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A rapid assessment of rural transport services in Southern Province, Cameroon

Guy Augustin Kemtsop

2007

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The figures quoted relating to various transport costs are estimations and/or approximations based on the survey findings. Since the information was collected, there may have been changes in exchange rates, fuel prices, taxes and other costs. It is believed the figures quoted still give valid 'order-of-magnitude' indications of costs and prices and that the comparisons and conclusions made here are still broadly valid. Naturally, up-to-date data should be used for detailed transport planning and decision making.

Cover photograph
Rural transport in Southern Cameroon © Paul Starkey

networking with members of the

International Forum for Rural Transport and Development

A rapid assessment of rural transport services in Southern Province, Cameroon

by

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Study undertaken in collaboration with
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October 2007

Study undertaken by Practical Action Consulting for the
Sub Sahara Africa Transport Policy Program (SSATP)
as part of a project to develop a methodology for the
rapid assessment of rural transport services

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Foreword

The work presented here resulted from a World Bank contract implemented by Practical Action Consulting (PAC) and WSP International Management Consulting (WSPimc). The implementing team comprised active members of the International Forum for Rural Transport and Development (IFRTD).

The author, Guy Augustin Kemtsop Tchinda, was a member of a nine-person team that first met in Ethiopia in April 2005 to develop a methodology for the rapid assessment of rural transport services. The team comprised Paul Starkey (Team Leader, UK), Peter Njenga (IFRTD, Kenya), Stephen Newport (WSPimc, UK), Abdul Awadh (Tanzania), Gnanderman Sirpé (Burkina Faso), Guy Kemtsop (Cameroon), Henry Musonda (Zambia), Liz Tapper (PAC, UK) and Paul Murray (ORH, UK).

The methodology was then piloted in five provinces in four countries: Burkina Faso, Cameroon, Tanzania and Zambia. Guy Kemtsop was responsible for rapidly assessing the transport services in the Southern Province of Cameroon. He spent about six weeks visiting the province and he interviewed over 100 stakeholders. He was joined for about two weeks by Paul Starkey and together they travelled in the province, observing transport patterns, interviewing stakeholders and reviewing the key issues emerging.

The nine-person team held a review workshop in Nairobi in August 2005 to discuss the draft reports of the surveys and the lessons learned from implementing the methodology. The four national experts who undertook the surveys were then responsible for preparing detailed reports of their findings, and this document is the final report from the survey carried out in the Southern Province of Cameroon. Copies of the survey reports relating to Burkina Faso, Tanzania and Zambia are also available.

The Team Leader has prepared two documents that may be read in conjunction with this report. One provides details of the methodology employed and guidelines for its implementation. This has been published by the World Bank as an SSATP working paper entitled: 'The rapid assessment of rural transport services: a methodology for the rapid acquisition of the key understanding required for informed transport planning'. The second document provides an overview of the key findings from the five surveys and goes on to discuss the implications of these for improving rural transport services in Africa. This has been published by the World Bank as an SSATP working paper entitled: 'Rural transport services in Africa: lessons from surveys in Burkina Faso, Cameroon, Tanzania and Zambia'.

These documents can be obtained from the World Bank and can be downloaded from the websites of the World Bank and the International Forum for Rural Transport and Development (IFRTD).

Guy Kemtsop worked extremely hard and conscientiously to undertake the rapid appraisal survey and to prepare this important document. It contains valuable information and ideas concerning rural transport services in Southern Cameroon. Similar surveys in other regions of Cameroon are now recommended.

The rapid methodology employed here was designed to provide, at relatively low cost, an overview of the key rural transport issues within an area that would allow informed debate and subsequent policy action. It is hoped that this report will stimulate useful discussion on how rural transport services can be improved and made more sustainable. Improved rural transport is needed to reduce poverty, improve livelihoods, increase economic growth and provide better access to health, education and other services. It will be up to the various readers of this document to move the debate forward, and help to fulfil the vision of a virtuous circle of improving rural transport and a better quality of life for rural families.

Paul Starkey
Reading, October 2007

Acknowledgements

The present assignment could not have been undertaken without the inputs and willing support of the various people encountered throughout the process, from the initial design stage to the final presentation of the results. My gratitude is expressed to the whole team involved. With them I experienced a committed, challenging and enjoyable time as I undertook this task.

The whole group was characterised by a hard working ethic combined with good humour. This was maintained by someone who could understand the needs and requirements of each team member, the context of each country and the targeted aims of the study. I found in the team leader, Paul Starkey, the desire to always do better and achieve the maximum, and this encouraged me throughout the assignment. My special acknowledgment is addressed to him for his commitment and his 'sense of perfection' that contributed to building valuable professional and personal skills in me.

The people met during the field study were very kind and willing to contribute with relevant and useful information and ideas. I recognize that without this special help from the many users and operators interviewed, I would not have been able to meet the challenge of the assignment. I want them to find here, the expression of my thanks and acknowledgement. My gratitude is also expressed to all the central and decentralized administration personnel of different sectors (health, transport, education, etc.), and the provincial, divisional and sub-divisional authorities who authorized the research and contributed in many ways.

Finally, to my family based in Douala who understood the challenge and allowed me to stay far from home for several weeks, I say a warm thank you.

Guy Augustin Kemtsop
Douala, October 2007

List of acronyms

CEAC: Centre d'Education et d'Action Communautaire

CFJA: Centre de Formation des Jeunes Agriculteurs

CFR: Centre de Formation Rurale

CIG: Common Initiative Groups

F CFA: Franc de la Communauté Financière Africaine

Hévécam: Société de Développement de l'hévéa au Cameroun

HIPC: Highly Indebted Poor Countries initiative

IFRTD: International Forum for Rural Transport and Development

IMT: intermediate means of transport

km: Kilometre

km^2: Square kilometre

NGO: Non Governmental Organization

ORH, Operational Research in Health (UK consulting company).

PAC Practical Action Consulting, UK

RTS: Rural Transport Services

SIB: State Investment Budget

Socapalm: Société Camerounaise de Palmeraie

SSATP: Sub-Sahara Africa Transport Policy Program (administered by the World Bank)

UK: United Kingdom

US: United States

USD: United States Dollar

WSPimc WSP International Management Consulting (WSP is a group of companies)

Websites The following websites concern some of the organisations mentioned in this report. Some or all of the summary documents, survey reports and methodology guidelines prepared as part of this project can be seen and downloaded from the first three sites listed

www.worldbank.org/afr/ssatp

www.ifrtd.org

www.animaltraction.org

www.practicalactionconsulting.org

www.wspgroup.com/imc

1- **Summary**

Rural Transport Services (RTS) are essential for poverty alleviation, both for its equity and growth aspects. The present report, carried out in the rural area of the Southern Province of Cameroon, is a part of a study realized in three other countries (Burkina Faso, Tanzania and Zambia) on the request of the SSATP in the framework of its new approach focused on integrated transport. The main objective of this study is to develop (and test) a methodology for the rapid assessment of the provision of RTS in developing countries, for further rapid and low cost assessments of RTS in other countries. The assignment has been done by undertaking the medium range distance of between 5 to 200 km, using semi-structured interviews, observations at all the different stages and stakeholders.

Rural transport in the Southern province of Cameroon involves mainly surface transportation. Despite the presence of many rivers, water transportation remains non practicable. Since several years, the policy and regulatory framework is undergoing important reforms (involving mainly the funding for infrastructures), but many of its items remain poorly implemented at the regional and local levels. Among the main factors influencing rural transport services, poor road condition is the most important. Around 10% of the provincial road network is tarred and, 25% of this total road network is said to be in good condition by the Public Work authorities; villages are located along roads. Transport activity is seasonal event during the year, the month and the week. This leads to a specific demand for both goods and persons transportation, and vehicles are then very highly technically modified to fit with the existing demand. The transportation price is said to be expensive (25 to 50% of the annual revenue of families). Motorized vehicles are quasi omnipresent in all the different spokes, and four wheel vehicles are mainly found in market spokes. IMTs exist also, and involve mainly motorbikes and to some extent bicycles. If the purchasing prices of motorbikes is getting cheaper (USD 600 – 700), the one of bicycles remain very high (USD 200 – the price of a second hand motorbike), compared to the rural peoples revenue. The main trends of the transport situation concern mainly the presence of motorbikes that, since some few years, are replacing mini buses that disappeared from the road network because of its poor condition. Based on our calculations, the transportation activity is financially profitable. But some operators (mainly rural taxis transporters) said to have very little financial profit from that activity, and they consider it as a social activity since it helps in serving remote rural areas. This idea is also shared by some transport authorities. In the other hand, the operators are doing a reasonable job, but they lack qualifications to carry out their activity in the best way. This social aspect is also mentioned by the authorities to justify the non respect of issues such as safety and security in transportation. The existence of barriers (gendarmes, police, safety, local council.) at the entrance and exit of towns and some villages for the checking purpose is a good initiative. But according to operators, these checking points are mostly considered as ‘paying points’ (they say to pay bribes for an amount that is 100 to 200% the total fuel consumption). Women operating a mode of transport are scarce, and marginalized people concern mainly handicapped people. They sometimes benefit some favours from the operators. The existing transport services are mainly found in regional and market towns, where motorized vehicles are mostly found in bus or motorbike stations. Operators act differently from one division to another. They are well organized in one of the four divisions (Dja et Lobo), with different kind of enriching examples of associations, consequently with a relatively better way of functioning. In the other localities, they mainly function as a tribal association in public bus stations.

Ways of valorising the economical potentials of the Southern Province rural area of Cameroon may be by improving road conditions. But, for it to be achieved in a sustainable manner, sensitizing the rural people and the local communities on their role and place in the process would be of great importance. Other aspects concern the good governance issues, the reinforcement of the policy and regulatory framework at the regional and local level, and the capacity building of all the operators.

2- **Survey background and methodology**

The methodology used in this survey was developed in 2005 by an international team that included the author of this country report. The World Bank's Sub-Saharan African Transport Policy Program (SSATP) contracted the British-based consultancy firm Practical Action Consulting (PAC, formerly known as ITC). PAC worked in association with WSP and members of the International Forum for Rural Transport and Development (IFRTD) to develop a methodology for the rapid assessment of rural transport systems. The guidelines specified passenger and freight transport for distances of 5-200 km, encompassing much rural transport, but excluding within-village transport, long-distance national transport and international corridors. Under the contract, a multidisciplinary team met in Ethiopia in April 2005 to devise the survey methodology. Four National Experts and the Team Leader implemented the methodology in Burkina Faso, Cameroon, Tanzania and Zambia. The team reconvened in Kenya to review the methodological lessons and national findings.

Rural transport systems operate on hub and spoke systems at several levels. Key hubs are provincial towns, market towns and villages. The various spokes and hubs have characteristic combinations of transport, including trucks, buses, minibuses, pickups and intermediate means of transport (IMTs). The methodology includes a survey of transport types, operators, users and regulators at sampled hubs and spokes, stratified by hub hierarchy and remoteness. The methodology requires one month to implement and provides a rapid overview of rural transport systems, highlighting key constraints, stakeholder views and proposals for improvements.

A region, representing about 5% of the country, is chosen where the transport catchment area corresponds approximately to administrative boundaries. Within this area, interviews are held with the regulatory authorities (local government, police) at provincial, divisional, sub-divisional and village levels. Operators, suppliers and repairers of transport devices (motorised and non motorised) are interviewed and operating costs and fares recorded. Interviews are conducted with users (and potential users) of transport including farmers, traders, employees, household managers, school authorities, pupils, health service providers, patients and marginalized people. Five interviews (at least two with women) are needed per stakeholder category and are stratified for isolation. Traffic counts (including pedestrians and IMTs) are carried out on selected provincial, market and village spokes on market and non-market days.

The report author undertook all the semi-structured ('rapid rural appraisal') interviews. As the survey progressed, information from different sources was triangulated and anomalies investigated. The survey guidelines stress the importance of poverty focus and crosscutting gender, safety and HIV/Aids issues. Complementary national level document reviews and interviews were undertaken to ascertain the positions of key institutional stakeholders, the policy and regulatory frameworks and the availability of relevant data. Full details of the methodology and the data sheets used are available in the project inception report (Starkey, 2005). This is available as an additional annex to this report, but for reasons of space has not automatically been included as part of this country's report.

In undertaking the methodology, in the Southern province of Cameroon the author travelled widely within the area and undertook more than 100 interviews with a wide range of stakeholders. Traffic counts were arranged three types of road, with counts on both market and non-market days, in locations where there was a significant market-day effect.

- two provincial spokes: Ebolowa – Sangmelima and Ebolowa –- Ambam;
- three market spokes: Sangmelima – Djoum, Ambam – Olamze and Ambam – Ma'an;
- five village spokes: Ma'an – Nyabessan, Ma'an – Meyo Ntem, Olamze – Meyo Biboulou, Djoum – Mintom, Sangmelima – Meyo Madjoum. But finally, three of those village pokes were considered for analysis.

3- Introduction to the surveyed area

3.1- Administration and population

3.1.1- Population and settlement pattern

The Southern province of Cameroon is situated between latitude 2° and 3°30 North, and longitude 9°30 and 13° East. It covers an area of 47190 km sq, with the following boundaries: i) the Centre Province at the North; ii) the Littoral province at the North West; iii) the Eastern Province at the East; iv) and the following countries at the south: Equatorial Guinea, Gabon and Congo Republic (**Map 1**).

The total provincial population is estimated at about more 502640 habitants, with a rural population of about 350000 habitants and 63057 rural families (**Table 1**). The rural organisation and structuring is getting more and more important. The rural population is much more aware of the necessity for them to gather their effort together under the same and common group (Common Initiative Groups, Cooperatives, Federations, associations.) in order to reach their goals in a best manner. These organisations concern different rural activities.

Work allocations is organised in such a way that men are the one concerned (production and selling) with cash crops, whereas women are concerned with food crops.

Table 1: Distribution of the Southern province population according to administrative units

Divisions	**Sub-Divisions**	**Population**		**Total**
		Urban	**Rural**	
DJA ET LOBO	BENGBIS	1 413	15 512	16 925
	DJOUM	721	4 089	4 810
	MEYOMESSALA	762	29 253	30 015
	MINTOM	1 101	5 528	6 629
	OVENG	319	6 054	6 373
	SANGMELIMA	41 838	43 170	85 008
	ZOETELE	2 763	26 892	29 655
Sub total 1		**48 917**	**130 498**	**179 415**
MVILA	BIWONG- BANE	818	9 613	10 431
	EBOLOWA	23 831	41 043	64 874
	MENGONG	797	11 677	12 474
	MVANGAN	1 741	10 793	12 534
	NGOULEMAKONG	2 091	11 030	13 121
Sub total 2		**29 278**	**84 156**	**113 434**
OCEAN	AKOM II	1 305	9 912	11 217
	BIPINDI	537	12 408	12 945
	CAMPO	2 029	4 292	6 321
	KRIBI	49 412	24 453	73 865
	LOLODORF	4 447	11 401	15 848
	MVENGUE	935	15 273	16 208
	NIETE	1 986	14 143	16 129
Sub total 3		**60 651**	**91 882**	**152 533**
VALLEE DU NTEM	AMBAM	8 467	19 640	28 107
	MA'AN	830	13 156	13 986
	OLAMZE	1 033	14 132	15 165
Sub total 4		**10 330**	**46 928**	**57 258**
Total		**149 176**	**353 464**	**502 640**

3.1.2- Local authorities / administrative arrangements

In general, administrative system in Cameroon follows the administrative unit structuring, except for some very few specific sectors. The country is divided into 10 provinces; each province is made up of Divisions. A Division is divided into Sub-divisions. Each Sub-Division is constituted of: one town divided into urban areas and one grouping governed by a traditional chief (**Table 2**). Within a grouping are lots of villages. In very few cases, districts may exist within a Sub-divisional administrative unit. Towns are made up of urban areas. Villages are located in rural area and governed by traditional chiefs (1st, 2nd or 3rd degree). In essence, the authority at the lower level is submitted to the one directly above him. Chiefs of villages and Districts governing respectively villages and districts are considered as auxiliaries to the State. Ministries are represented in each administrative unit by a delegate.

Table 2: Distribution of administrative units of the Southern province

Divisions	Sub-Divisions	Quarters	Villages	Towns	Groupings
DJA ET LOBO	BENGBIS	5	62	1	1
	DJOUM	2	18	1	1
	MEYOMESSALA	3	100	1	1
	MINTOM	6	18	1	1
	OVENG	1	25	1	1
	SANGMELIMA	18	115	1	1
	ZOETELE	4	57	1	1
Sub total 1		**39**	**395**	**8**	**8**
MVILA	BIWONG- BANE	1	33	1	1
	EBOLOWA	25	199	1	1
	MENGONG	1	48	1	1
	MVANGAN	2	52	1	1
	NGOULEMAKONG	7	49	1	1
Sub total 2		**36**	**381**	**5**	**5**
OCEAN	AKOM II	2	26	1	1
	BIPINDI	2	30	1	1
	CAMPO	7	19	1	1
	KRIBI	19	50	1	1
	LOLODORF	8	28	1	1
	MVENGUE	3	47	1	1
	NIETE	3	26	1	1
Sub total 3		**44**	**226**	**8**	**8**
VALLEE DU NTEM	AMBAM	11	77	1	1
	MA'AN	2	60	1	1
	OLAMZE	3	46	1	1
Sub total 4		**16**	**183**	**3**	**3**
Total		**135**	**1 185**	**22**	**22**

Most ministries follow this structure, with very few exceptions. The health ministry has a provincial authority and Head of Health Districts. Health Centres are under the supervision of the Head of Health District. The rural development and livestock ministries have representatives from the provincial to the village level. In villages, there are Chiefs of Agricultural Posts. These authorities insure the rural people framing, and there also exist some vocational centres dealing with framing, they are: Centre d'Education et d'Action Communautaire (CEAC), Centre de Formation Rurale (CFR), Centre de Formation des Jeunes Agriculteurs (CFJA).

Apart from these administrative structures, private sector is acting within rural communities through out NGOs, Associations and projects.

3.1.3- Ethnic diversity and religious makeup

The population of the surveyed are is composed of indigenes and settlers. In the Vallée du Ntem Division, settlers come mainly from the western part of the Cameroon (*Bamileke* and *Bamoun*), and there are also people coming from Northern Cameroon (*Haoussa* and *Fulani*). The main activities of the indigenes are agriculture and trade (mainly on international markets). In the Ocean Division the above people exists, and there are also foreigners mostly from Ghana, Nigeria and Niger. These ones are basically there for fishing activities, since this division out to the Ocean.

On the other hand, indigenes are composed of about 12 ethnic groups, with a dominance of *Boulou* people (**Table 3**). All these constituents belong to a major group called "*Beti*" and the vehicular tongue is *Boulou*. Compared to the other ethnic groups, Pygmies are not opened to others. They live deeply inside the forest, of hunting and gathering. There also exists a very old belief about ethnic dealing, which considers that some tribes have less value than others.

Table 3: Ethnic Constituents of the Southern province of Cameroon

Divisions	**Ethnic constituents**
Dja et Lobo	*Boulou – Fong – Fang – Pygmies*
Mvila	*Boulou – Fong – Bané*
Océan	*Boulou – Bassa – Ngoumba – Ewondo – Mabéa – Batanga - Pygmies*
Vallée du Ntem	*Ntoumou – Mvae*

In the Southern Cameroon rural areas, monotheism and animism cohabit. Monotheism concerns mainly Catholics and Protestants. Animism concerns mainly *Pygmies* people who are very famous because of their traditional practices and beliefs. Among all of them, monotheism is the most popular, and Protestantism is the common religion found.

3.2- Natural resources

3.2.1- Land area, terrain and topography

Vegetation is a humid dense forest with a three level stratification: ligneous arborescent stratum, high small bush stratum and herbaceous humus stratum. This vegetation hosts a very wide biodiversity made up of fauna and floristic species.

The terrain is dominated by the southern Cameroon plateau, and series of hills with an altitude between 650 and 900 m. the *Ngovayang* mountain chain and the *Ntem* massif interrupts that monotonous relief. The eastern part of the studied area is dominated by a 1 000 m high plateau; the western coastal plain has an altitude varying up to 300 m.

The hydrographical network is highly dense, with a very stratified and spread structure that break off the continuity of the network roads. The principal rivers are the following: *Lokundje*, *Lobé*, *Kienké*, *Dja*, *So'o*, *Ntem*. They mostly constitute boundaries between the administrative units, even with the neighbouring countries. Most of them are not navigable since there are a lot of waterfalls and rapids.

3.2.2- Climate and weather

The climate is the Sub Equatorial type, and the rain level varies between 1200 and 2000 mm. The annual average temperature is about 24°C, and the relative humidity is 80%. There are two rainy and dry seasons distributed as such:

- Long dry season: middle of November to middle of March;
- Short rainy season: middle of March to the end of May;

- Short dry season: beginning of June to end of August;
- Long rainy season: beginning of September to the middle of November.

3.2.3- Land use systems and farming systems

More than 80% of the provincial population depend on agricultural revenue. Natural advantages give the opportunity to the cultivation of very diversified crops (cash and food crops), with the possibility of producing food crops twice per annum, and the practice of market gardening. Farms are relatively far from villages (up to five kilometres and more), and need a lot of efforts to be created (land preparation) since we are in humid forest area, with a lot of trees to cut down. Mechanisation is very scarce in farms and the farming system is based on burning before cultivation. The insufficient mechanisation levels of farms coupled with the type of vegetation constitute a limiting factor to the extension of farms in the southern province.

The main cash crop produced by farmers is cocoa. Coffee, rubber and palm oil fruits are also produced, but in smaller quantities. Rubber and palm oil fruits are grown and sold to local agro industrial firms. They are: Hevecam (Société de Développement de l'Hévéa du Cameroun) for rubber, and Socapalm (Société Camerounaise de Palmeraie) for palm oil fruits. There are no factories for coffee transformation, and it is sold directly to traders after being dried. According to agricultural agents, farmers more and more prefer growing palm oil fruits rather than cocoa and other cash crops, since its value can be added by locally transforming it. The liberalization of cocoa market in Cameroon since the early 1990s, led to a serious reduction of cocoa price due to cut-price selling practices. Food crops are produced for local consumption. The surplus produces are sold at different markets. The main crops produced are tubers and roots (banana, cassava, plantain, yams, cocoyams), but other crops are also produced: groundnuts, cucumbers and maize. The cultural system is generally an associative cultivation (groundnuts + maize + cassava + plantain tree + cocoyams). The southern province of Cameroon hosts a part of the rich and diverse equatorial forest, with a large amount (quantity and quality) of timber and animal variety. The exploitation of these is done through private firms and also local community as common forest.

Livestock is limited at household level, including poultry, porcine, caprine and ovine, and very few bovine, due to the presence of tsetse fly. The presence of this fly constitutes a very great limiting factor for the introduction, the use and the development of animal traction, apart from the socio cultural aspects relating to the livestock keeping habit of rural people.

3.3- Economy and services

3.3.1- Major economic activities

Agriculture remains the major economic activity in the studied area. The whole rural area activities are modelled on the crop cultivation Crops are sold both on markets (public place for exchanges) and along the roads (people deposit crops to sell in front of their houses along the roads). The local transformation of cash and food crops represent important economic opportunities, by the presence of agro industrial firms. Both timber and agricultural products are transformed.

Crops that are locally transformed are: palm oil fruits (Socapalm), rubber (Hevecam) and pineapple. These are very important parastatals firms, located at the coastal part of the studied area, but there are also small and medium scale private firms dealing with pineapple and palm oil fruits transformation (Ferme Moderne du Sud, Nova-Gro, Rock Farm, and Trans-Agro).

Apart from these Agro industrial processing firms, there are also several firms dealing with timber transformation. These one are also large to medium scale sawmill firms, with foreign capitals. There are also edible essences (fruits and barks) from that humid forest, which are the subject of trading in local markets. Some of them are: *Irvingia gabonensis* and *Garcinia*. The local transformation is an economic opportunity for rural people in general, and youth in particular for it contributes in a significant manner to the improvement of their revenue, an then to meet the fundamental needs for transportation.

The crafts industry is the subject of diversified produces. It concerns the transformation of local materials, mainly ligneous and non ligneous products: wood, rattan and bamboo. These activities are permanent through out the year, since by-products are always available, and are never affected by agricultural calendar. They constitute substantial additional revenue for rural people.

Hunting and gathering are the main concern of the *Pygmy* people. They consider the humid forest with its wildlife diversity as a gift from heaven, hence as a very huge range of non renewal resources. These exchanges are mainly done on rural roads, with people passing through. This is to supply to their basic needs.

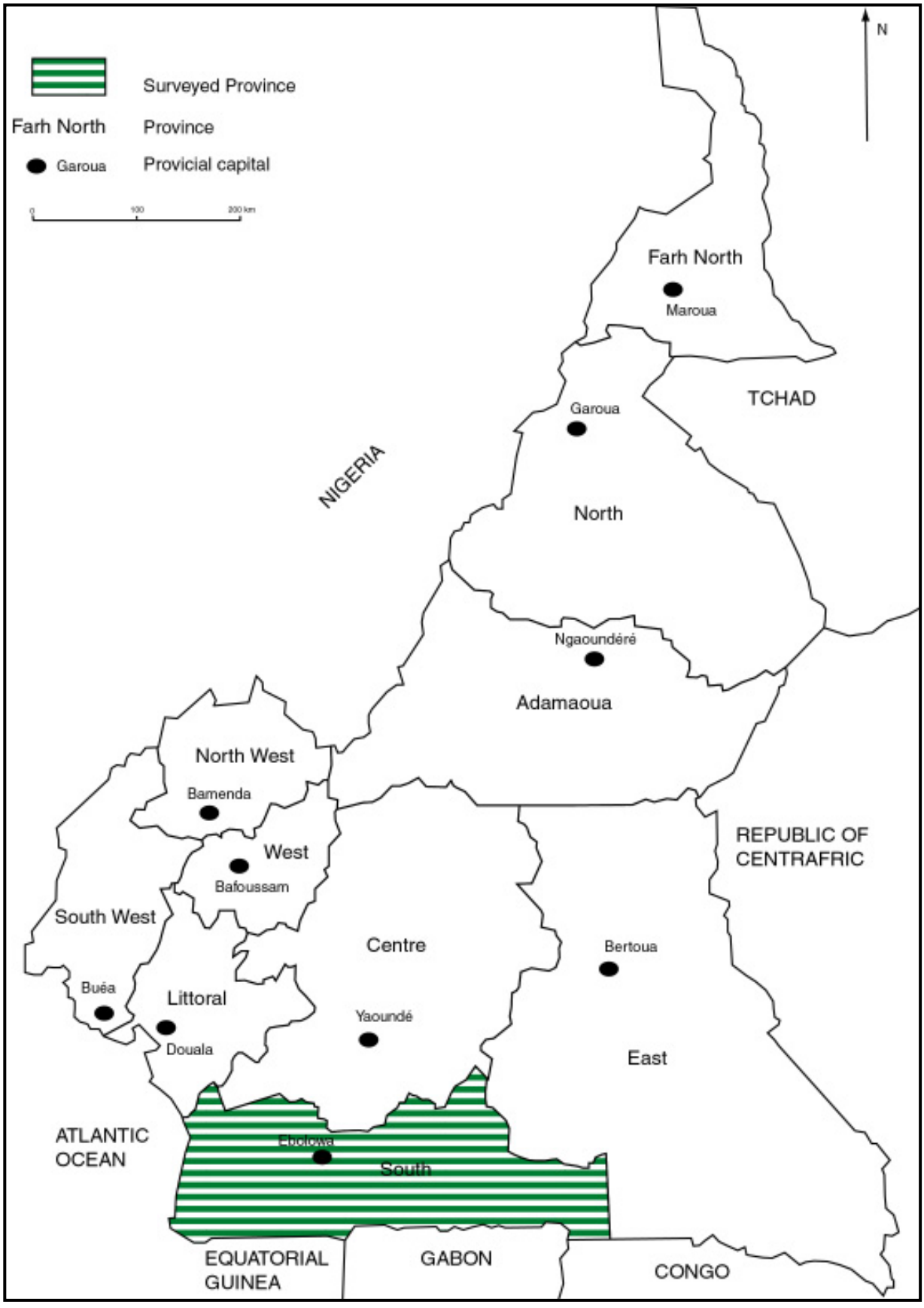
Trading in rural area deals mainly with selling surplus farm products. These exchanges take place in markets (there are local and international or boundary markets) and along roads, since markets are not spread through out the entire region. International markets are the following: *Abang-Minko'o* and *Aboulou* (boundary with Gabon) *Kye-ossi* (boundary with Gabon and Equatorial Guinea). Periodic markets (which were places for selling cocoa) do no longer exist since cocoa marketing has been liberalized. Apart from the selling of cocoa, these periodic markets played a great role in other product exchange in the region. There were some initiatives from local elites to institute markets in some of the province, but the project didn't work since the rural people didn't appropriate the idea.

3.3.2- Average income

More than 70% of the southern province population depends on rural activities (agriculture, hunting and fishing) for their revenue. For many years, cocoa has been the principal source of income of rural people, and contributed to up to 48% of their total revenue (Folefack and Gockowski, 2004). The frequency of this revenue during the year is a bell shaped curve; the pick corresponds to the cash crops (cocoa mainly) sale period (from September to December) and the rest of the year is dominated by food crops sales for the most, and hunting product for the others.

Since the liberalization of cash crops in general and cocoa product in particular (early 1990's), the prices fluctuate a lot. This fluctuation of prices coupled to the very high uncertainty due to pesticides and fertilizers unavailability affect deeply the cocoa production and consequently the revenue of rural people.

Map 1: Administrative map of Cameroon



During the year, rural people receive some money from the sale of food crops along roads. Products prices depend at a certain level, on the state of the road where they are usually sold. In the area, rural roads in good state linking one locality to another are much more frequented than those in relatively bad state, even if it is 20 km longer. Consequently, these preferences affect the prices of goods between the two roads. It has been found that the rehabilitation of a spoke results to rise of 100 to 150% of the selling price of goods.

Access to loans is very limited and marginal for rural people (Folefack and Gockowski, 2004). Only 7% of them can benefit loans, not to the specialized financing institutions, but through the non formal organizations (individual family and relatives, family associations and tontines.). These credits are in the form of cash, agricultural inputs and productive materials.

Rural people still lack tolls (budget estimates, calculations and measurement) for the financial management of their activities. They usually spend lot of money as soon as they have sold their cocoa, and during socio cultural events (wedding, burial ceremonies, etc.), national and religious feasts, and during the back to school period.

3.3.3- Brief info on service provision

3.3.3.1. Education

The educational system (technical and general) follows the same national administrative structure, with authorities at different administrative levels. From the latest political reforms on educational reforms, three ministries are in charge of education in Cameroon, they are: Basic Education, Secondary and Technical Education, and Higher Education Ministries. Basic Education and, Secondary and Technical Education concern nursery and primary schools (for the first one) and secondary general and technical schools (for the second).

The schooling rate of the province is neither under the national rate, nor the least of the country (**Table 4**). People generally have a primary level of education. According to the educational 'standards', each school section is to be attended by people belonging to a defined range of age based on the pyramid-shaped diagram representing population by age groups. The 105% schooling rate of this section in the surveyed area can be explained by the fact that people attended this school section are more than expected ones according to that 'standards'. Theoretically, the 5% excess may be composed of younger or older people, but based on our observations, older ones are the must concerned.

Table 4: Schooling rate (%) of different school sections in Cameroon

Provinces	Sections			
	Nursery	Primary	Secondary general 1st cycle	Secondary general 2nd cycle
Adamaoua	6	97	25	12
Centre	36	113	53	36
East	13	104	23	11
Farth-North	2	92	15	6
Littoral	36	91	59	33
North	4	97	17	8
North West	10	93	28	16
West	15	124	46	23
South	**17**	**105**	**39**	**23**
South West	14	82	35	18
Total	17	100	35	20

Source: Ministry of Education

Primary schools exist in all the area (in villages and towns). Secondary schools are found only in Sub divisional localities (at least the first cycle), and in all the divisional localities there exist schools with complete cycles (first and second) both for general and technical education. The southern province is

neither the most equipped concerning educational infrastructures nor the least of all provinces (**Table 5**). About two schools/100 km².

Table 5: Distribution of school infrastructure by province in Cameroon (number of schools, classrooms and seats)

Provinces	Number of schools	Number of classrooms	Number of seats
Adamaoua	586	2 343	69 460
Centre	2 897	16 154	624 424
East	779	3 224	101 849
Farth North	1 648	7 132	170 679
Littoral	2 118	13 018	619 888
North	759	3 376	94 122
North West	1 771	9 445	320 606
West	1 948	11 726	470 201
South	**898**	**3 649**	**100 196**
South West	1 135	6 750	237 517
Total	14 539	76 817	2 808 942

Source: Ministry of Education

3.3.3.2. Health

The structure of the health system is not built according to the classical administrative structure, apart from the provincial representative of the Ministry of Health, who is at the provincial level or capital. The southern province is divided into nine Health Districts (**Table** 6), each of them governed by a chief of Health District, covering variable area sizes from one to another. Health Districts are composed of Health Areas, each of them having variable Health Areas. According to Health authorities, the choice of a zone as a Health Area lies on various criteria: demographical, geographical and economical.

Table 6: Health statistics in the Southern Province of Cameroon in 2004

Health Districts	Number of Health Areas	Health Centres (Number)			Population
		Private	Public	Military	
Ambam	19	7	21	0	69 506
Djoum	9	6	6	1	32 637
Ebolowa	24	7	41	1	156 920
Kribi	6	24	24	0	96 832
Lolodorf	9	3	21	0	54 357
Meyomessala	12	5	13	0	44 586
Mvangan	6	3	7	0	33 280
Sangmelima	11	7	15	0	85 060
Zoétélé	9	4	10	0	34 532
Total	**105**	**66**	**158**	**2**	**607 710**

Sources: Southern Provincial Delegation of Public Health Ministry

Theoretically, each Health Area is supposed to have at least one Health Centre. Health Centres may be privately or publicly managed. The private ones are generally owned by churches (Catholic or Protestant) or non confessional owners. Public one may belong to military authorities or to the government. Health Centres are under the supervision of the Chief of District Health, no matter their nature.

Activities of Health Centres deal with promotional, preventive and curative matters. The supervisory role of the Chief of the District Health concerns mainly promotional and preventive activities. The province has theoretically the best coverage and follow up level of the country considering the number of persons per doctor or nurse (**Table 7** – one doctor takes care of about 600 people, and one nurse is in charge of 1200 people, etc.). But this is very theoretical since, according to health authorities met, there are a lot of

villages that are permanently difficult to reach through out the year, and inaccessible in rainy seasons (About one third of the Ebolowa Health District is accessible during all the year. Over 2/5 of it is not accessible all the year, and the rest in accessible during dry season and non accessible in rainy season). So in practice, accessibility constitute a very serious limiting factor as it will be seen further.

Table 7: Health human resources and infrastructures in Cameroon: ratio per province

Provinces	Designations				
	1 Doctor	1 Nurse	1 Bed	1 Health Centre	1 Pharmacy
Adamaoua	9 876	2 767	749	7 439	95 469
Centre	4 941	1 425	761	6 772	48 094
East	14 663	2 444	1 070	6 618	83 092
Farth North	34 123	6 012	1 948	14 086	242 274
Littoral	7 023	1 784	577	9 805	55 016
North	20 662	4 396	2 094	10 506	137 747
North West	14 378	2 881	733	11 462	163 906
West	12 677	1 890	477	7 361	30 940
South	**583**	**1 207**	**462**	**4 850**	**37 070**
South West	13 167	3 303	639	7 115	40 911
Cameroon	10 083	2 249	768	8 555	62 823

Sources: Ministry of Public Health

3.3.4- Telephone coverage

In Cameroon, both mobile and fixed phone are used. As in most Sub-Saharan African countries, the mobile phone network (starting around the year 2000) has seriously improved the national telephone network (covering urban areas first, and must rural one after) which relied on the fixed telephone exclusively. Very difficult to access (administrative procedures) with a very expensive installation cost (more than 150000 FCFA, USD 300), the use and ownership of telephone was deeply selected and reserved to rich and socially high level people. These limiting factors contributed to the discrimination of peri urban and rural poor people for many years, affecting in their access to some services.

Fixed phone network is very limited in rural areas. For mobile phone network, the two main existing operators cover the main administrative localities. Very few villages are covered by the mobile phone network. These ones concern mainly villages located on high altitude, around mobile phone network covered towns.

Table 8: Mobile phone coverage status in the Southern province of Cameroon

Divisions	Sub divisions	Mobile phone coverage (Yes/No)	Names of some villages with mobile phone coverage
Mvila	Ebolowa	Yes	-
	Megong	Yes	
	Ngoulemakong	Yes	
	Biwong Bane	No	
	Mvangan	No	
Océan	Kribi	Yes	Pama, Bipaga, Fifinda 2 Zamakoué
	Lolodorf	No	
	Bipindi	No	
	Kampo	No	
	Nyété	No	
	Akom 2	No	
Vallée du Ntem	Ambam	Yes	-
	Olamzé	No	
	Ma'an	No	

	Aban Miko'o	No	
	Kiye Ossi	No	
Dja et Lobo	Sangmélima	Yes	Nkout, Meyomessala Mvo'o Meka
	Djoum	Yes	
	Zoétélé	No	
	Meyomessala	Yes	

3.3.5- Electricity coverage

Electricity is supplied mainly in the provincial, divisional and sub-divisional capitals. Apart from the Vallée du Ntem Divisional area, the whole provincial supplying network is insured by a hydro electrical dam. Villages are then not supplied with electricity (apart from few located alongside main roads which are connected to the electricity network that serve administrative localities), affecting very deeply the functioning of some services (health centres, schools, etc.) which need some equipments that function with electricity.

3.3.6- Seasonality

Annual and weekly events are generally seasonal. This seasonality period is the occasion for the migration of people and goods within the survey region and between different localities, according the functions of each of them (productive, consumption, services, etc.). Annual seasonality deals with cocoa sales period and national feasts to a lesser extent. Weekly seasonality concerns market days and weekends migrations.

The survey region is a Humid Forest zone (permanently wet). This climatic condition gives the area the advantage of cultivating through out the year. Perennial crops are then sold at any time everywhere, and this is verified for food crops. However, cash crops are produced once a year, and then constitute determining economical factor for rural people since it generates great amount of money on a very short period. The cocoa sale is a four months period (September to November). For most of the farmers, this period is the one for them to realise their projects, generally it deals with equipment. And many of them said that they bought or will buy their motorbike at this occasion. Even operators and support services are said to have intensive activities at this period.

This cocoa sale period is also the one where lots of trucks and pick ups are found in villages. These trucks do not belong to villagers. They come from other towns of the country (Douala, Yaoundé, Bamenda, Bafoussam, etc.) to collect cocoa in villages. As soon as the selling is over, all of them become very scarce in the region, and only those belonging to agro industrial firms circulate.

Other annual seasonality issues concern national and religious feasts, and school calendar (holidays and back to school periods). These are occasions where people move from villages to administrative units, and vice versa. In terms of impact resulting from changes occurring, this second annual seasonality is not too important as the first one, since it is very limited in time.

Weekly seasonality deals with market days (for some villages) and urban people migration to their villages. As said earlier, all villages do not observe market days and there exist three international markets. Market days are very special occasions for rural people in the sense of the social, economic and financial impacts and changes they provide in the area (people and goods migrate with lots of encounters, exchanges, profit making, etc.). Apart from the transportation of small amounts (up to 250 kg) of food crops goods from households and farms to markets, there exist local means of collecting crops for their selling purpose to international markets. This is done by women locally called "*Bayam Sellam*" (In Pidgin tongue – local commercial tongue – this word is used for women who are retailers of products. They buy food crops in villages and sale them in different markets). These kinds of goods transportation are made by middle scale trucks (up to 2 tons), during the two to three days before international market days.

The *Beti* people are also much linked to their origins (villages). Because of that, they move very frequently to their villages, in order to take part in different socio cultural activities (wedding, burial ceremonies, funerals and visitations to relatives.). This happens during weekends.

4- Survey results

4.1- Policy and regulatory environment

The regulatory framework of rural transport in Cameroon does not really benefit from any specificity or particularity at all. The Rural Transport System is defined in the Rural Transport Policy Program framework. It is a component of the SSATP, which aims to enhance rural development through the development of Rural Transport System, since rural transport is a catalyst for income activities in rural areas.

The Rural Transport Policy Program is now going through a very deep restructuring; it had two main objectives:

- Define a planning policy, a financing system and rural roads construction techniques;
- Define strategies of improving Rural Transport Services and the promotion of IMT.

The legal framework of water transportation is governed by the Maritime Code. The main target of this text is the regulation of circulations on zones, and it states that the operation of boats is under the obligation of a register number. The Rail Concession Convention governs the rail transportation. Rural transportation is particularly mentioned in it in the way that areas where the train is the only means of transport must be served for transporting people and agricultural products. This is a social component of the agreement, which stipulates that apart from the commercial services, there are some non commercial obligations imposed by the government leading non profitable services that are compensated by the Cameroon government. But due to the non respect of these commitments by the government, the railway company decided not to stop anymore on the railways, isolating lot of villages that are on the rail spoke. This exists since several months. There is no rail transportation in our surveyed region.

The legal framework of land transportation is defined by the law N° 2001/15 of the 23rd July 2001 governing the land transportation profession and auxiliaries. The application texts are still in preparation. All the previous dispositions are still empowered. These arrangements are in the form of ministerial decrees, decisions, orders and rulings and circulars. Previous governing texts do not really give an important place to rural transport.

Since 1996, lots of reforms in land transport infrastructure have been made. The government has established and settled the 'Transport Sector-based Program' which is the reference framework for road investments that will reduce the degradation of existing infrastructures and ensure their reforms. This program is supported by the 'Road Management Initiative' and the 'Rural Transport Program'. Significant results have been achieved: i) the creation (1998) of the road funds, an institution in charge of securing road maintenance resources; ii) the railway concession process; iii) the liberalization of the maritime sector. In the road domain, that strategy has allowed the following: define a road network having priority which benefit for the essential available means; ii) list government missions on planning, programming and control tasks; iii) privatise road maintenance works.

Integral parts of the 'Sector-based Transport Strategy', The 'Rural Road Maintenance and Rehabilitation Strategy' adopted by the government is based on the principles of community participation and the decentralisation of responsibilities of rural road management to the local councils. It involves shared roles for the rehabilitation and the maintenance of a defined road network having priority. It stipulates that the government will finance the rehabilitation of that network, in compensation of the local councils and population's commitment to insure its post-rehabilitation current maintenance. Within the government strategy framework for the reinforcement of decentralised structures, local councils should insure work supervision for rural roads that they will be responsible for after an initial rehabilitation financed by the

government. It is also said that these provisions will be formalised in an entire law on the rural road management that is still in a project form.

In Cameroon, other policies involving rural transport concern: National Development Participatory Program (Ministry of Agriculture), National AIDS Control Program, Poverty Strategy Reduction Program. (**Table 9**).

Table 9: Overview of Policy and regulatory framework relevant with Rural Transport

Designations	Exists	Implemented		Remarks
		National	Surveyed area	
Policy				
Is there a National Transport Policy? If so does it address rural transport issues?	Yes Yes	* * * * *	* * *	
Is there a Poverty Reduction Strategy Policy (PRSP)? If so, does it address rural transport issues?	Yes Yes	* * * * *	* * * *	
Does a Rural Travel and Transport Policy (RTTP) exist?	Yes	* * * *		A Rural Transport Program, that deals with land transportation reforms
Does a road fund exist?	Yes	* * * * *	* * * *	
Does decentralised road funding exist?	No			
Agriculture policies relevant to rural transport	Yes	* *		
Gender policies relevant to rural transport	No			
HIV/Aids policies relevant to rural transport	Yes	* * * *	*	
Environment policies relevant to rural transport	Yes	* * * *	* * * *	
National Development Participatory Program	Yes	* * * *	* *	
Sector-based Program for transport	Yes	* * * *	* *	It concerns roads maintenance
Rural Transport Program	Yes	* * *	* *	It concerns roads maintenance
Regulatory frameworks				
Freight regulation	Yes	* * *	*	
Freight fare regulation	No			
Route regulation	Yes	* *		
Tax incentives	No			
Freight Safety				
Speed limits	Yes	* * *	*	
Prohibition of passengers	Yes	* * *		
Loading	Yes	* * * *		
Axe load control	Yes	* * * *		
Vehicle licensing	Yes	* * * *	*	
Driver regulation	Yes	* * * *	* *	
Public transport regulation				
Price fare regulation	Yes	* * *	* * *	
Route regulation	Yes	* * * *	* *	
Tax incentives	No			
Licensing	Yes	* * * * *		

Public Transport Safety				
Passenger numbers	Yes	* * * *	*	
Speed limits	Yes	* * * *	*	
Safety belts	Yes	* * *	*	
Loading	Yes	* *		
Driver regulation	Yes	* * * * *	* *	
IMT regulation				It concerns motorbikes taxis only
Safety	Yes	* * * *	* *	
Prices	No			
Vehicle licensing	Yes	* * *	* *	
Incentives	No			
Other Issues				
Vehicle regulation				
Import regulation	Yes	* * * *		
Specifications	No			
Vehicle Testing	Yes	* * *	*	
Other operator costs (road toll barriers and other levies)	Yes	* * * * *	* * * * *	
Road safety (infrastructure)	Yes			
Driver licensing regulation	Yes			
Local government bye laws				
Local fines	Yes	* * * *	* * *	
Terminal fees	Yes	* * * *	* * *	
Others				
Local road groups	Yes	* * * *	* *	
Formal Driver / Owner Transport Association	Yes	* * * * *	* * *	
Other Issues?				
Informal Frameworks e.g. Cartels				
Informal Driver / Owner Transport Association	Yes	* * * *	* * * * *	
Public / private competition – does this exist?	No			No public vehicles operating in rural areas
Informal road checks	Yes	* * * *	* * * *	
Local road groups				

Legend: * * * * * = *Very Well;* * * * * = *Well;* * * * = *Fairly Well;* * * = *Limited;* * = *Very Limited*

4.2- Views of key informants on policy

In general, there are different points of view on the existing policy in relation with rural transport services. These points of view vary from one geographic level to another, and reflect the fact that there is a decision level and an executive one. Generally, beyond at the national level, authorities do not really feel considered in the process of establishing policies. They say that their contributions or points of view (mentioned in their periodical reports) are not usually taken into account, if yes partially.

4.2.1- National Authorities

They generally agree with policies, and based on our meetings, they don't have an exact idea of the transport field situation. For example, about the mode of transport that should be promoted, they consider bicycles as a very old transport means that is no more desired in villages. According to them, rural areas inhabitants need motorised mode of transport. This idea is not what we found out on the field. Bicycles are found in villages and, according to people we talked with, it is a means of transport which has a very important place and role in households. It is mainly used for duties related with: trade, health and

education issues, socio-cultural purposes. However, they said to be discouraged by their very high selling prices. At the other side, there is no facilitating process to reduce those prices.

The PRSP deals only with the infrastructural issues, as a determining factor for reducing rural poverty, and improve the living condition in those areas. The HIV/AIDS policy recommends a series of sensitization sessions toward operators and users. Transport is considered to be among the sectors where HIV/AIDS is mostly present. Operators and the different spokes they operate on are then the subject of the following activities: sensitization, tests and promotion. However, these activities are carried out on urban spokes mainly. Rural areas are not really the main target, despite the existence of Local HIV/AIDS Committees Controls that should work within rural areas, but transport sector is not the main target.

4.2.2- Regional and district Authorities

They are not all aware of existing policies dealing with their technical matters. They agree that transport, as a transversal matter, is useful for all different domains. Nevertheless, all the policies established in the various sectors of the economy remain theoretical. Apart from the Public Works and the transport ministries authorities, most of these authorities do not really know whether there is a relationship between the policy of their sector and transport matters or not. They generally have very little ideas about what is supposed to be, but not the contents of the policies. Most of them (health, transport, education and public works) also complained about the fact that the suggestions they make in their periodical reports are scarcely taken into account when establishing these policies.

4.2.2.1. The health and education services

The health policy in general, and Programs ruling activities for fight against HIV/AIDS and other diseases rely on the sector structuring to plan and organize emergencies and other forms of interventions relating to their activities. Within the health sector, lots of exchanges between health centres are supposed to occur, involving people and freight transportation. But according to Health centre authorities, Health districts lack vehicles to ensure these transportation needs. The Ebolowa Health District hosts 47 health centres, with only 10 motorbikes. In case of an emergency, the sick person or his family ensures his transportation to the hospital. This may lead to: death on road, reach to the hospital too late. During high activities periods (vaccination campaigns, sensitization and promotional sessions, etc.) they rent vehicles to insure the transportation of their materials. So to perform very efficiently, the strategy adopted by health authorities consist of covering the maximum activities on the maximum health centres during one trip. According to health authorities, the existing fleet should be managed by the Chief of Health District, but they are not the ones responsible for the vehicle and motorbike distribution among the health centres in their district. Fleet distribution should follow objective criteria, but on the field the criteria influencing that distribution are not objective. The points of view of District authorities seem not to be taken into account, affecting deeply the results they expect, since lot of areas are not accessible during various period of the year.

According to education authorities, every government high school should be provided with a vehicle for transport purposes. But, lot of them complain about the lack of transport means to perform their job. However, comparing to the other sector, their transportation needs are less. The examination periods (from May to June) are the only ones where they have great transport needs, for the distribution of subjects at different examination centres. In those periods, they may also rent vehicles or use the market vehicles to cover the other localities. This practice is not without disagreements: subject losses, lateness in the start of exams and cheating.

4.2.2.2. The public work authorities

In the Public Works sector, the idea of involving rural people in the road maintenance process is a very good approach that in a participatory point of view, give them a part of the responsibility of the road and its state. This is what is recommended in the New Rural Roads Strategy. This participatory approach is implemented by the enterprise in charge of rehabilitating or maintaining the road, through the process of

identification, sensitization and training of the villagers along the road. Rain barriers are then built, to insure that vehicles will not damage the road.

According to the agreement between the government and the construction enterprise, a rain barrier is built at the entrance of the rehabilitated spoke. This enterprise is in charge of establishing somebody to stay nearby, and control the vehicles that pass through. Generally, old villagers are chosen to do this job. They normally receive equipments to perform their job: lamp torch, book, pen, rulers, boots, padlock, and raincoat. They receive an allowance fees on predefined basis. They are told to keep the barrier close when it is raining and 3 to 4 hours after. Small vehicles (up to 2 tons) can pass, but trucks cannot. In case of some irregularities, they write down the vehicle registration number and give it to the responsible of the construction enterprise. This system does not function without defaults (lack of tools, non payment of allowances, etc.) and breach of some truck drivers (since there are some tools that lack and they know that they can't be hounded by the barrier keeper, they don't stop at the barriers).

The rain barriers financing is different from the one of road rehabilitation, and their management is under the responsibility of the enterprise which works closely with the Public Works authorities. According to the same authority, this participatory approach involving the local communities is a failure, and this may be explained from a sociological point of view: in the survey region, people have the mentality that all what is to be has to be done by the government, since they pay taxes. This particular revelation opens our mind to the results of the implementation of that Rural Road Strategy in the survey region. This leads us to some questions asked by some regional authorities: 'What will be the results of it? What can be the perspectives? Is it really adapted to the socio cultural and economic realities of the region? Can we define a very specific strategy for the region, If yes how is it possible?'

4.2.2.3. The transport authorities

According to them, a rural transport policy and regulatory framework should be established and implemented to regulate transport in these areas. Despite this lack, some aspects of those activities that are taken into account by the existing policy, even if it is not really adapted to the realities of rural environment. Transportation activity is mostly a social issue, with very less financial profitability in rural areas. Implementing the policy (licensing, safety and security issues) and all the required aspects mentioned in the transport will contribute to improve the service, involving reducing the number of people carried/trip. However, this may also increase the functional charges of the activity from the operators, with some other negative financial effects on rural transport services. Hence, operators will tend to increase the transportation prices to cover these functioning charges. Rural people will be the disadvantageous ones, because they will be the one supporting all the financial charges of this improvement. According to some transport authorities, operators who serve these areas with very poor condition vehicles will not be encouraged. An issue of all this should be to determine a 'minimum standards of security' that will be required to operators.

Transport authorities argue that lots of issues are mentioned in the policy, but they are not really enforced on field, due to the lack of working means. There are lots of influences coming from the political authorities, business men, and also from elites. Generally, these pressures come from those within them who own vehicles and motorbikes and do not conform to the regulatory exigencies. They finally have less authority towards operators, since these ones claim to be untouchable because they work for the elite or the government body.

In the other hand, they stipulate that the transportation profession is not valuable at a satisfactory level. This can be done by allowing operators to wear uniforms to do their job. According to them, this should give them more value and respect from people, and an incentive for people to get into the sector. Local community involvement in rural transport services is only mentioned in the policy for infrastructural matters. They should also be involved practically in transport services by encouraging indigenes to invest in transport means to serve their own areas. They can also be involved directly in the process of acquirement and management of fleet to insure people and freight transportation from and to their area. By

taking part to this, they will insure very regular trips in the area (transport, covering lot of villages along the road and then contribute to the development of their area.

4.2.3- Police

They are said to be responsible for the observance and application of the regulations. Nevertheless, rural transport in Cameroon rural area in general and in the surveyed area is mostly a social issue than any other one. If they were to apply all what is required as sanctions to operators and users, lot of rural and even urban areas would suffer from disconnection. People and freight transportation would be very limited. They said that they have to make kinds of arrangements to find out a compromise level that will be better for all, but the security all persons and goods are the over all other purposes.

4.2.4- Transport Associations

They are not all aware of the existing policy and regulatory framework. This can be considered as a serious lack in the sense that they don't know their rights, and cannot really perform their activities well. This is true for at least all the rural taxis individuals and association operators we met in the Vallée du Ntem and Mvila Divisions. However, the transporters syndicate in Sangmelima (Dja et Lobo Division) seemed to be aware of their rights and the policy and regulatory framework. This may be one reason among others why they do perform their activities better compared to those of other divisions.

After recognizing that there is really no regulatory framework for rural transport in Cameroon, they mentioned a certain number of aspects that, if not considered and corrected, cannot allow the achievement of the goals that policy tend to complete. They are the following:

- **Taxation and taxes calculation system.** According to the regulation, there are two types of taxes according to the serving spoke: operators working within a 40 km spoke (from the town where is located the tax centre he pays his taxes, which are generally regional and/or district towns) pay a 'tax in full discharge' (yearly paid to the local council, and costs 25000 FCFA, USD 50) and beyond that spoke they pay the 'Trading dues' (250000 FCFA, USD 500) tax. In general, they say that taxes agents do not care about the types of vehicle that is used to perform the activity; they just rely on another document produced by the transport services (Blue Card) in which all characteristics are giving (distance to serve, number of passengers, etc.).
  The second aspect of this issue is that the calculation process or system is not the same for all operators. They told us that, for two vehicles that are the same kind (capacity, mark, power, etc.) the amount of tax to be paid is different. And up to now, they don't really know the elements that are considered in the process of calculation of that tax. Paying yearly an average amount of 250000 FCFA (USD 500) is too expensive for the operators, if we consider the low profitability level of the activity. This amount has to be paid once, at the beginning of the year. Operators are not really encouraged by this practice, and prefer not to pay it, but give always 'tips' to officials. This constitutes great losses of income for the government. Serious investigations would have to be done to estimate these losses, and its impacts on the state budget). In other for each party (transport and operators) to profit from that, they suggest the reduction of that amount. And the sum they are willing to pay is up 100000 FCFA (USD 200), payable four instalments a year.
- Toll barriers locations. The regulation framework stipulates that toll barriers are automatically built on roads connecting to towns. The distance between two toll barriers is 70 km. In practice, all these barriers are at the entrance or the gates of towns. In the survey region, all rural areas to be served are at the other side of tools, since vehicles have to get out from the town. This is a charge added to operators even if he chooses to serve villages that are within a less than 40 km spoke (in that case he will not theoretically pay for the trading dues). A sum of 500 FCFA (USD 1) is paid each time a vehicle cross the toll barrier, and motorbikes and bicycles are not concerned.
- Police control. The regulatory framework does not give details on the maximum and/or minimum number of police checks on road distances, leading to a very confused situation. Since most of the

operators don't know their rights, they are always the object of practices and influences from police agents on roads.

4.2.5- Financial organisation

Rural area activities are still viewed from a very remote perspective by people, and financing issues. There are lots of funds that are available for financing the rural area activities, but lots of lacks remain, isolating them from one of the most important limiting factors that is money. Issues dealing with this situation concern the following: lack of guaranties, uncertainties, and remoteness of financial structures.

4.3- Road network and road conditions in surveyed area

In Cameroon generally, and in the area of study in particular, the transportation issues are under the technical responsibility of two Ministries: the Ministry of Transport, and the Ministry of Public Works. The first one is in charge of the enforcement and the follow up of all issues concerning transport services, and the second is involved in roads and infrastructures rehabilitation and maintenance. A lot of reforms have been made in the government in general and in the Public Works Ministry in particular: since 1993, they are no more responsible for field works; they are reduced to administrative tasks. In case of any work to be done on a road, they are in charge of the following: call for tenders, choose the firm to perform the work, insure the follow up and the reception of the works. These ministries are represented in the survey region at the provincial and divisional level by Delegates.

The transport system in the survey region presents similarities with classic ones: Regional/Provincial towns, Divisional towns, Sub divisional/Market towns and villages. Villages are mostly along roads, and the number of households varies widely from one village to another (from an average of 10 to more). Health centres, schools and markets are not found in all villages. Based on the serving function, there exist two types of localities:

- Provincial/Regional and Divisional towns constitute the departure and arrival points for both vehicles and motorbikes; they are the man hubs. They are the location of transport firm/agencies. A journey is generally linking one of these localities to another. Even if there is a departure to a village, vehicles do not stay there for the night, but come back to the Regional, Divisional towns. An exception is made to very remote Sub Divisional/Market towns where they specially stay for the night once they have reached there late in the night, or when road conditions has got very poor after a heavy rain.

- Sub Divisional/Market towns are transitional points for vehicles. They are departure and arrival points only for motorbikes. This can be explained by the fact that motorbikes are the mode of transport used to reach remote areas, due to the bad state of roads connecting these localities to villages and households.

According to economical functions villages are the productive zones, whereas other towns are consumption areas. These functions influence mainly the nature and the types of movements between these two centres: freights move mainly from villages to towns and, people (mostly) and freights move on the reverse spoke. These economical functions have a great influence on traffics, which will be discussed later.

4.3.1- Road network

A national stratification of roads according to the conventional classification in Cameroon gives us the following types of roads: National, Provincial, Divisional, non classified and rural roads. All these types of roads are found in the survey region in the categories of untarred and tarred roads (

Table 10).

Table 10: Distribution of types and categories of road network of the survey region per sub divisional units of the Public Work Ministry

Sub divisions	Distance of roads (km)									Total	Priority share network
	Untarred roads				Tarred roads						
	NR	PR	DR	RR	NR	PR	DR	RR	NC		
Ebolowa	94	58	340	432	88	6	0	3	0	1 021	528
Sangmelima	476	0	133	258	30	20	26	0	11	954	659
Meyomessala	0	61	81	450	36	14	83	0	31	756	288
Kribi	186	168	170	340	72	41	0	0	0	977	549
Ambam	59	0	127	372	65	0	0	0	0	623	326
Total types	815	287	851	1 852	291	81	109	3	42		
Total categories				**3805**					**526**	**4 331**	**2 450**
Road types / Total distances (%)				**88**					**12**		
Category / types of roads (%)	**21.42**	**7.54**	**22.37**	**48.67**	**55.32**	**15.40**	**20.72**	**0.57**	**7.98**	**100**	**54**

Sources: Southern Provincial delegation of Public Works

Legend: NR = National Roads; PR = Provincial Roads; DR = Divisional Roads; RR = Rural Roads; NC = Non classified Roads

Only 12% of the total road network is tarred, representing 526 km of it. Among all the types of roads, Rural roads are in the poorest conditions: three kilometres are tarred (<1%) and 1852 km are untarred (48.6%). National roads are those in better conditions. Priority share network is the one which has the priority in case of finance availability for any work on it.

For many years, the Southern Province of Cameroon has benefited from the presence of Agro Industrial firms, and timber exploitations or sawmills. According to their agreements with the government, these industrial firms, mainly sawmills, were called to create and open roads not only for the purpose of removing their timbers from the forest, but also to serve people in remote area (social aspects of projects). Lot of rural tracks and roads have been built, and according to the Public Works authorities, these acquired roads have not been well maintained neither by the government nor by the local communities, and they are in very bad shape.

Despite the lack of statistics, it has been observed that, according to the density and spread of the hydrographical network, the road network is seriously affected by rivers that snakes the surveyed area. On these intersections between the two networks, there is a necessity to construct bridges. Such infrastructures are very expensive and make the rural road maintenance very difficult, leading to areas that are cut away from the rest of the region. Nevertheless, there exist wooden bridges in some localities that facilitate movements, when timber used to build them is not yet rotten. At the point where the road is cut by a river, people use boats to cross it and continue their journey. The use of ferries exists but it is very scarce.

In the surveyed area in general, tarred roads are the one in good condition. The untarred roads are in bad conditions and not very negotiable. Rural and divisional roads are the one serving rural areas. Comparing distances to each type of road (Table 10) and the distances of road condition (Table 11) indicates us that rural and divisional roads are mainly the ones with the relatively good to bad conditions. This situation is closely related to the policy roads maintenance.

Table 11: Global state of road network in the survey region in 2003

Sub divisions	Road distances (km)			Total
	Road state			
	Good	Negotiable	Bad	
Ebolowa	252	254	513	1 019
Sangmelima	346	304	306	956
Meyomessala	210	109	437	756
Kribi	136	398	442	976
Ambam	208	154	262	624
Total	1 152	1 219	1 960	4 331
Percentage	27	28	45	100

Sources: Southern Provincial delegation of Public Works

One of the main characteristics of the network is that localities are connected to others by more than one route. This gives several possibilities to the operators, who can choose one of the existing roads, and generally the better the route going to a village, the more people pass there. There are two examples where two sides of a transport 'triangle' have tarred roads, with the third side having a rough and muddy earth road. This concern the following spokes: Ebolowa – Sangmelima (The tarred road is a 242 km long road passing through the Centre Province (Mbalmayo), whereas the untarred road is 117 km road. Without stopping on road, the duration of travels is: three hours on untarred road, and four hours on tarred road) and Ebolowa – Kribi (The tarred road is 462 km long road, passing through the Centre Province (Mbalmayo, Yaoundé) and the Littoral Province (Edea), whereas the untarred road is 171 km long. For a straight journey, the duration of travels is: three hours and thirty minutes on untarred road, and around six hours on tarred road). Most drivers who take the long way are the owners of private cars (worried about damage) and civil servants in official vehicles (concerned about personal comfort). One travel firm started a minibus service 'the long-way round', that was more expensive but more comfortable than the direct route, and although it attracted some customers, it was not sufficiently popular and was stopped. The only travel firms and bush taxis that specifically operate on those routes do so on the shorter course. However, some passengers still opt for the relative comfort and frequency of the longer distances on the tarred roads (despite the extra cost which mainly involves taxi fare and 2000 to 2500 FCFA more for long distances), by taking one minibus along one side of the triangle and waiting for a second minibus for the second side.

4.3.2- Road conditions

Road maintenance works involve the Ministry of Public Works. These works concern the following: opening up and creation, rehabilitation, maintenance and are carried out based on different types of funds. Two main funds are used for the financing of these works: the State Investment Budget (SIB) and the funds from the Highly Indebted Poor Countries initiative (HIPC).

According to the Public Works authorities, the HIPC funds are very occasional and then not sustainable. They are funds used mainly for road opening up and creation works and concern mainly rural roads. The PIB finances different types of roads, according to the following classification:

- Annual works. Priority share network is mostly concerned. This is all the network roads that are maintained every year.
- Three-yearly works. This is the part of provincial network that is benefit from maintenance on a three year frequency.
- Current and/or periodical maintenance works.
- Special emergency intervention works. These are works that are carried out depending on special events (national or provincial involvement) during which the maintenance or rehabilitation of a spoke can significantly impact the ceremony.

Each of these sources of funds may be used to finance different types of roads. According to public work authorities, the allocation of funds to roads maintenance does not always correspond to optimistic criteria. Theoretically, they are supposed to be at the basis of the choice of roads to be maintained, but what is finally done is not always what they usually recommend. Works are not generally carried on recommended periods, due to the funds allocation procedures which are very long.

Table 12: Overview of some road maintenance costs and distances in the surveyed area in 2004 according to their types

Sources of funding	Frequency of works	Types of roads	Distances (km)	Amount (USD)	Amount per km (USD)
S.I.B.	Annual	NR	323	674 149	2 087.15
		PR	110	419 544	3 814.04
		DR	173.74	568 505	3 272.16
		RR	167.55	259 014.60	1 545.89
		Other	ND*	1 486 859	-
	Special emergency interventions	NR	244.57	554 460	2 267.08
		PR	40	87 180	2 179.50
		RR	53	169 996.25	3 207.48
	Routine maintenance works	NR	634.49	Postponed to 2005	-
		PR	156.95		
		DR	180.74		
	Three-yearly	NR	667.78	1 637 823.40	2 452.64
		PR	129.80	341 737.44	2 632.80
		DR	158.73	312396.19	1 968.10
		RR	20	ND*	-
	Maintenance on tarred roads	NR	259.70	220 880.63	850.52
		PR	48.90	43 590.89	891.43
		DR	100.20	92 047.17	918.63
	Road strengthening	Tarred roads	75	125 432.66	1 672.44
		Untarred roads	335	1 214 000	3 623.88
H.P.I.C.		RR	98.20	1 421 233.10	14 472.84

Sources: Provincial Delegation of Public Works

Legend: ND = Non determined*

Apart from these, other activities subject to financing are the following: construction of bridges, control and follow up, studies to carry out, ferries functioning and maintenance.

An example of road quality and distance travelled came from bush taxis operating from village hubs into towns. There is considerable interconnectivity of rural roads, and so the bush taxis sometimes have alternative routes to reach the destination town. In this case, provided the road is negotiable, the drivers

opt for the road with more transport demand. One example where drivers rejected a relatively easy course, in favour of a worse road but with more villages along it was found during the survey period.

One interesting case study concerns a newly graded earth local road providing an alternative route to a section of a national road (on the Ebolowa – Sangmelima untarred road, at 38 km from Sangmelima), that is a 'provincial spoke to a market town'. Bush taxis and one transport firm had started to use the new route for some of their trips. This had dramatically changed the pattern of traffic on the new road (an increased traffic of bush taxis and reduction of motorbikes) and the old road (scarcity of bush taxis and increasing presence of motorbikes). For the villages on the 'new route', transport fares had gone down significantly (50% reduction of the prices of transporting people and goods), increasing people and freight mobility (with more trips to market each month). This seemed a good example of improved infrastructure (a graded earth road) increasing transport supply and bringing prices down. On the 'old road' the traffic frequency had decreased significantly, with the presence of lot of motorbikes. But prices remain the same for people transportation, and have increased by 100% (from one to two USD per a 150 kg bag) for freight transportation. There were still four to five vehicles a day on that road.

Box 1: Road conditions and quality of traffic

In the Southern province of Cameroon, up to 88% of the total network is said to be untarred. Around 50% of the whole network is in bad shape according to the public work authorities. In such humid areas, maintaining road network in a favourable and negotiable state is a great challenge in the sense that it needs a lot of money. The situation is getting worse. There is no real response from any stakeholders. In such emergency circumstances, roads conditions issues should normally be the main concern of all the rural transport system, a challenge that is shared among all of them. The government is no more deeply involved in these issues as they did before: Public works services are now restricted to an administrative role, involving in calls for tenders and reception of works. On the other hand, operators seem also very helpless in the face of this, and they say to wait for the government to do their 'job' since they pay taxes. Users share the idea of the operators and sometimes, they are responsible, by being involved in road network conditions in a very amazing way.

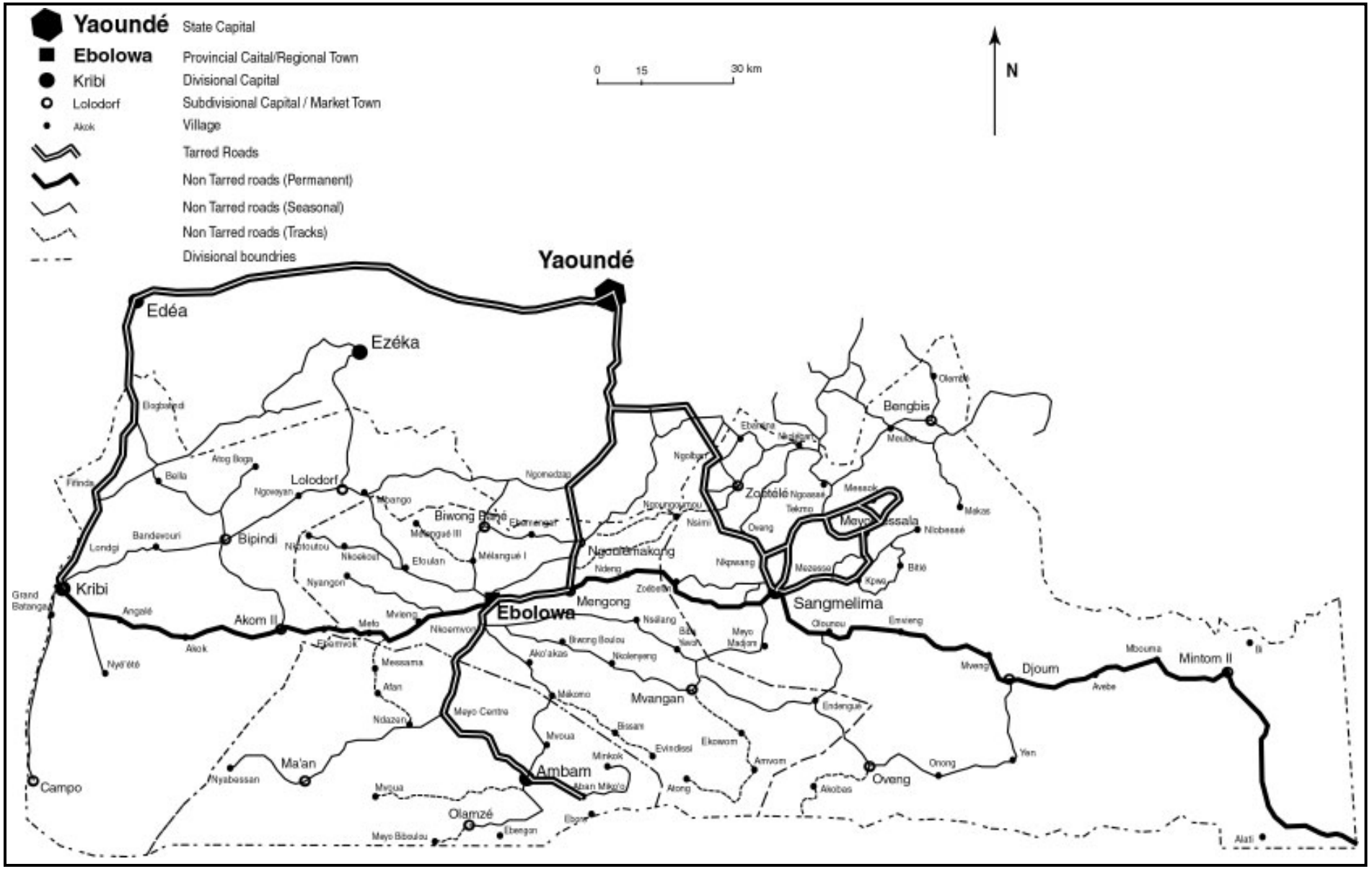
It is commonly said that 'where the road passes, development follows'. But in the surveyed area, this assertion may not be applicable since villagers are generally involved in some practices that can be qualified as non-patriotic, vandalism and more. It is common that, people of a village situated along a road contribute to damage the road by digging the road, pouring water on it, making mud at a considerable depth, thus to keep vehicles from passing. In other cases, they pull a timber log to the road, or cut a tree and put in on the road. These kinds of practices are very common in the province, according to the agents of public works. It is done throughout the year, in any season. We faced one of these circumstances in a village on the road going to Ma'an (a market village located at 147 km from Ebolowa, passing through Meyo Centre). Villagers poured water on the road, and made up to 50 cm holes, hence not allowing vehicles to pass. It was a kind of trap for vehicles. And once a vehicle got in, those villagers asked for money to remove it from there.

Apart from being a sign of lack of civility from those villagers, such practices are time consuming factors for road users, and consequently money losses. More so, such practices do not encourage people passing on such roads. One user met there said that passing there for him is an obligation for him since it is the road leading to his villages. If there was another road going to his village, he would have preferred it, but since it is the only one (in good state), he has no alternatives.

Another fact is that during such period, only 4x4 vehicles could pass. However, most vehicles involved in people and freight transportation are not equipped with reducer system. Hence, traffic is greatly affected, in the sense that not all vehicles could pass there.

4.3.3- Graphical illustration of survey location in the country

Map 2: Road network in the surveyed area



Adapted from INC, 2000

4.4- Existing transport services in the area

Suppliers of motorbikes, financial services and bus repairers are found in provincial and divisional localities. Motorbike repairers are found in all hubs (this 'omnipresence' proves that there exists a sufficient critical mass for motorbikes).

Stakeholders from the private sector and the civil society are present. There are no NGOs working specifically on transport in the region. Apart from the Dja et Lobo Division (Sangmelima) where different kinds of transporters associations exist, the whole survey region has not yet experienced strongly organized providers of transport services. In very few cases where they exist, these associations are mainly socio-cultural groupings, which gathered themselves within the bus station in order to establish and ensure minimum security and rules for them to perform their activities. They don't deal with issues that characterize an association, such as: protection of their rights, representations, information, training, and sensitization. They function as a family association.

4.4.1- Water transport

In the Southern province rural area, land transportation is the most used mode of transport. There also exists a great potential for water transportation, rivers network is very diverse and intensive. However, water transportation does not exit because of falls and rapids that do not allow circulation on water. Boats and ferries are used to cross rivers not provided with bridge. The interconnection of land route and those rivers is a great handicap for the continuity of roads, mainly in the rainy season. This is the case of some villages located at the other side of the *Ntem* and *Mvila* Rivers, such as *Olamze*, *Nyabessang*, *Meyo Ntem*. Animal traction does not exist. A reason that can explain this situation is the presence of the tsetse fly, which a limiting factor for the large domestic livestock.

4.4.2- Intermodal links

Bus stations play also an inter-modal linkage role between the different means of transport found in the area. Buses and motorbikes play different role in the transporting function of people based on a geographical approach: both of them serve people between rural localities, whereas apart from that intercity connection motorbikes are allowed to transport people within the towns as a taxi (locally called *Moto Taxi* or *Ben Skin*, from the pidgin tongue, it means 'to bend yourself'. It derives from the fact that to ride the motorbike, people have to bend themselves). Based on that function, people that are left in bus stations towns are immediately taken by motorbikes to their destination. This is the case in all hubs where bus stations are found (Regional, Sub Divisional and some Divisional/market towns). For other Market towns and all villages, these inter-modal linkages do not exist, since people generally live along roads where vehicles pass. This functional interdependence, where it exists, constitutes a serious matter of bus station management since it leads to affluence of people, encouraging thieves and other frauds and robberies.

Another inter-modal linkage is found specifically in villages, at the border of rivers where there is no bridge. Ferries and boats are used to cross those rivers; ferries are used mainly to transport lorries, buses, cars, motorbikes and, people and freights. These ferries belong to the government or constructing firms who are responsible for bridge construction on the river. This service is available from 6 am to 6 pm. Some boats are used during period of time where there is no working ferry (before 6 am and after 6 pm). They just transport people and also freight of a given quantity. Transported people reach these river borders by foot, or some other transport mode, and at the other side of the river, they use other transportation modes (it may be the same type they used to reach the river, or a different one).

4.4.3- Types of traffic

A general overview of the traffic in the surveyed area shows two main poles made up of pedestrians and motorbikes in one hand and, all the remaining modes of transport (**Figure** 1) on the other hand. The existing gap between these two groups may be a proof that IMTs play a great role in serving such rural

areas. People may walk a lot because of lack of money to afford transport service, and the use of motorbikes will be discussed further.

Based on the methodology, regional and market spokes have been identified easily. However, villages being located along roads, it has not been easy to select and work on five village spokes (from villages to homesteads), as we expected. There are very little households linked to a village; all of them are gathered into villages. We finally worked on three spokes considered as 'village spoke' based on their remoteness and the type traffic characterizing it.

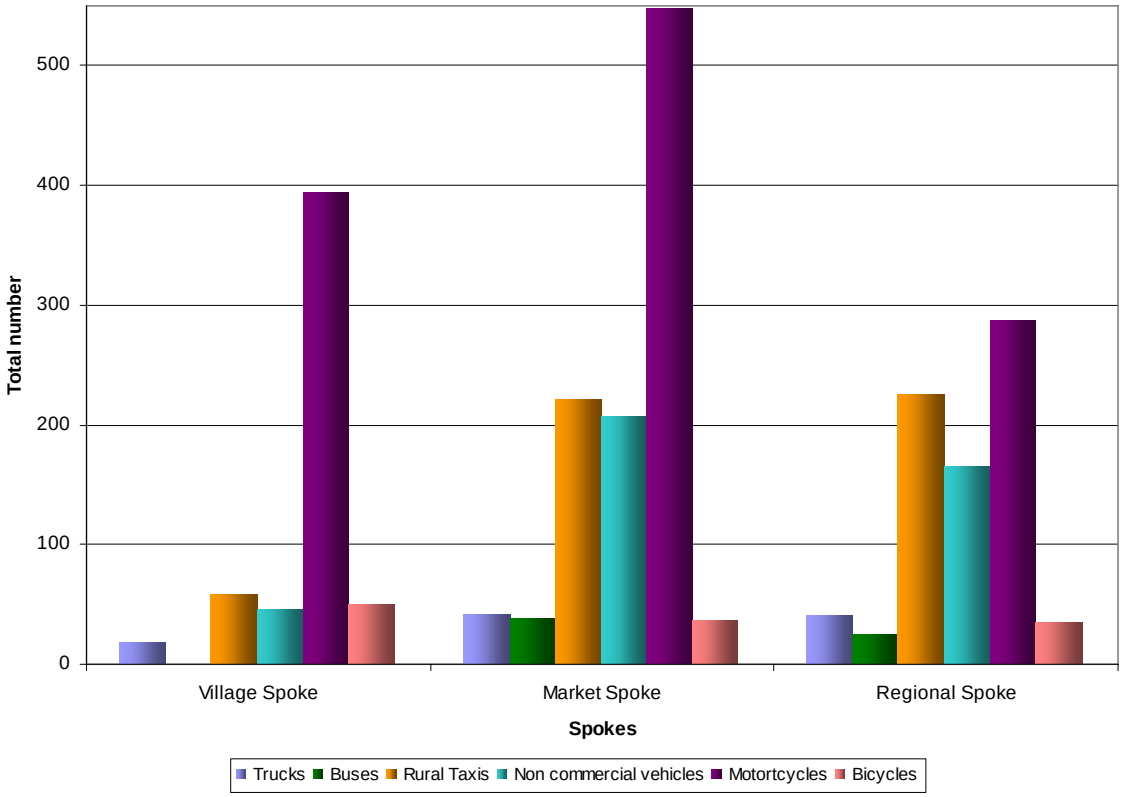
Traffic counts have involved the following spokes:

1- Regional spokes: i) Ebolowa – Sangmelima; ii) Ebolowa –- Ambam

2- Market spokes: i) Sangmelima – Djoum; ii) Ambam – Olamze; iii) Ambam – Ma'an

3- Village spokes: i) Ma'an – Meyo Ntem; ii) Olamze – Meyo Biboulou; iii) Djoum – Oveng

Figure 1: Distribution of grouped transportation modes and their total number according to different spokes in the Southern province of Cameroon



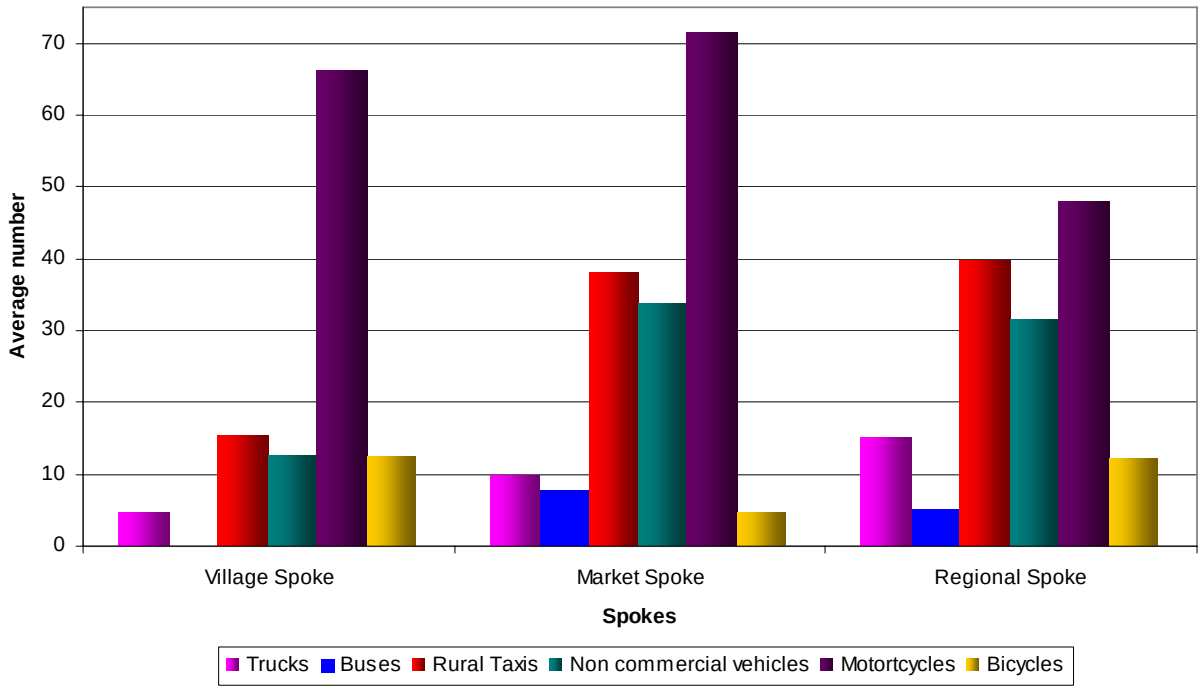
Among the four-wheel vehicles, the following are decreasingly more important: rural taxis, non commercial vehicles, trucks and buses. They are mainly dominant on market and regional spokes. IMTs (mostly motorbikes and to some extent bicycles) are the most present among all the transportation modes, and they are found at all the spokes. Most trucks found on village spokes belong to agro industrial firms. They help in carrying by-products from farms to processing units. During cocoa season, trucks carrying cocoa bags to bigger towns are also found. Buses are lightly scarce among all, mainly on village spokes.

By comparing spokes between them, market spokes are the most served, in terms of diversity and quantity of transportation modes. Village spokes are the least served among all, but there is a wide dominance of motorbikes, and bicycles to some extent.

4.4.4- Overview regional transport, with types and volumes of traffic

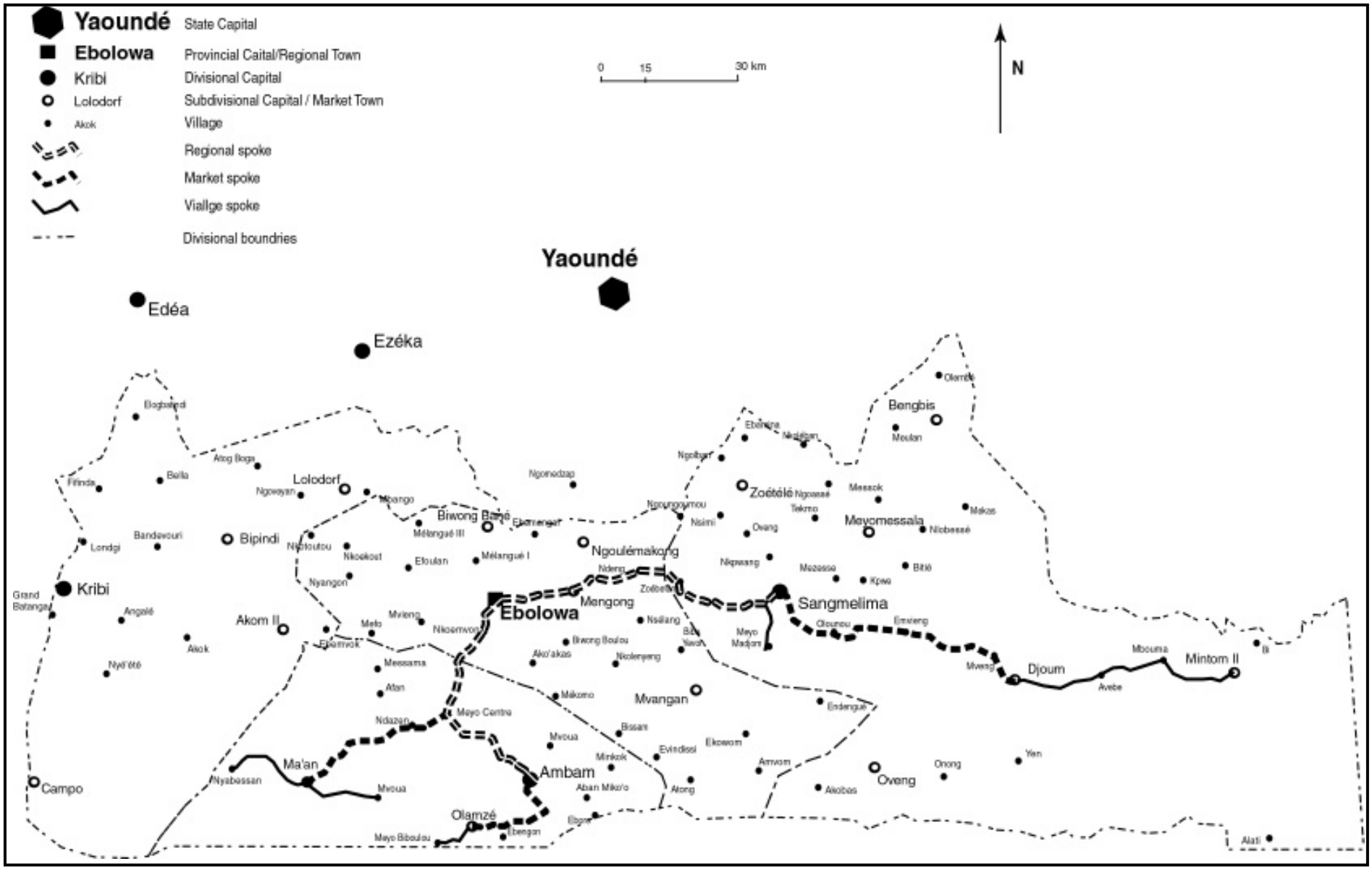
There are regional spokes in the area, among which the traffic counts have been carried out on two of them. Only 30% (representing 125 km) of the total regional road network is tarred. The remaining part is however relatively negotiable during the year. The spoke that is entirely tarred is an international road leading to foreign countries. As said before, the existence of a number of rivers in the area contributes to the presence of lot of bridges and crossing infrastructure on the road network. Many other secondary or tertiary spokes are connected to the regional ones, leading to different kinds of localities. There also exist many villages along these spokes, with different economical importance.

Figure 2: Distribution of grouped transportation modes and their average number according to different spokes in the Southern province of Cameroon



According to the traffic counts, motorized vehicles are the most found on that spoke (**Figure** 2). The most important ones are motorcycles and rural taxis. The other dominant types of motorized vehicles concern the following, in a decreasing quantitative order: non commercial vehicles, trucks and buses. The existing non motorized vehicles concern exclusively bicycles.

Map 3: Overview of selected spokes for traffic counts



Box 2: Transport syndicates and transport franchises

In the surveyed area, both transport syndicates and transport firms/agencies exist. The syndicates are associations of operators of transport (mainly 'bush taxis') that load at public transport terminals owned by town authorities. The main roles of the syndicates are the following: i) control queuing for loading at these terminals; they are not the one in charge of route allocation; ii) represent, as interface, the operators at the authority level and any other external stakeholder; iii) collect communal (from one to two USD daily) and syndicate (from 0.5 to one USD/trip) taxes from the operators. The Union taxes represent the loading fees, since the syndicate is in charge of loading vehicles.

Each operator chooses the spoke he wants to serve; but once chosen, the spoke cannot be changed for another one. By organising loading and queuing, syndicates prevent anarchic scrambling for customers, but the queuing system means that customers and operators cannot really select each other. This lack of competition for customers (it is determined by the queue) means that operators have little incentive to provide a better vehicle or better service. This is particularly evident with some alternative transport systems. The syndicates mainly operate in the main transport hubs, and have little, if any, influence in the smaller hubs or at village stops.

Apart from the syndicate, there are two main types of private transport firms/agencies, according to their mode of functioning:

i) Private transport firms that own fleets of buses and minibuses, and operate these from private terminals (bus stations). These mainly operate on long-distance inter-city routes with good infrastructure. These are similar to private bus companies in other countries. They generally have a good managing system with organized route allocation. All these are centralised from the firm manager.

ii) Transport franchises. These are private transport firms that offer franchises to other private transport operators to join them, to share their name and their transport terminals. These also operate from their own terminals (not the council terminal) where they operate their own system of queuing. Each franchise has been started by a single transport operator. This person has encouraged other transporters to join the franchise and use the brand name and the transport terminals (for a fixed cost of takings representing 10% of each total loading income and 10 USD/month). These transporters (the initiator and the subsequent partners) generally started as bush taxi operators, loading from the public terminals (with which they now compete). These franchises operate on the main (between provincial localities) transport routes (sometimes, in competition with the transport companies) and also on some rural routes (between divisional and sub-divisional localities) that have significant demand (in competition with bush taxis).

For the intercity routes, there is intense competition for the transport services and this is reflected in both prices and quality of service. Because they all load at different terminals, the customer has to choose which terminal to go to. Each agency may have many terminals. So people go to the terminal that provides them with the best price, quality, frequency and "brand image". Hence, the travel firms provide newer and more comfortable vehicles, and compete on price, frequency, security and "image".

On the busier rural routes, the franchises also encourage the passengers with better vehicles (generally minibuses), lower prices, better services and more secure terminals. The franchises are increasing their routes and having an effect on both price and quality.

On the less busy routes, the bush taxis are the only operators, and the oldest and most battered vehicles tend to operate on the more remote and less busy routes.

4.4.5- Overview market town hub and transport

Market towns benefit, apart from basic services (primary schools, health centres, etc.) from the following ones: gendarme offices, secondary schools (with at least the first cycle, this is the four first classes), agricultural services, post offices, a fixed place for market activities (apart from market days, they are some shops selling basic goods every day), most importantly shops. They have generally a hub like structure since they are opened to several other roads, and lead to other localities that may be other market towns, regional towns or some villages.

Market spokes are untarred roads, with variable conditions and vehicle traffic. As it is for the regional ones, they are regularly broken down by bridges and crossing infrastructures. They are classified among roads having priority in case of any rehabilitation operation. Market spokes has the same evolution as the regional one in term of types and quantity of transportation modes. Motorized transport is the most present, a priority given to motorbikes and rural taxis. Non commercial vehicles are present in quiet the same number as rural taxis. Trucks are fond in lesser amount, and buses are the least important motorized vehicle types. Bicycles are however present, but in less quantity.

4.4.6- Overview village hub and transport

Typical villages are located along roads benefiting hence from some advantages like electricity connections in most cases. There is no water supplying system network serving them, apart from very isolated cases of rich people who sink boreholes for water. Homesteads are relatively close to one another on a distance reaching five kilometres. Health centres are not found in each village, and an existing health centre is to serve many villages put together. They may be parastatal or private ones. Houses are mud-made structures, generally with roofs made out of palm leaves arranged in a very technical manner to facilitate the rain water flows. Iron or aluminium sheets are used by people with considerable income. Some of them benefit from an existing primary school, but in general these ones are located at an average distance of five to 10 km from homesteads. Beside their houses, it is usual but very scarce, to see some trading displays belonging to villagers. It is an activity with marginal economic importance (in terms of the financial benefit encountered), but which is of a great help to villagers since it provides them with basic goods as kerosene, sugar and soap.

Roads are usually untarred, in very poor conditions despite the effort consented by the government to restore them. It is in one of these villages along roads that private firms involved in the roads construction and/or rehabilitation works usually chose a person that should take care of the rain barrier. Both motorized and non-motorized transportation modes exist.

The traffic counts were held the day before the national public holiday. At this occasion, lot of people move from where they live (villages and homesteads) to the market towns to attend the organized ceremonies. Hence, passing on village and/or market spokes. That event could have influenced the results found. Based on the observations, rural taxis are the most found, followed by non commercial vehicles and trucks (owned by agro industrial firms). There was no bus found during the traffic counts. These spokes are the one where the greatest average number of bicycles was found. In most of them, traffic happens very early in the morning (four to five am) or late in the night.

For villages that are not located along road, but at the ‘end’ of a spoke (*Meyo Biboulou* for example), the above description is relatively the same. Roads leading there are in poor condition, with long grasses along them that constitute a screen for the road visibility. There exist some abandoned roads and paths that lead to some homesteads and/or to abandoned timber exploitation sites.

4.4.7- Overview of the transport fleet

The transport fleet situation of the Southern province of Cameroon can be understood through an estimation process based on different considerations. These are guestimates made for vehicles mainly used for transport of people and goods within the area on a year-round basis. They exclude national and international level long-distance services, within-village transport, fleets of vehicles of any large companies that do not provide transport services and vehicles that only enter for seasonal markets.

For four wheel vehicles, the average number of vehicles observed in bus stations has been multiplied by the number of these bus stations (exist only in regional and some market towns, which are the departure points). The overview of motorbikes fleet has been given by the motorbikes association leaders. An average of 10 and 350 motorbikes has been respectively considered for villages and towns. This is because some towns may have more than 1000 motorbikes (Ebolowa, Sangmelima, Kribi, Ambam), whereas others do have less than 200 (Djoum, Bengbis, Zoétélé, etc.), and others again less than 100 (Oveng, Mvangang, etc.). Also with the average number of motorbikes within the villages that varies a lot. The one of bicycles has been determined based on the average number of 1,5 per village and 15 per town, multiplied by the total number of villages (1185) or towns (22) in the surveyed area (**Table** 2).

Table 13: Estimates of the transport fleet operating in the Southern province of Cameroon

Transport type	Estimated numbers	Unit value (USD)	Overall value (USD)	Unit capacity No/ kg	Overall capacity No/ kg
Trucks (< 3 tons)	110	10 000	1 100 000	2 500	275 000
Buses (+20 seats)	75	6 000	450 000	2 000	150 000
Rural taxis	650	2 000	1 300 000	1 200	780 000
Motorcycles	19 350	700	13 545 000	100	1 935 000
Bicycles	2 100	160	336 000	50	105 000

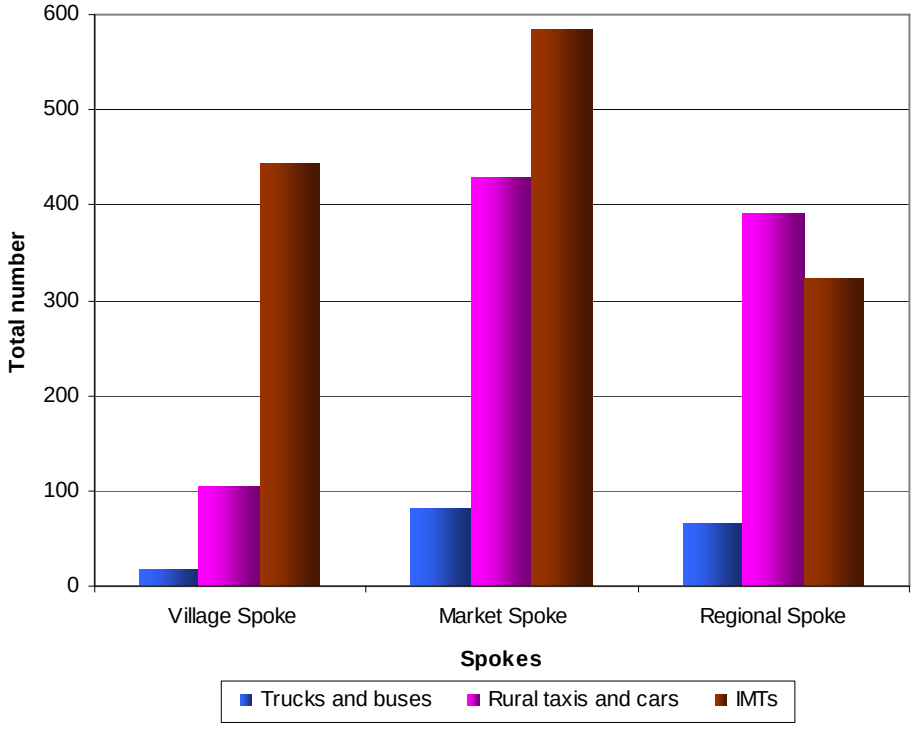
Sources: Field observations and author extrapolation

4.4.8- Transport types on the different spokes

The distribution of transportation modes shows that there is a great dominance of IMTs (mainly motorbikes and bicycles to some extent) in the whole surveyed area, followed by rural taxis and cars (

Figure 3). Regional spokes are of a little exception, because of the dominance of rural taxis.

Figure 3: Distribution of total number of vehicles types according to the spokes in the surveyed area



Motorized vehicles are largely spread in the area (they represent more than 90% of the total vehicles), and they are found in all the spokes (**Figure 4**). Hence, they transport quite the entire quantity of people travelling, since they observed capacity is more than 100% of the recommended one.

Figure 4: Distribution of average number of vehicles types according to the spokes in the surveyed area

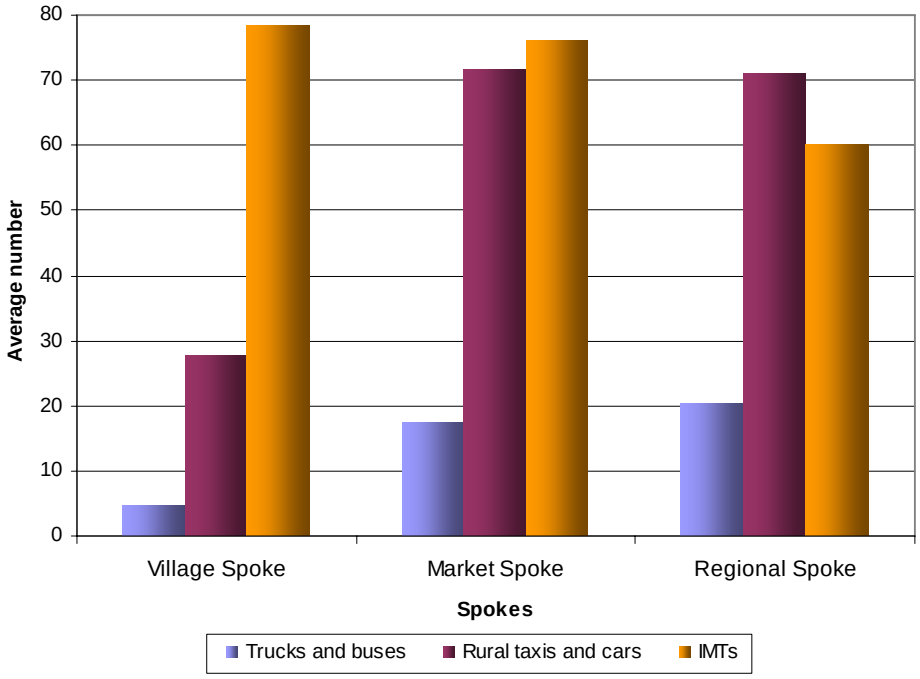
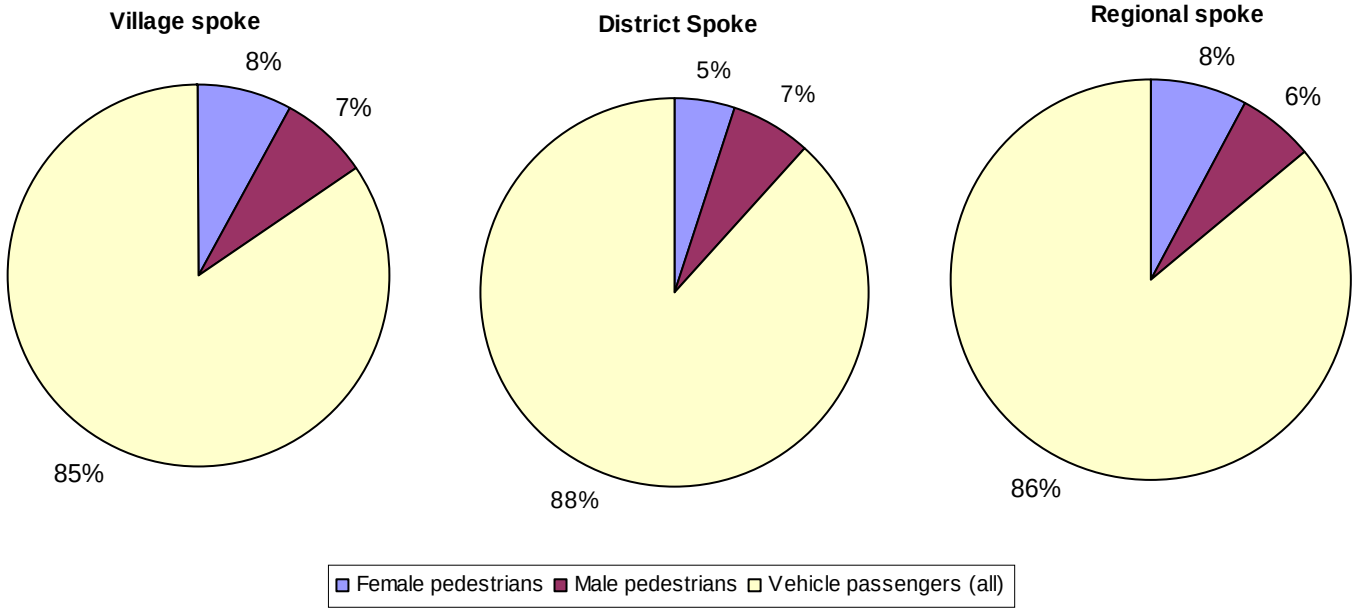


Figure 5: Proportion of pedestrians on the various spokes (for journeys in excess of 5 km)



4.5- Demand for rural transport services and user perspectives: Overview of demand and satisfaction information

In the surveyed area, very few people own their own mode of transport (according to the surveys, less than 2 persons in 10 own any type of transportation mean). Even for public or private services in charge of education, health, and other social or economic issues, the ownership level of transportation is low (see paragraph **3.3.3-**). In general, people depend entirely (for individuals) or partly (for social or economic services) on commercial means of transportation. For distances of more than 10 km, people are said to use vehicles. In areas surrounding regional, Divisional and market towns, the public transportation mean commonly used is cars. However, in remote areas, motorbikes are the one involved for transporting people and freights. In those areas, people stand just on the road passing in front of their houses, to have a vehicle (see paragraph **4.3-**).

A point of view that is commonly shared among the users is that rural transport in the surveyed area is very expensive, compared to their income.

4.5.1- Specific cases of Farmers

For farming activities, demand depends specifically on the size of the farm. Small and medium size farmers do not have very specific problems. They are those cultivating small to medium farms, involving neither too much inputs, nor great quantities of outputs. They use the same service that is available through the existing transport system. However, big ones are mostly those involved in cash crops cultivation and, to some extent food cultivation (plantain mostly). In the first case, great quantities of input are involved whereas it is not the same case for the second ones. But for outputs, all of them deal with great quantities of freight. The transportation prices of freights varies widely, and do not depend on the distance to carry in most cases. For a medium sized plantain bunch (15 kg) the transportation is 300 FCFA (60 cents), and a 50 kg bag of fertilizer is 500 to 1000 FCFA (USD 1 to 2).

All these demands are seasonal. Cocoa farmers are generally able to meet with financial needs for transportation since most of them belong to Common Initiative Groups (CIG) where there is a system of consolidating loads. When there is any need of transport, the CIG works in facilitating the transporting of freights from or to the village. The costs are shared among the farmers, and managed by the executive bureau. The distribution is ensured once the freight is carried. But for outputs transportation, buyers are the ones responsible for bringing lorries to carry bags of cocoa beans. Concerning food crop farmers, the load consolidating system is not really practiced, since buyers (*Bayam Salam*) are the ones responsible for collecting plantains in various farms and transporting them to markets.

4.5.2- Traders

Trade is a secondary activity for most rural people in the surveyed area. It is practiced along roads, and in markets. Among the traders, there are two different ways in which people deal with their activities. The first type of trading is sedentary, and the second is itinerant. Each of them has specific demand for transportation needs.

Sedentary traders are mostly found in regional, Sub divisional and some market towns. In general, the place where they are selling is their place of residence. They often travel to buy things they sell, but most of the time they have them where they stay. They are retailers, with non specific transportation demand.

However, itinerant traders are those travelling from one market to another, based on the markets calendar in the area; they mainly sell essential goods (**Box 3**). Some of them have their own means of transport, and are more mobile. For those who do not own any transportation mean, they depend on public services for transporting them and their goods. They usually travel up to 100 km/week, using or not their own transportation mean. Because they have to attend various markets, they generally travel very early in the morning (before five am) or the night before the market day. They constitute a specific demand for operators. In some cases, they greatly influence traffic in the sense that on some spokes, and one day before and after the market day, people travel during the night or very early in the morning. Transport

availability becomes scarce during the other period of the day. Load consolidation system is a scarce among traders.

For those who do not own any transportation means, prices are quite the same as with farmers. But generally, here the volume is a non negligible factor in price fixation. The bigger the freight (in terms of volume), the more expensive it may be. An example is a bundle of cloths weighting less than 50 kg, but traders have to pay two to three times the price of a bag of fertilizer weighting the same quantity. They said to spend around 10 to 20000 FCFA (USD 20 to 40) per week, depending on what they sell, and how far they travel. This represents about the half of their income, apart from the local taxes they pay in addition.

Box 3: Contribution of MIT to the trading activity: examples of bicycles, motorcycles and a motorbike trailer

An example of the place and the role of bicycles in the economic development of the rural area is given by its use for trading activities along road villages. All these activities are carried by settlers. They carry goods on luggage carrier and/or on the handlebar.

The first example concerns a cobbler (shoes repairer) we met on the Sangmelima – Oveng spoke, at some 25 km from Oveng on untarred road. He uses a bicycle to provide villagers with his services. This after service in rural areas is of a great importance since, generally, people do not have enough money to buy new shoes. So, instead of throwing them away, those shoes are repaired (for a price from 50 to more than 500 FCFA – 10 cent to more than USD 1 –, depending on the type of repairs to do) to last more. That cobbler said he travels from village to village, the whole week, repairing shoes. The bicycle he used is a modified one: initially with speeds, he has removed them to make it very simple for use.

The second example of trader is given by a man coming from the North West part of Cameroon. He said to be residenced at Ebolowa, and travels all the week from village to village for trading. He sales non perishable goods (sandals, tools for kitchen, etc.), and can travel a distance of up to 80 km per day. Week ends are generally his resting time. The bicycle he uses is a highly modified Chinese one but, it is still possible to recognize the bone of those long and strong Chinese bicycles. Another example of bicycle use for income generation purpose was found in Mvangan Market town. This a case of young traders with residence at Mvangan, but who used to travel over up to 120 km to sell non perishable good. They used to carry a great volume of about 100 kg goods for trading purposes. In other to maintain the package at the back of the bicycle, they have reinforced the luggage carrier by attaching sticks on it to make it longer. In this way, they have more space to carry greater volume of freights.

Motorbikes are also involved in the economic development of rural areas in the surveyed region. They cover longer distances using their motorcycles, and they are more efficient than those using bicycles. The first one sells various goods (sandals, new cloths, etc.) from village to village. It is a single motorbike providing trade service with a fixed box at the back of it, and other goods attached all around the motorbike and the handlebar.

The locally invested IMT is a composed motorbike, with a trailer tied out on the back of it with rubber. This is an example of the combination of two functions, namely the speed and the loading capacity, to perform a service. This service is provided by a couple who travel along villages and from market to market. They perform the service in a complementary way, each of them with a special role: the wife is the real trader and the husband is helping his wife in the service by driving the motorbike, and he is also a mechanic. They stay in Ebolowa, but travel all the week. The activity is of a great benefit for them since they say that it generates around 70 to 90 000 FCFA (USD 140 to 180) per week. Other weekly charges concern: local taxes (5500 FCFA – USD 11), fuel (20 to 30000 FCFA – USD 40 to 60), maintenance (20000 FCFA – USD 40). The trailer has a loading capacity of up to 300 kg, and the motorbike caries the wife and her husband.

These practices are of benefit to users and villagers (mostly those in remote areas), by ensuring income to

the first ones and goods availability to the second ones, and remain a very seasonal. The main reason can be the lack of critical mass.

4.5.3- Employees and financial services users

They are mainly those working in different existing factories in the surveyed area. Generally, they stay not too far from firms where they work, for them to go to the work place by foot. Some of them (mainly for timber firms) stay there for some periods of the year, and go back to their place of residence when the activity is on stand by (technical revisions on machines). In such cases, they use public transport means as any other people.

Financial services users also use the transportation means available, and do not have specific demand. They can travel either to Ebolowa or to Yaoundé for their money problems. This travel is generally once a month.

4.5.4- Students

Primary schools are found in villages, whereas secondary schools are located in district towns. In general, pupils go to school on foot. According to the principal of the Government high school of Ambam, around 30% of his students come from a distance of more than five kilometres. For the technical high school of Sangmelima, this kind of student represents more than 50%, and they walk about 10 to 15 km to reach the school. Although the class schedule (7h30 am to 3h30 pm) can allow them to cover these distances twice a day, this remoteness has negative influences on the education: lateness in rainy season, tiredness before the class starts.

Very few students own bicycles or any other kind of transportation mean. The use of motorbikes (it is the widely spread one among the public transportation vehicles) is said to be reserved for people belonging to middle to higher class of the society. Bicycles are the only IMT that are or can be owned by students. The ownership rate of bicycle is very low: no student has a bicycle in the Sangmelima Technical high school (around 1500 students), only 10 students own a bicycle in Ambam technical high school (1000 students), and three at the college of Ambam (2500 students).

Bicycles are either provided or not with a speed system. Since they financially depend on their parent, some of these students say they park their bicycle in case of any maintenance problem involving high amount of money to repair it. The bicycle can be parked for a duration of up to a month, while the student walks to go to school. The maintaining costs vary seasonally: during class periods they can spend 1500 FCFA (USD 3)/month, whereas in resting periods they spend 500 FCFA (USD 1). Apart from going to school, the bicycle owners usually have the opportunity (compared to those who do not own any) to visit relatives and friends, do some shopping. They often lend it to relatives, but in general this practice is not widely spread since it is sometimes a cause of damages on the bicycle.

4.5.5- Health users

Heath users use existing transportation services. There is no specific transportation system for emergency cases. In case of transporting a sick person, personnel vehicle can be used if available, but if not they are under the conditions (time losses, costs, safety issues, etc.) of public transportation system. If any health user wants to be at his ease when transported, he has to pay additive seats (two or three) or rent vehicle. These practices are really not current, and people are obliged to do with the existing service, no matter its poor quality.

4.5.6- Household managers (housewives)

In households, transportation for a more than 5 km distance involves the following activities: visitation, health needs, school and market. For such distances, they use any of the transportation means, including walking. As said before, very few of them own any transportation mean. Very long distances (more than

150 km, out of the province) are scarcer in households than shorter and middle ones. Long ones are often during free school periods, and shorter ones are made along the year. But during the school year, there are some children who weekly or monthly come back to the house to collect food. In general, going to market and visitations are the most frequent reasons for household travels. Despite the fact that men are generally the one mainly involved in money management in households, they say that transport expenditure may represent 10 to 50% of their monthly income. This percentage is low in free school periods, and high in the other period of the year. During free school periods, households' income increases more than the other period of the year, and the transportation needs also. In the other periods of the year, income decreases and transport needs also. But by considering ratios, there is a great difference between the two periods because of the comparative income level between them.

4.5.7- Transport for socio-cultural reasons

Socio-cultural reasons concern the following events: wedding, visits, burial ceremonies, funerals, religious and traditional ceremonies. Week ends are the most favourable periods for them to be carried out. During such occasions, people come from the rural area, the sub-urban and urban areas. These events are sources of great changes in traffic (**Box 4**).

Box 4: Transport as a linkage mean between urban people and their culture

One characteristic of Southern Cameroon (shared with some African countries as Gabon and parts of Nigeria) is the very strong ties that exist between villages and their Diaspora in living in towns and cities. Rich people living in the towns may build luxury palaces in their remote traditional villages. Major ceremonies, including funerals and weddings are held in villages at weekends so that people living in towns can attend. This is reflected in the traffic counts, with major increases in traffic at weekends even in quite remote areas (several hundred kilometres and more than six hours drive from a city). Town people wishing to visit their traditional village at weekends may travel in their own cars or may hire 4x4 vehicles. These weekend cars represent a valuable marketing opportunity for remote villages as visitors buy plantains, tubers, bush meat and other produce. Some women reported their main market was the roadside stall (unattended until a vehicle stops) even though traffic levels may be well below ten vehicles a day, even at weekend peaks.

4.5.8- Excluded people - old, handicapped, socially marginalised

People that can be considered as socially marginalized here are the following: albinos, handicapped, old people, and to some extent pygmies. Albinos and old people are not really discriminated, they are considered as any other valid people, hence without any incentives or favour for transport.

However, handicapped people benefit sometimes some favours when using the transport services. This mainly concerns those who use tricycles, with problems on their two legs. This is made by transporting freely their tricycles.

Another specific group, who cannot really be considered as excluded ones since they exclude them selves by avoiding contacts with external people, concern Pygmies people. However, more and more of them are coming out of their environment, as a result of actions carried out by NGOs and other agents of the civil society. But they are not yet fully involved in rural transport system, since they still remain out of it.

4.5.9- Pedestrians

Pedestrians are counted among all the above people. It is very normal to meet people walking on road, coming from or going to a very far place (up to 25 km). The main reason evoked is the of lack money.

People start walking very early, to cover the walking distance. The objects of these journeys are socio-cultural, school and market.

4.6- Rural transport services technologies and costs

Different kinds of transportation modes are found in the surveyed area, from lorries (small, medium and big sizes) to motorbikes. This diversity can be explained by the wide variety of services to be provided with those means of transportation. Their frequency and their presence obey to several seasonality factors already discussed above.

4.6.1- Lorries of various sizes

Lorries with more than three tons capacity are relatively present during the year in all the rural areas. In general, all of them have more than 6 tires, and an allowed capacity of more than seven tons, with trailers, articulated trailers or none of them. They either belong to private owners, or Agro Industrial firms (Hevecam, Socapalm, etc.) and Sawmill companies. Only those belonging to Agro Industrial firms are found on the spokes leading to their factories (in the Ocean Division), transporting product to be transformed, all year round. According to farmers, private lorries are mostly found during cocoa seasons (September to December), and they come from Douala, Yaoundé or other towns to carry cocoa beans bags from villages to the Douala port. As said early, these lorries constitute very serious 'destroying' agents for rural roads, especially the private ones that serve the region during the four months cocoa season. They generally don't care about the state of roads by not stopping at rain barriers when it is raining, and the non observance of some prevention issues to preserve the roads state. Their main objective is to make the maximum profit by multiplying the number of trips.

Lorries between three and seven tons are involved in food crops transportation, mainly tubers and roots (plantains, bananas, cocoyams). Plantain is the most transported food crop, and it is transported to the international markets. Lorries involved are private ones, stationed at either Ebolowa or Amban towns. They are let to rent. Generally, three to two days before market days, women traders rent them to carry plantains and bananas in remote but productive villages (Ma'an, Nyabesan, etc.).
According to one *Dyna* lorry driver we met, the plantain transportation activity follows a weekly seasonality, based on market days calendar. Owners are contacted by women traders after being appointed many days before. Trips can be made twice a day, and four times a week to the markets (Aban Minko'o). Transportation prices vary from one collecting point to another, and are fixed on a trip basis as follows:

- Ma'an (175 km distance to cover): 50000 FCFA (USD 100)
- Nyabessan (225 km distance to cover): 80000 FCFA (USD 160).

Charges per trip concern the following: police control (9000 FCFA – USD 18), diesel: 30000 FCFA – USD 60. The daily capacity loaded per trip is around 300 to 450 plantain bunches (equivalence of four to seven tons). Based on his declarations, lots of modifications are made on these lorries for them to perform well (see paragraph **4.6.2-**). These modifications are made to adapt the lorry to a higher loading capacity (one to three tons more) and the bad quality of roads.

4.6.2- Highly modified vehicles for specific needs

Land transportation services in the survey region are facing lots of challenges, mostly from the operators. The most used modes of transportation are small cars, with admissible loading capacity of not more than 1500 kg, and five seats. However, there is very little adequacy between road conditions and transportation loading needs. Freights to be transported are generally made of fresh crops, containing high amount of water, hence increasing considerably their weight. On the other hand, roads are not in good conditions to render adequate services.

To face the challenge of moving heavy weight freight on poor condition roads, operators make lots of modifications on their vehicles. These modifications are made on all types of vehicles (lorries, cars, buses, motorbikes, etc.) and concern mainly the modification and/or replacement of the engine, and the

reinforcement of suspensions. Specific adaptations concern mainly four-wheel vehicles. For all of them, the suspension system is highly modified in other to reinforce them. Springs may either be partly or totally replaced by leaves in four-wheel vehicles, or just doubled for motorbikes. Others modifications concern the sheet metal reparation and consist of straightening out, closing holes, changing the colour.

Those vehicles are second hand ones. In most cases, they have been used for personal purposes and, once inappropriate for that purpose, they are simply introduced in transport services to serve rural areas. So, modifications on vehicles can be made at the beginning of transportation service (to adapt them to the road and loading constraints), or when they are already in use (for periodic or seasonal reparations). These periodic reparations are generally made before the rainy season.

When a vehicle is being imported (second hand from Europe), operators usually make sure that they will have an appropriate one. For example concerning mini buses (*Toyota Hiace*), some owners said that they use to choose those ones that have been design to carried loads, because they have very strong suspension systems. And they are adapted to the local conditions, once they arrive in Cameroon to be introduced in rural areas for transportation purposes.

Motor bikes and bicycles are also highly modified in different ways, according to the purpose they are to serve (**Box 3**).

4.6.3- Profitable motorcycle taxis

Motorcycle taxis are increasing rapidly in Cameroon generally and in the Southern province in particular (according to the authorities of motorbikes taxis syndicate in Ebolowa, the number of motorbikes has increased from 200 to more than 1000 units in four years. New motorcycles (125-175 cc) imported from China, with numerous gadgets and accessories (including remote locking) can be bought in Cameroon from 300000 to 450000 FCFA (600 to 900 dollars). In the surveyed area, the most owned are the 175cc that cost 400 000 to 450 000 FCFA (USD 800 to 900). Owners leasing them to drivers for eight USD a day in towns, and 16 dollars a day in rural areas, can recover their capital in 50 to 100 paid days.

Motorcycle taxis can generally be amortised in a few months, depending on the level and the quality of maintenance of it. It has been told us that by a repairer that, even when amortised, motorbikes can be sold at half its initial price 200000 FCFA (USD 400). This is a very interesting buying/selling network for people with lower income that cannot afford new ones. Generally, they buy these second hand motorbikes and struggle for a new one after some months; and this is possible when the owner is the one driving the engine.

With competition in the urban areas high (five motorcycles at every corner), rural motor taxis are increasingly attractive.

Motorcycles generally last only six months, and in that time they have earned their owner and operator significant income. Fares in rural areas are often 2000 FCFA (USD 4) a journey (an average of 15 to 20 km), so it is easy for drivers to reach 16 dollars a day for the owner and also gain significant income for themselves. They generally operate relatively short distances, often complementing bush taxis by taking passengers to and from small rural transport hubs at road junctions.

4.6.4- Overpriced bicycles

Bicycles are extremely rare and expensive in Southern province Cameroon, at about 90000 – 100000 FCFA (about 200 dollars). One quarter of the price of a new motorcycle, and half the price of a second hand one. Civil servants in offices said that rural people do not want bicycles and that they are from ‘prehistory’. In the forest zones, bicycles can only really be used on the road network (while in the Savannah zones they can be used on small paths that run in all directions from the villages). However, bicycles are owned in almost all villages and in all villages contacted people stressed the potential value to them of bicycles (such views were often expressed spontaneously, and not as a result of leading

questions). Bicycles are not available for purchase in the rural areas and even in towns there are very few suppliers and very high prices.

People in the villages are willing to buy bicycles if they were available (particularly after the cocoa harvest). The idea of USD 60-100 for a bicycle seemed cheap to them (although such prices are still expensive by world standards). The existing bicycles are mainly used for journeys of 5 to 30 km between villages and towns, between villages and for access to local schools and medical facilities. They are mainly used by men, but women said they could use them, and school children would like to use them.

Box 5: Utilization of Bicycles: an example of hiring to met villagers' basic needs

In the Southern province rural area, bicycles have a place of choice and an important role in the satisfaction of households' needs. An example of the place and the role of bicycles in rural areas is given in *Evelessi* village situated at 30 km from *Mengong* (a Market town) and 70 km from *Ebolowa*, on the untarred road going to *Sangmelima*.

In that village, a number of three bicycles have been donated by a foreign NGO working on gender issues to the existing female Common Initiative Group (CIG). The use of these bicycles has been planned in a renting manner. They are at the disposal of villagers at a renting price of 200 FCFA (40 cents) per trip, no matter the duration it takes. The executive bureau of the CIG is the one in charge of the management of the bicycle fleet. At the time we passed there, bicycles were said to be out of use, because of mechanical and pneumatic breakdowns that occurred when in used. Villagers told us that they were not capable of repairing them.

Despite the lack of a very good managing system of these bicycles (we think that if they were well managed, money collected from renting operations should normally help repair them), villagers qualified the managing system (renting, and at an affordable price) as profitable for all (it makes bicycle available to needy people), and bicycle very useful to them. They used bicycles to fulfil lots of their needs concerning markets, hospital, school, visiting people and announcing news in the village and with many other neighbouring villages.

Box 6: Wooden bicycles: a useful means both for children and for small household errands

A particular characteristic of the Southern province rural transport system is the existence of wooden bicycles. These kinds of transportation mode are also found in the Western Province of Cameroon, the upper savannah region. They are bicycle-like, with all essential parts of a simple bicycle (wheels, bone, seat, luggage carrier, handlebars, etc.), but without any transmission system. They are made with local wood. Layers of rubber are added to the wooden circle wheel, in other to limit its deterioration in the one hand, and to reduce (to some extent) shock transmission from the ground when it is circulating. Safety issues are taken into consideration: a flexible stick, which is fixed on the wooden bicycle bone (at a closer distance to the wheels), is used as brake. When pushed down, it lies on the rubber part of the wheel, and by a friction, contributes in reducing the speed of the bicycle.

This kind of transportation mode is used both on flat and hilly surfaces, but mostly on hilly ones, since without any transmission system, the gravitational conditions allows it to move easily. On other surface (flat areas or when climbing a hill), it is simply pushed. The wooden bicycle is primarily a plaything for children, but very helpful for households. Villagers said that it contributes to the satisfaction of their transport needs by carrying people and freight from one village to another. Their loading capacity is varied: up to four people (mostly children) and 150 to 200 kg of freight.

Box 7: Transport cost of bribe barriers

Outside each town in the Southern Province of Cameroon is a series of control barriers (police, paramilitary, Ministry of Transport road safety, customs, forestry, etc.), and on main national roads there are also toll barrier charges (500 FCFA, that is one USD). In general private vehicles are not stopped, but all vehicles providing public transport are stopped. According to the regulation, tools are placed on tarred roads every 70km between localities. Despite that regulatory framework, there still exist some failures that affect the observance of these distances. Even if all papers are correct and the vehicle is immaculate, there will be some fault found, which will be very time consuming to deal with. Some transport owners reported they never give "tips" to pass, but the great majority of transporters simply pay a fixed price (usually 500 to 1000 FCFA, about one to two USD) to pass quickly.

A desperately overloaded vehicle with people sitting on the roof simply pays the 'Road Safety' officers two dollars to pass. With four different barriers, that makes eight USD to be paid for a trip. This is generally sufficient for both directions and for the whole day (but the one dollar road toll barriers has to be paid each time the vehicle passes, grumbled the drivers). By relating the cost of the 'bribe barriers' to fuel costs, we find that it varies greatly with the routes, but it represents up to about 50% to 200% the cost of fuel (based on a return trip), and so significantly adding to the overall cost of transport. For lot of operators, it is a very discouraging situation, since they feel helpless and they don't have any choice, apart from struggling to provide something to take care of their families.

One of the interesting observations is that with a once-a-day payment, a second trip should be more profitable. However several drivers reported they did not make a second trip due to lack of sufficient demand. The morning and the evening runs were popular and profitable (despite the barriers) but a second daytime run might not gain sufficient custom to make it worthwhile, the drivers reported. One driver of a six seats *Toyota Corolla* bush taxi said the income from the first four passengers in the car was for him and the car, and the next four passengers he crammed in were necessary to pay for these barriers. While making a clear point, this did not explain why he still crammed in eight people for the second trip of the day, once the barriers prices had been paid.

Finally, the user is the one on whom all these charges rely on, since he pays for a price that does not fit with the quality of the service.

4.6.5- Summary table of operator costs

Based on the following calculations (**Table 14**) distances, passengers and freight operated are increasing from lighter to heavier vehicles. These differences may be due to the fact that powerful vehicles travel a lot covering large areas (from divisions or provinces to others). Trucks of more than three tons capacity are the must financially profitable mode of transportation in the surveyed area. In general, there is very little 'theoretical' profit from transport activity if it is financially managed following art rules. Based on interviews and observations carried out, operators (for rural taxis) said that they make very small profit from they activity. But that financial profit is mainly obtained from depreciation costs, since these ones are not spent, but are 'residuals' that remain generally as savings. Rural taxis have the lowest depreciation cost, since very old vehicles are fund in the area. Fixed (excepted for buses) and functional costs vary increasingly from greater to smaller vehicles.

Table 14: Overview of operating costs of existing transportation modes in the surveyed area

Modes	Distance / yr (km)	Passengers or tons freight carried / yr	Initial costs (USD)	Vehicle Life Expectancy (yrs)	Depreciation Cost (USD)	Fixed Annual Costs (USD)	Variable Costs / yr (USD)	Total Costs /yr (USD)	Cost / km (USD)	Tariff / pass. or tons freight / km (USD)	Typical load (pass. or tons)	Income / km (USD)	Estimated profit per km (USD)	Estimate annual profit (USD)
Trucks > 3 tons	325000	200	20000	10	**2 000**	2810	60192	**65 002**	**0,20**	0,07	6	0,42	**0,22**	71498
Trucks < 3 tons	147267	67	8000	12	**667**	1027	37898	**39 592**	**0,27**	0,10	4	0,40	**0,13**	19315
Buses (>20 seats)	112320	23712	10000	10	**1 000**	3357	24354	**28 711**	**0,26**	0,03	25	0,75	**0,49**	55529
Rural taxis (pick up, minibus, cars)	15600	3120	2000	15	**133**	869	6156	**7 158**	**0,46**	0,06	10	0,60	**0,14**	2202
Motorcycles	13500	7500	700	2	**350**	277	3850	**4 477**	**0,33**	0,20	2	0,40	**0,07**	923
Bicycles	3350	1	140	2	**70**	0	68	**138**	**0,04**					

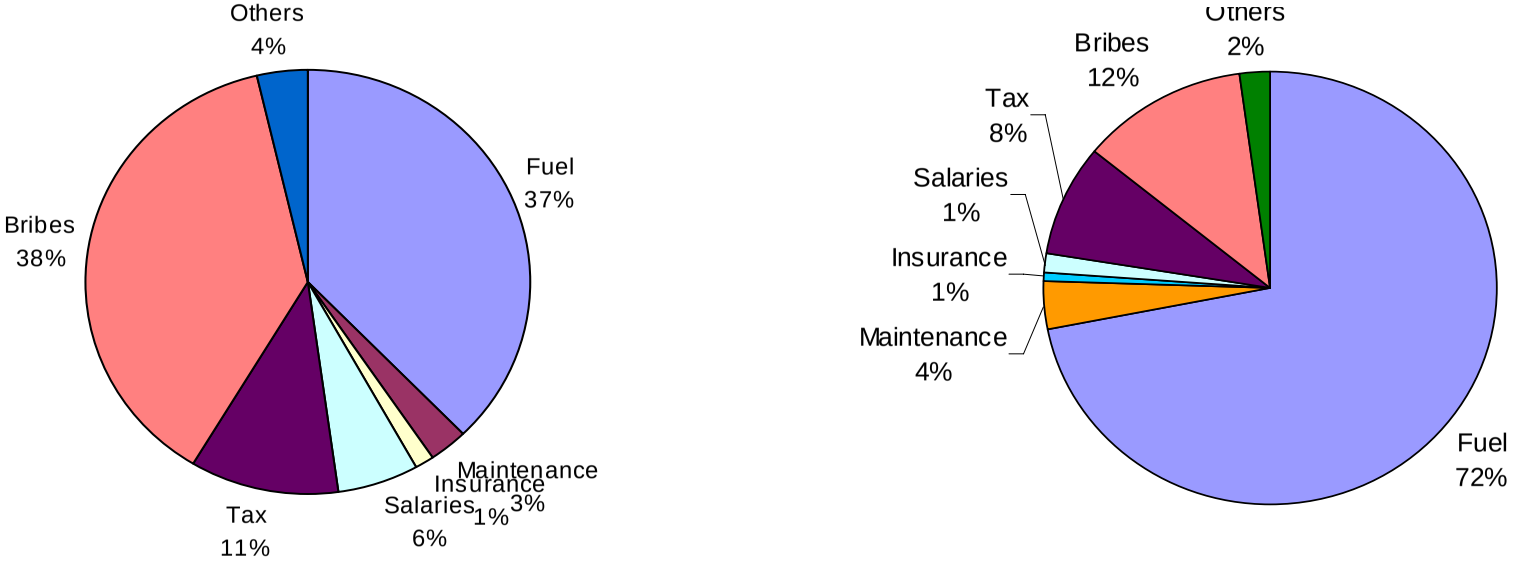
Tariffs are obtained form interviews with operators. They are averages of practiced prices of a total of three informants.

Tariff/passenger are calculated based on the average of practiced prices for rural taxis (USD 0,06). The one of buses is assumed as the half of the one of rural taxis (USD 0.03), and the one of motorbikes is three times (on rural spokes) the one of rural taxis (USD 0,2).

Freight/km is calculated on the basis of < 3 tons trucks transporting plantains over a 354km trip, transporting 4500kg, at a USD 160 price. Annual expenditures of vehicles are broken down into the same structure (

Figure 6). Fuel is the most important line where money is spent, followed by bribes and taxes. The other expenditures are either maintenance costs or salaries, depending on the type of vehicle. The total annual operating costs are about USD 16,000 for the bus and USD 4000 for the motorcycle. This is an average of a total of three informants met for each transportation mode.

Figure 6: Breakdown of annual expenditure by bus and motorbike operator respectively in the surveyed area



Buses are mostly object of check point disturbances from police, gendarmes and, transport and council agents. This is mainly a result of the idea that buses generate more money than motorbikes. Salaries and insurance are the least expenditures for the activity. Based on the salary percentage, we can argue that in general, drivers are relatively well paid.

4.7- Support services for rural transport services

The support services in the surveyed area mainly involve concessionaires, repairers, financing structures. The other aspects like training, framing, and research are much diffused in the previous ones, if not relatively inexistent. All of these support services are neither represented in each mode of transport found in the area, nor found in all localities. Most of them are represented in regional towns, and to a lesser extent in market towns. This is mainly because of the critical mass needed to perform very well the supporting purpose.

4.7.1- Overview of the supply system(s) and key issues

Suppliers are involved mainly in motorbikes. Bicycles were sold in the regional town but since a few years, they are no more found (lack of demand due to the high prices), and when people need some, the supplying store command them from Douala according to the needed quantity. Buses and cars are bought in Douala, the economic capital where there are lots of agents of sales outlets. These fleets are mainly constituted of second hand cars sold at a price depending on the types of the vehicle and other characteristics (first running year, mileage, the vehicle appearance, etc.). Generally prices range from 1 000 000 FCFA (USD 2000), without administrative fees (custom, taxes and insurance).

There is a competition within the supplying system of motorbikes in the surveyed area (in total, there are four agents of sales outlets found in the regional town, and at least two in market towns). Different types of motorbikes (from 125 to 175 cc) were introduced at the beginning, but finally only two of them were adopted by users. They are 175 cc motorcycles imported from China, with numerous gadgets and accessories (including remote locking) and sold from 400000 to 450000 FCFA (USD 800 to 900). These ones are said to be strong, powerful and then adapted to the terrain (hilly), and the bad quality of roads (in rural areas). Suppliers are not willing to offer other kind of products. They also sell spare parts of motorbikes they supply, and one of them sales motor cars.

Suppliers are representatives of firms based in Douala (economic capital) or Yaoundé (political capital). They stay very close to the headquarters in terms of general policy, price policy, supply, adversity. But each of them has his own local business management, independently from the main unit. According to those suppliers, the demand is growing but is not at a satisfactory level and constitutes the limiting factor to supply.

They could not say anything about credits and financing of the supplying/selling activities, and we had to refer to their headquarters. Based on the declarations of one of them, there is a lot of taxes (customs, VAT, etc.) representing around 50% of the selling price of a motorbike. This represents a very high price comparing to the one practiced in other countries. One of them complained about unfair practices that exists among the different stakeholders of the supplying system, and which consists of preferential treatments by customs officers who tend to favour some suppliers than others.

Their customers are generally less young people who are traders or public servants. The young customers they deal with are generally rural people farming cocoa who decide to own a motorbike after selling his products. There is seasonality in the activity, mainly influenced by the cocoa commercialization period, and this period corresponds to the peak of sales. According to the motorbike suppliers, the quantity sold per month ranges between 5 and 10 unities at normal season, but this amount can sometime go up to 20/month during cocoa commercialization period (from September to December). Women do also own their own motorbikes, but generally they are not the one riding them; they hire them out, for taxis. Seeing a woman riding a motorbike is very scarce in the region. Nevertheless, there are about three women in Ebolowa city who ride their own motorbike.

The strategies adopted by suppliers are diverse, and concern the following:

- Price reduction;
- Payment in many instalments;

- Help in establishing the administrative papers to the new owner of a motorbike, by being in contact with transport authorities and bringing them the buying receipt;
- Commissions fees to those (former customer, repairers, friends, etc.) who bring them new customers;

Unfortunately, some of these suppliers go beyond what they are supposed to do, over using the relation they have with transport authorities. A district authority of transport told us that, during a control session, while he was asked to show the administrative papers of his motorbike, one driver gave them a receipt to prove that he had already paid for the amount needed to establish all his papers. That receipt was delivered by a motorbike supplier who insured the owner that he would elaborate those papers.

4.7.2- Overview of the maintenance/parts system(s) and key issues

Repairers of cars and motorbikes are found in regional district and market towns. Bicycle repairers are found in both the previous localities and also at village levels. They are generally young settlers who have not been trained in formal schools. Car and bus repairers are usually located near the bus stations; this is a strategic aspect of their activities. These garages play very often a training role for those who need to learn mechanic. Formal schools (technical secondary schools, training centres) exist but they are not the preferred training centres for most of them. Mechanic reparation is sometimes a heritage from relatives or a personal initiative.

These mechanic garages also insure the supply of spare parts, mainly for motorbikes. They are the places where sellers and buyers of motorbikes meet together, with the arrangement of the repairer. Second hand vehicles and motorbikes are mainly concerned with these sales. Based on what they said, the number of motorbikes they repair varies widely up to 20/day. The ones concerned by the repairs are mainly the motorbikes taxis for motorbikes repairers and rural operators for car repairers (this is found in district towns and in mechanics garages near bus stations in regional towns). This number varies largely from day to day. This seasonality is also evident in the dry season when the weather is warmer, this favours punctures. But generally, and this is mainly true in Ambam division, motorbikes are in good state and the reparation activities concern punctures. For car repairers, the number of vehicle repaired is smaller (up to five), and this number increases in rainy season when roads are in very bad state. At these periods, the repairing works on vehicles deal mainly with the reinforcement of suspensions and mechanical arrangements. In dry season, the main problem found is puncture.

The repairing activity relies widely on demand. Competition among repairers exists, but since a lot of them have faithful customers, this does not really affect the activity. Another factor affecting activity is the tribal factor: motorbike drivers and repairers are mainly settlers, so drivers from a certain tribe tend to go to the repairer belonging to their tribe in case of any problem with his motorbike. Some strategies has been developed by some of them; and these concern the following:

- Sale of spare parts;
- Reduction of reparation fees for faithful customers;
- Give credit to customers or repairing for free;

Problems they face with are:

- Non payment of services they provide to some customers;
- Taxe services and local council ask them to pay different taxes since they repair and sell spare parts;

They generally don’t have any development perspective and said that the better the roads, the lesser the availability of work. In Ambam Division for example, one repairer said that the number of motorbikes to be repaired has reduced, due to the new tarred road.

4.7.3- Overview of the financing system and key issues

Rural transport does not really benefit a lot from the financing structures that are present in the Province. Only one of them deals with rural transport by facilitating the process of ownership of motorbikes. To benefit from this opportunity, people have to have an account in the saving and credit structure. The applicant account should be provided at least with third of the price of the motorbike. This system does not have a very good response from the people, since the final cost (interest and administrative fees) of the motorbike is up to 600000 FCFA (USD 1200). But it has the advantage of payments in many instalments.

4.8- Perspectives of local informant of specific issues in the locality

Local informants say to have very limited capabilities to change the actual situation. Improving the road conditions is the major concern of all stakeholders in the survey region. The following is said to be the basic cause and source of change for the transport conditions in the area: high price, safety issues and vehicle scarcity.

4.8.1- District Authorities

4.8.1.1. Transport authorities

According to the transport authorities, the transport services are not socially well valorised, in the sense that operators do not receive admiration form people, hence the transportation service is not required a lot. It is mainly considered as a second job, reserved for those who don't have 'qualified' job. People start driving or acting in transport service when they have not found 'better' job to do. Wearing uniforms may be a determinant factor to reach this social value goal. This happened with other jobs formerly considered as less or non valuable (night watchman). Previously, this job involved mainly old people. But when these ones had the opportunity to wear uniforms, young people started being interested and involved in it. So the naming of the job has changed, from night watchman to vigil, valorising more the job. Another aim of that uniform is that is allows a very rapid identification of the operator among others. By given the opportunity to operators to wear uniforms is, the transport service can be more valorise socially.

Information through the radio and other communication means is another perspective evoked by transport authorities. This concerns mainly the following issues: safety and licensing. They said to be willing to do more what is actually done to reach transport stakeholders in order to make them aware of their rights and duties.

Our survey region is a politically sensitive area where exists lots of elites who are also owners of a good number of vehicles used in transport services. Lots of them abuse of their political powers by not conforming their vehicles to the licensing and other exigencies in relation to transport services. This situation generates a conflict situation between transport authorities and these specific kinds of owners. It is common to find an operating vehicle owned by one of them, without any license. During control operations, when these vehicles are arrested because of a lack of any administrative document, the owner uses its political influence to restore it. This situation leads also to contempt of drivers towards transport authorities.

The pricing process of transportation involves the trade ministry agents, and transport authorities say they do not take part in this process. Since they are of the technical institutions dealing with transport and ensure its control, the implication of transport authorities in pricing would be of great help. This is also true for control calendar establishment. The district transport authorities are said not to be involved in the programming of the dates and the places where safety control should be carried out. They are just called to follow and observed a schedule programmed by the Senior Divisional Officer, and this is not without any other influences or pressures. Controllers are not sufficiently motivated when sent to the field. According to transport authorities, this lack of or insufficient motivations expose them to corruption and is generally the source of briberies they are involved in on the roads. On the other hand, since safety control operations tend to reduce overloading (hence the number of transported people on some spokes lacking vehicles), the presence of controllers on a spoke tends to limit the traffic on that spoke. For the duration of the control,

operators prefer not to pass that way, keeping lots of people from being transported. It is then very usual that these controllers are driven out by villagers, since their area is no more served.

4.8.1.2. The Public works authorities

Roads infrastructures construction and maintenance is financed based on the Road funds. Normally, roads maintenance works should be done during specific periods of the year where it is not raining. However, according to the Public Works authorities, it is very usual that money to finance these maintenance works is not available at times. This lateness results in works carried out at non indicated times, then affecting the quality of works to be done. Sometimes, this lack of time respect in finance availability may also be considered as a limiting factor that encourages roads damage, since roads are not rehabilitated at times. And concerning rural people involvement in roads maintenance, sociological aspects should also be considered. This should be oriented towards finding out sociological factors involved in road maintenance as contributions to consolidate or orientate rural people participation in the road maintenance process.

The regulation framework encourages local initiatives actions in the rural transport services. However, local authorities are not really involved as they were supposed to be. This should be more encouraged through more pragmatic incentives. One way is to allow rural localities be involved in rural transport services by acquiring and managing vehicles to serve their area. This may be evident since it is an initiative that should involve all the local elites, and implemented according to the realities of the milieu.

4.8.2- Health Managers

The transportation service for health is in poor conditions. In the Ebolowa health district for example, one health centre serves around 10 to 30 villages. The perspective in view is to increase the access of rural people to health services, and more health centres have been and will be created. Several health districts are receiving more and more vehicles, to meet their transportation needs. But lots of efforts are still to be done, to meet with the challenges. Nothing can be done at the local level, since decisions come from the upper level.

4.8.3- Education - Head teachers

According to education authorities, very few pupils use bicycles to come to school. A reason for this is not related to the fact that riding a bicycle can lead to social discrimination, but simply the fact that bicycles are getting more and more expensive. The presence of bicycle in schools is getting scarcer. Even among teachers, owning a vehicle is a sign of social well being. More than 50% of pupils leave at a more than five kilometres distance form their school (for secondary schools). This remoteness from school has negative effects on their results, and it is urgent to do something about that. There is no existing loads consolidation system for pupil transportation. The only sustainable way to improve mobility in that environment is to increase access to transportation mode by reducing their prices. And concerning the internal transportation system, no perspective is in view since they just implement the decisions taken by the hierarchy.

4.8.4- Transport Associations

Intimidations, pressures and all other forms of influences from political elites are greatly affecting the transport services in the survey region. One solution to limit its effects is, according to transport associations leaders, by sensitizations. Promotion actions will enable the operators know about: their rights and duties related with the transport operations, the advantages of syndication (harmony and solidarity). Apart from these previous influences, police men are of a great pressure on the operators, through control operations. They hope that, by being informed about their rights and duties, they will be well armed to face these kinds of pressure that affect their job. Other items that should be mentioned concern the following issues: safety, licensing, technical and financial aspects of the activities. Four-wheel vehicles transport associations leaders said to receive more pressures from policemen than motorbikes

operators do receive. These sensitization sessions will also work towards reducing these kinds of faults. For it to happen, they have to meet administrative authorities, and discuss with them about these issues.

Four-wheel vehicles operators evoked also the existence of a high competition in performing the services. The first level of competition occurs among four-wheel vehicles. On one hand, it concerns private cars that occasionally carry people on spokes they serve. This contributes to limit their takings in a none less important manner, since it happens during high demand period of the day (in the morning and after noon for some spokes). On the other hand, that competition involves those operators who do not own the vehicle they drive. They usually tend to reduce their transportation prices to the detriment of the rest of operators. The second level of competition factor concerns the presence of motorbikes that serve the same spokes. They present the major advantages discussed further among which, the reduction of time losses since their loading capacity is reduced to two persons, hence very rapid. To overcome this, operators say to develop customer loyalty.

5- Analysis and conclusion

5.1- Key issues

5.1.1- The transport situation and trends

Rural transport services in the survey region are generally viewed by operators and some transport authorities as a social service than an economic (profit making) one. Apart from the regional spokes and to some extent the district ones, operators are mostly sons of the area that they serve. They may be either a former government officer or a young villager with basic education, who want to help the rural people by serving them with an existing car. The vehicles they operate with are personal ones, converted to public transport. They had been used for a long time for personal purposes in towns and, when they become almost unusable for that purpose, they just put them on rural roads; fortunately, they are very useful and of great role in those areas. Other kinds of vehicles are those that are not really for public transport. These are vehicles that are driven by a cousin or a nephew of the owner, just to help that one since he has no job. in this way, transport service plays a great role in consolidating relationship among people in rural areas. But unfortunately, these drivers represent real ‘dangers’ on the rural roads, since they do not usually conform to the regulatory framework in all its aspects. Apart from these statements, another fact justifying that rural transport is mostly a social activity is the fact that drivers usually carry people free of charge when these ones do not have money to pay. This may be a debt, but in most cases, they deal with this practice as a strategy to develop loyalty from customers.

The most changes occurred in rural transport are the following:

i) Buses have reduced serving rural areas because of the bad road condition in rural areas spokes that are getting more and more poor and;

As mentioned before, rural roads in the Southern part of Cameroon are subject to abandonment, negligence and other tares. Road maintenance funds (**Table 12**) represent a great amount (more than 50% of the investment budget) compared to the annual budget of the country. The development firms installed in the area do no more play their role concerning roads maintenance; they are just concerned with the spokes of their exploitation system. Truck drivers do not usually respect the rain barriers. And the most harrowing fact is the vandalism and non patriotic role played by rural people on some spokes; and finally they are the one being punished. All these factors contribute to the roads degradation, and it is encouraging that some of the operators have developed strategies to overcome the road condition factor in the development of rural transport services.

ii) Motorbikes are more and more introduced to cover the rural spokes, mostly replacing buses retrieved out of the circulation.

Road conditions not allowing four-wheels cars to serve the rural areas, motorbikes have literally and greatly replaced cars, and in most areas they play a complementary and/or a competitive role. They are present in the most remote rural areas, serving people and their goods (not more than 50 kg) despite the bad roads conditions. In general, the rate of motorbikes in the surveyed area has considerably grown up since the passed years. In Ambam district town for example, motorbikes were introduced since around 10 months, just after the roads (town network and the spoke going to Ebolowa) have been tarred, and their number is now estimated of about 400. Users consider them to be necessary ill and very helpful since there are no taxi cars for public transport, and despite the safety aspects that are greatly neglected by operators. In the other towns (Sangmelima, Kribi and Ebolowa) motorbikes and taxi cars are together present and there exists, such as in the whole province, a competitive aspect between cars and motorbikes.

Another aspect that may be considered as a trend in rural transport is the new role played by the Public Work ministry in the maintenance works of road infrastructure. Since the latest reforms occurred on the transport framework, they no more play a technical role, but an administrative one, that consist of supervising the road maintenance Public Works process. As we saw previously, this new role does not fit with the local context of road maintenance in the following aspect: availability of funds for efficient works, implication and sociology of beneficiary people, respect of ethics during the process; even though it contribute to develop the private sector of the country.

5.1.2- Profitability and supply issues

Rural transport service in the surveyed area is more a social activity than an economic one. From the field surveys, operators said that their weekly incomes vary from 25 to 50000 FCFA (USD 50 to 100), depending on the types of vehicles managed. But, based on the operation costs calculations (**Table 14**), very little profits is obtained from this activity. We hence understand from this situation that, according to what many operators said, transportation is an activity that make lots of people busy. The advantages they get from that are social ones: i) the daily or weekly takings are useful in solving their personal problems and those of their relatives; ii) help people from their area to solve their transportation problems, iii) intermediate activity performed while seeking or waiting for another better job. Hence, there is no auto financing process involved in this activity, no economic viability.

Transport services are provided by non professional ones, who greatly lack expertise and insufficient knowledge about technical and financial management of transport service activities. In such conditions, operators cannot perform well the activity; and this is one reason why one of the operators we met said the following “I’m serving people with transport because I don’t have anything else to do, apart from that, and it is an activity which allows me to get out from my home, since I should do a job to overcome my needs and my family’s”.

Apart from lacking the knowledge of the regulatory framework (about their rights and duties), operators suffer from other great lacks that impact their activity in a negative way. There are lots of charges in performing the transport activity, which do not allow great profits from that activity. In the other hands, operators need to gather appropriate knowledge and tools that should allow them to make profit form their activity, even it is agreed that they performing in rural areas, where poverty is most accurate. Rural transport operators have very poor negotiation power, towards their customers. This is faced in any bus station: the fixed price of transportation is scarcely respected. For the same distance to cover, it is very common to see that different prices are proposed to the operator: a customer in a car may pay the half of the fixed price, whereas his neighbour pays for the 100% price. This is the same for the prices of freights. Another aspect may concern the fact very few passengers cover the whole spoke (to the terminal), reducing the transportation price hence the daily takings. In general, official transportation prices are not observed since people do not have relevant living standard to pay for these prices. And the strategy that is commonly developed is that operators overload vehicles to come across these financial issues.

Financial and technical issues are of a great importance to make profit from these kinds of transversal activities. But unfortunately, operators don’t generally have the skills of calculation, prevention,

programming and other useful tools for a good management f their activity. They perform the transportation activity as it is presented, without any real inventive or strategy to overcome daily difficulties. Rural transportation issues should be apprehended more as an economic factor than a social one, to capitalize more existing resources.

5.1.3- Affordability and demand

Rural people are those said to be living in very poor conditions. But it is very regrettable that pragmatically, nothing or very less is done to improve the living conditions of these people through the improvement of transport conditions. The transport services remain expensive in the area, comparing to the revenue of rural people. There are lot of charges that are supported by operators, all of them having an effect on the price offered, hence discriminating lot of people. The demand is highly seasonally oriented; and very specific demands exist in the area that is generally satisfied by existing means. The demand affects deeply the transport situation. For example, in cocoa beans campaign, lots of lorries circulate in the area for their transportation. During week ends, traffic is also highly modified, on different spokes because of socio-cultural reasons. There is not a real adequacy between the demand (in terms of freight to be transported) and the supply (in terms of types of existing mode of transport). During the year, in normal leaving conditions in the area, the transportation of people and freights is ensured by cars. For reasons that are not already known, we observed that pick-ups are very scarce and overloading is very usual, with existing modes of transport.

5.1.4- Regulation and associations

The existing regulatory framework concerns mainly transport services within and between towns. There is a lack of incentives for RTS in Cameroon. On the other hand, as it is in many other African countries, the regulatory framework usually comes after lots of initiatives have been carried out by the private sector. There are few preventive measures taken. It is agreed that without any existing regulation for rural transport which is established based on their socio-economic realities and others relevant criteria, it would be very difficult to work for a sustainable development of rural transport services. This should be considered as a catalyst for the development of those areas. However, there is no license required for transporting agricultural products, and this is to avoid any spoilage of transported goods.

Despite the presence of ministries in charge of transport issues, there exists a serious lack of coordination and harmonisation within the whole stakeholders involved in rural transport. In general, activities are carried out without any preliminary consultations among them. A result of this fact is that each administrative unit seams to have its own regulatory framework.

The civil society acting in transport in general and in rural transport in particular is weakly represented. Some activities carried out by NGOs have been identified in some villages, but they remain very isolated even though they have been very useful for rural people. The associative movement concerns mainly operators, and does not involve users or other stakeholders. That operator association movement obeys to a two-headed orientation. Whereas the Dja et Lobo Division is well organized and experienced with different kinds of transport associations, the rest of the province is limited to those compared to family ones.

The functioning of the Dja et Lobo division associations gives us a great lesson of the associative movement related with transport issues. They are enriching examples of collaboration within an association (grouping many different operators on the same loading point) and between them (complementarities between two neighbouring travel agencies in serving spokes: for example, the first travel agency carries people from regional to market town, and the second from market to villages). However, in a static transport market, dividing the passengers waiting for transport into three different queues (the council terminal and two different franchises) could increase waiting times for everyone (and long waiting time is a major problem of rural transport). Though, what appears to be happening is that when transport franchises start operating, the services are improved, prices are reduced and the market is

increased with more people travelling. This is what is gathered from both operators and passengers (including villages along some new routes where the transport franchises had recently started to operate, with better frequency and lower prices). Our rapid appraisal cannot provide all necessary information on what is a complex and evolving transport system, but it is a system that may have many lessons for other countries.

Motorbikes association exists only in Ebolowa. It plays a great role among the different stakeholders, and mainly within the Ebolowa urban council. In fact, they work as an interface between the local council and the motorbikes operators by collecting local fees that are required to perform the activity (trading dues tax, stationary fees and quay tickets).

5.1.5- Other key factors influencing

Many other factors influence the transport situation in the surveyed are. They are said to be the basic source of any dysfunction of the system, and are identified as incentives for the development of the rural transport services. They may be specific to the surveyed area or generalize to the whole country.

The first factor, which can be qualified as very fundamental since it involves the behaviour of rural people, concerns the necessity for them to become aware of their place and their role for a sustainable function of the transport system. In the surveyed area, rural people have generally been involved very negatively in the system, particularly concerning the road conditions. In other contexts, beneficiary population of any roads infrastructures are closely associated in all the different stages of their construction. They have usually been at the basis (formulating the demand) and the top (usage) of the function of social infrastructures. Their real involvement as beneficiaries and more, as manager of these investments has contributed to improve their usufruct. The sociology of the “rural transport new strategy” adopted by the government needs therefore to be considered deeply in the surveyed area, in terms of the implication (role and place) of local communities.

Another aspect of the implication of local communities concerns the necessity to work for the improvement of the transport system, this at any local level. It is certain that if, at any level, each local community works to improve transport conditions, it is the whole regional transport system that will be developed in a sustainable manner. This can be done by providing these areas with adequate means of transportation that will serve usefully the rural people at each level. This adequacy should be an arrangement between the characteristics of three aspects: people and goods to carry, and the roads conditions. The Local municipalities are the one responsible to empower such ideas, in collaboration with elites and other economic actors. During this survey, it has not been possible to estimate the financial value of perishable goods that are lost due to the lack or inappropriate transport services. But according to the authorities met, there are huge quantities of losses that can be restored if adequacy is given to the existent transport situation. A sustainable solution should come from the beneficiaries themselves, and local communities are presented to be the appropriate ones.

At a national level, the petrol price is applied for both rural and non rural areas. In Cameroon in general, and for transportation system, any increase in price of petrol leads to an irrational increase of the transportation prices. Even if the situation will be very hard to manage, there is no price fixation for fuel that is an incentive for the rural transportation. Usually, a little increase of fuel prices results to a raise of transport costs by 150 to 200%.

5.2- Cross cutting issues

5.2.1- Safety

Safety is an issue that is of very less concern in the surveyed area, based on what the informant said, and different field observations. The regulation framework defined a series of safety and security issues that should be taken into account by operators, but unfortunately these issues are not observed. From the feed back of most of the informants, safety issues are, after the expensiveness costs of transport in the region,

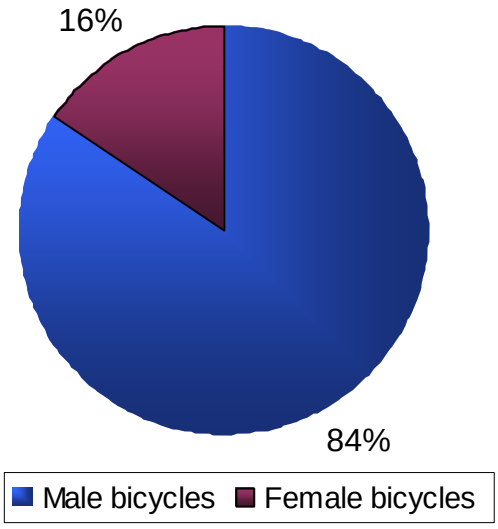
the second factor that characterizes the rural transport system. The following lacks are currently observed among the operators: driving license, spare wheel, medical box for the first emergency, insurance. Vehicles are overloaded, mixing people with freights, and it is very common to see people sitting on the top of a vehicle. Roads briberies justify and encourage this unsafe transport situation at a great extent, since according to operators, policemen do not care about the fact that a vehicle has all its papers or not; everyone has to pay for the required amount to pass. According to policemen, the rural transport is mainly a social activity than an economic one, since lot of people in their villages depend on that. They say to permit these unsafe conditions since, if not allowed, lot of people would not access others and won't be accessed.

Roads conditions are also the object of some unsafe practices. This is regularly observed in many places of roads where long grasses grow on dangerous corners, limiting the visibility of any driver.

5.2.2- Gender

In the Southern Province of Cameroon, women are generally responsible for growing and marketing food crops (mainly yams, cassava, other tubers and plantains) and men grow and market the cash crops (mainly cocoa and coffee) and may also hunt for "bush meat". The two types of agricultural products have very different marketing requirements. For coffee and cocoa, buyers with trucks come to the villages. Women in villages close to markets serve these markets, transporting the goods (food crops) by back-pannier, hand cart (close to market only), bush taxi or motorcycle taxi. Women in the more remote villages seldom walk long distances with such products (they are too heavy for the distances and the value).

Figure 7: Gender distribution in bicycle utilisation based on the traffic count (regional spoke)



However, there exists a positive discrimination when transporting people. Women and children are preferably seated within the vehicle till it gets full, and men occupy remaining places or they seat on the top of the vehicle when there is no more places inside of it.

5.2.3- Environment

Theoretically, improving road conditions results to an increase of the traffic, hence the bush meet traffic. Environment issues concern mainly the prohibition to contribute to the destruction of protected animal species. Since the surveyed area is in the humid forest zone, there are several species that are under a legal protection. It is strictly prohibited to kill these protected animals on the roads, or to carry them in vehicles even if they are already dead. Lots of controls are carried out by the ministry in charge of environmental issues, on different spokes.

5.2.4- HIV/Aids

As said before, transporters are among others, one of the most Aids infected people. This is because of many other reasons related with their mobility around the countryside: since transportation involves moving people from an area to another, it also facilitates the dissemination of Aids. Among them, it is preferably those who use to spend nights on roads who are mainly concerned, and in Cameroon, those ones deal highly with rural areas. Transport corridors are then very highly characterized by the presence of Aids. Lots of sensitization sessions are carried out by the National Aids Control Committee, and their representatives at different administrative levels. But rural areas do not really benefit from these massive sensitization sessions. The main targeted ones of these sessions are those travelling on regional spokes, while they are inside vehicles. Voluntary tests are also involved in these sessions. In various health districts and centres of the survey region, restrictions in favour of this issue are observed because of the lack of transportation means. Remote people in rural areas do not benefit a lot or benefit very little from activities carried out in the framework of the fight against Aids.

5.2.5- Marginalised people

In the surveyed area, for transportation issues, the main marginalised people appear to be handicapped and old persons. In this context, all those who were initially identified as marginalised ones do not really suffer from any marginalisation. Old persons do not benefit specific arrangements or measures that should differentiate them from other people. They are said to be considered as every other ones, except if it is a woman. All handicapped people do not benefit from special arrangements. Commonly, it is only those

who use tricycles that benefit sometimes from specific advantages from operators. This advantage consists of carrying his tricycle free of charge.

5.2.6- Rural transport indicator

In the Southern Province of Cameroon, the population is quite low and there is a reasonable network of interconnecting national, provincial, district and rural roads, and almost all the population lives in villages along these roads. However, there are still people living in very remote areas. According to health authorities, in the *Ambam* Division where there exist 19 health areas (69506 habitants), for example, three of them are not accessible during rainy seasons, and one is completely inaccessible all the time. In the *Ebolowa* Health District (156920 habitants), 2/5 of the area is inaccessible in all seasons, whereas one third of it is accessible. The remaining area is partly accessible, mainly in dry season. The small population of Pygmies generally live away from the roads.

Bush taxis serve almost all roads and on most there is at least one vehicle a day in each direction. The small villages do not have special 'bus stops' and bush taxis stop anywhere in a village where people are waiting if there is space in the vehicle (overloading is a perfected art, with 14 people in the cab of a double cab pickup). Thus almost all the rural population live within 50 m of a 'bus stop'. Thus by this indicator (among others) the quality of life in relation to transport would normally rank extremely high, by any international standards. Nevertheless, due to high transport pricing and low transport frequency, many people do travel at all in any particular month.

Means of transport are very scarce within rural households. Based on a rapid appraisal, less than 10% of households own a means of transport, for a more than 5 km distance coverage. Even the cheapest of these transport modes (bicycle) is very scarce. This scarcity is due to their high prices that are above rural peoples' revenue. Motorbikes have been said to be very representative in the rural areas, for transporting people and freights. Despite this 'omnipresence' in the rural areas, their number has not really increased the ownership rate for households, since they either come from surrounding market towns or they belong to young people in the villages.

It has not been easy to make a rapid estimation of how much households spend for transport purposes, in comparison to their income, since for this short period of time it has not been easy for people met to estimate their income. Expenditures for transport purposes in a household vary very seasonally, depending mostly on the school calendar. But it has been finally found that, according to different cases, households spend from 10 to 50% of their income for transport needs. In various situations, these travels (for diverse reason) are time consuming for them. They said to spend up to 12 hours in some case during a journey, and sometimes up to 17 hours in case of remote areas. This time does not include the time lost due to queuing.

5.3- General implications

5.3.1- Poverty, millennium development goals and rural transport services

As a transversal sector activity, transport appears as a very sensitive sector for a sustainable development of any economy. Rural areas, viewed in its productive function, are presented as very important ones that need to benefit special attentions. In fact the poverty reduction objective is a commitment shared by most Sub-Saharan African countries, including Cameroon. It is agreed that in poor conditions, rural people can neither easily afford transport services (because of their low revenue) nor improve them for better utilisations. This situation is presented as a vicious circle, and to come out of it is necessary that an external effort should be given to the whole system, as a catalyst for improvement.

The poverty alleviation is the first statement of the Millennium Development Goals, as presented by the United Nations deal with the following: i) Eradicate extreme poverty and hunger, ii) Achieve universal primary education, iii) Promote gender equality and empower women, iv) Reduce child mortality, v) Improve maternal health, vi) Combat HIV/AIDS, malaria and other diseases, vii) Ensure environmental

sustainability, viii) Develop a global partnership for development. The poverty reduction in rural areas can be achieved, apart from some other socio-economic aspects involved in this objective, by improving the rural people revenue. In a rural area as our survey region which has non negligible productive potentials, reducing poverty or increasing people revenue should be done by facilitating the carriage of farm products, and access to social services. This can only be done through improving the transport system to facilitate the movement of people and their goods. And the main concern here deals with roads conditions. In our survey region, the transport affordability does not only depend on the roads conditions, but on several other factors that contribute to increase the transportation charges, hence its prices.

Other aspects of the MDG deal with education, health and environment. These different issues have been discussed either. And it results from these analyses that transport plays a great role in accessing social services as education and health. In the rural Southern Province of Cameroon, education and health cannot be improved if the system functions the way it is now, with several dysfunctions. However, as we previously demonstrate, solutions form these dysfunctions may not absolutely come from the improvement of transport services; others non tangible key issues are important to cover.

5.3.2- Ways to improve rural transport services and priorities according to the different stakeholders

All the stakeholders agreed that roads conditions are the main problem of the transport service in the surveyed area. The prices were also cited as a problem, but this issue can be considered as a consequence of many other factors involving roads conditions. According to them, the first way to improve rural transport services is the rehabilitation of the road network. However, other ways to improve rural transport services exist, and may concern the following, according to different categories of stakeholders:

Users:

- Sensitization towards rural people about their role and place for a sustainable roads conditions;

Operators:

- Sensitization for a better understanding of their rights and duties, the importance for them to gather together to defend these rights and act as one body;
- Sensitization towards the respect of the licensing and safety issues;
- Improve their capacity building in the management of their activities. This can be done by equipping them with necessary tools for a profitable and sustainable way to carry their activities (financial and technical management);
- Limitation of pressures (police controls and other forms of control, political and economic elites);
- Competition management between motorbikes and four-wheel vehicles. An improvement of roads conditions may result to a considerable reduction of motorbikes from rural roads. And many scenarios may be envisaged, leading to various impacts on the rural transport system. These issues are also important to anticipated;
- Adapt the transportation means to the transportation needs of people and freights;

Other ways to improve rural transport service concern incentives dealing with: fuel, taxes and toll barriers, increase the working means of government officers.

6- Appendices

6.1- Required conditions for starting any transport activity according to the regulation