18 years old b) Number of females over 18 years old c) Number of males from 12 -18years old d) Number of females from12-18 years old e) Number of males under12 years old f) Number of females under 12 years old Ethnic minority people Number of ethnic minority households
2.3	Transport means
	• Automobiles * Bicycle • Cong nong * Tractor • Motor boat * Other motor vehicle • Motorcycle
2.4	House classification **a)** Permanent house (tile roof, brick house) **%** b) Temporary **%**
2.5	Poor household rate: **%** Number of poor households:

3. ACCESSIBILITY OF THE AREA

a) Distance from the Area Centre to

- Major road (nearest? _____km
- CPC _____km
- District Centre _____km
- Province Centre _____km
- Capital _____km

b) Distance to the nearest school and number of schools in the area and in the adjacent areas (v)

TYPE OF SCHOOL	PRIMARY SCHOOL	MIDDLE SCHOOL	TECHNICAL COLLEGE	KINDERGARTEN	OTHER (GIVE DETAILS)
Total of commune (village)					
Km					
Number					

c) Distance to the nearest health centre and number of health centres in the area and in the adjacent areas (v)

TYPE OF HEALTH CENTRES	HEALTH CARE STATION	DISTRICT HEALTH CENTRE	HOSPITAL	OTHER (GIVE DETAILS)
Total of commune (village)				
Km				
Number				

d) Distance to the other nearest services and number of services in the area and in the adjacent areas (v)

TYPE OF SERVICES	DAILY MARKET	PERIODIC MARKET	TEMPLE CHURCH	POST OFFICE	CPC	PASSENGER STATION OF MOTOR TRANSPORT MEANS.	OTHER (GIVE DETAILS)
Total of commune (village)							
Km							
Number							

4. ECONOMIC SITUATION IN THE AREA

a) Major occupations in the area (list 4 major occupations in order of percentage of labourers in the total population)

	Occupation 1	%	Occupation 2	%	Occupation 3	%	Occupation 4	%
Men over 18 years old								
Women over 18 years old								
Men from 12-18 years old								
Women from 12 - 18 years old								

b) Commune GDP in 2005

VND/each year

VND/people/year

5. EVALUATION OF IMPACT OF ROAD IMPROVEMENT TO:

	IN THE PAST (5-10 YEARS PAST)	AT PRESENT	REASONS
Health care service			
Schools			
Temple, church			
Market			
Working place (fields, office etc)			
Public transport service			
Other places (specify)			

Note: Score: 0 – inaccessible; 1 – poor accessibiltiy; 2 – mean accessibility; 3 – good accessibility; 4 – very good accessibility.

SampleB. Household questionnaire

Q1. Household scale

Date		Interview location	
Surveyor			
Code of household			
Ethnic group		Interview Duration	

No of resident HH members	
No of absent HH members	
Non - family :	
Lodgers	
Live -in servants	

Q2. Household members

Mark* spokesman	Surnam Name (List members)	Resid. site H- in householhld; OR- in other place in province		Relat. towards HH head	Sex M/ F	Age	Education level attained	Cash - earning activity	Average Expenditure per HH person (1000 VND); a- <100; b- from 101 - 150; c- from 151 -250 and d - > 250			
		H	OR						a	b	c	d
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

Q3. inside and outside village Movements of household members in last year

	Destination		Trip frequency (Round trip is considered as 1 trip)					Time for one way (min.)		Distance for one way (...,.... Km)		Cost for one way (VND)	Who moves? Men over12 years old(M), Women over12 yeats(W),				Transport means used (See Note)
			Daily	Week	Month	Quarter	Year						M	W	B	G	
cash- earning activities	Fild, farm	Field 1															
		field 2															
	Representative/ Agriculture input providing place (seeds, fertilizer, insecticide etc.)																
	Crops																
	Local market (regular)	For selling															
		For buying															
	Province Centre																
	Formal working place																
	Informal working place																
	Rice milling place																
Human resources	Education : Primary school																
	Middle school																
	High school																
	Health care: Comm. H. Station																
	District Health Centre																
	Hospital																
other	Port office /Telephone Service																
	Other:(Water, Fire woods																
	1)																

	2)															

Note: 1 Pedestrian, 2 Bicycle, 3 Motorcycle, 4 Private car, 5 Private minibus /Lambro , 6 Bus, 7 Lorry , 8 Boat, 9 Animal cart, 10 tractor, 11 Other.

	Destination (for individual)	Trip frequency (Round trip is considered as 1 trip)					Time for one way (min.)		Cù ly 1 chiÒu (...,.... Km)		Cost for one way (VND)	Who moves? Men over12 years old(M) Women over12 yeats (W), Men ≤12 years old (B),Women ≤ 12years old(G)				Transport means used (See Note)
		Daily	Week	Month	Quarter	Year						M	W	B	G	
association, institution	Farmer's Association, Coorperat															
	Religous meeting															
	Women's Association															
	Village Heads															
	Héi b¶o thä															
	Pupil's Parent Association															
	Credit Association															
	Other (specify):															
	1)															
	2)															
Social relations	Wedding															
	Funeral															
	Visit friends															
	Visit relations															
	Temple, church for worship															
	Entertainment sites															
	Sport activities															
	Other: (specify)															
	1)															
	2)															

Note: 1 Pedestrian, 2 Bicycle, 3 Motorcycle, 4 Private car, 5 Private minibus /Lambro , 6 Bus, 7 Lorry , 8 Boat, 9 Animal cart, 10 tractor, 11 Other.

Q4. Transport means in use owned by household

Order	Vehicle Type	How long used (year)	Purchsed Value (Mill. VND)	Cost for annual use and maintenance (Thous. VND g)	Number (Piece)
1	Bicycle				
2	Goods carrying bicycle				
3	Motorcycle				
4	Pulled motorcycle				
5	Cong nong				
6	Car/ taxi				
7	Minibus (< 12 seats)				
8	Bus (>= 12 seats)				
9	Light truck (< 2,5T)				
10	Heavy truck (>= 2,5T)				
11	Handcart				
12	Animal cart				
13	Pack animal				
14	Non- motor boat				
15	Motor Boat				
16	Other transport means				

Q5. a) What are your major difficulty, problems in movement? What is the most difficult problem in your movement ?

b) How to solve difficulties in your movement? Can local community solve these difficulties themselves or not?

Q6. Impact Evaluation of road improvement to:

	Before (over 5-10 years past)	**At present**	**Reasons**
Health care service			
Schools			
Market			
Temple, church			
Working place (field, office etc.)			
Public transport service (Motor transport means)			
Other places (specify)			

Note: Score: 0 - inaccessible; 1 - poor accessible ; 2 - mean accessible ; 3 - good accessible ; 4- very good accessible.

Annex 3: Poverty

1. Overview on poverty in Viet Nam

The encouraged achievements achieved in poverty reduction:
The poverty alleviation has been one of the first priorities of the Government over tha past 10 year.In particular, thanks to the effective implementation of institutionaland polices, the poverty alleviation of Vietnam was assessed by the international communities as one of the countries having the best poverty reduction rate. Vietnam has achieved the millennium objective in poverty alleviation ahead time 10 years.
In accordance with the international poverty lines, the poverty rate of Vietnam was 37,4% in 1998. This rate decreased to 28.% in 2002. It was 24.% in 24.%.

Rapid reduction of poor household rate: The poor household rate has been reduced rapidly in all sub-regions of the country. The sub-regions of high poor household rate have a more rapid trend than that one in the sub-regions of low poor rate. the North East and Red River Delta sub-regions have the more rapid reduction of poor household rate than that one in other sub-regions of the country.

2. Poverty lines:

At present, there are two major sources on the poverty data. The first one is the and Social Affairs (MOLISA).

Government Statistics Office: The GSO calculates 2 poverty lines – the food poverty line and a (higher) general poverty line. The food poverty line is calculated according to the expenditure required to deliver 2100 calories per person per day. The general poverty line is calculated on the basis of s “basket of good essential for well-being’, combined with expenditure sufficient to meet the standard of the food poverty line. GSO estimates the rate od poverty using a national household survey that has been conducted in 1993, 1998 (Viet Nam Living Standards Survey – VLSS) and 2002 (Viet Nam Household Living Standard Survey -VHLSS).Ministry of Labour, Invalids and Social Affairs:

Ministry of labour, Invalids and Social Affairs: The Ministry of labour, Invalids and Social Assistance (MOLISA) coordinates a survey implemented in communes using a simple questionnaire that focuses on household income. Poverty is defined as:
80,000 VND/month in rural mountainous and island regions
100,000 VDN/month in rural plain areas; and
150,000 VND/month in urban areas
MOLISA is able to produce a detailed ‘full population’ picture of where the poor live and what their needs are. Their three-page questionnaire asks households about their number of member, welfare entitlements, income and assets. At the same time, the survey only includes households registered locally as these are the only ones entitled to support. Consequently, recent immigrants are often excluded, anf many poor households in remote areas are not pickd up. The survey is an

administrative record of all poor people the local state apparatus accesses, and is used for deciding upon local interventions such as school fee remission.

*** Very Poor – Less than 100,000 VND/per person/month:** This expenditure group is 50,000 VND below the official GSO poverty line. The level of expenditure corresponds more to the MOLISA rather than the GSO poverty indicatiors (for rural areas 80,000 VND/month in rural mountainous and island regions and 100,000 VND/month in rural plain areas) and is more closely associated with 'food poverty'.

*** Below Poverty Line Poor - Between 100,000 to 150,000/per person/month:** This expenditure group is based on the GSO poverty line (expenditure required to purchase 2,100 Kcal per person per day) and it is also the definition used to construct the commune level poverty rates used on the report. This sets the poverty line at 1,789,871 VND/Per/Year which approximates to 150,000 VND/per/Month.

*** Above Poverty Line Non - Poor - 150,000 to 250,000 VND/per person/month:** This expenditure group are non-poor but are just above the poverty line with relatively low disposable income.

Non - Poor More than - 250 VND/per person/month: This expenditure group captures those that are non - poor and with relatively high levels of disposable income.

Steps to establish the transport sketch

The surveyors had meetings with the commune leaders and staff. Subsequently, the project staff in charge of the transport sketches started to collect the necessary information to draw the commune transport sketch, based on the following steps:

1. To collect the commune transport sketches, if available. These sketches usually provide the commune major information, such as: administration management data, commune main roads, commune river system, lakes etc.

2. The project mapping staff in cooperation with the commune staff defined the location of post office, schools, CPC, village cultural house, agriculture input providing sites, bus station etc. on the map.

3. Subsequently, the project staff in cooperation with the commune leaders and the village heads drew the commune selected major roads by a GPS equipment; and defined the locations of post office, schools, CPC, village cultural house, agriculture input providing sites, bus station etc. by GPS.

4. After going on the major roads and going to the above locations with GPS; based on the collected commune transport sketch, the project mapping staff presented the collected information on the transport sketch with the following legends: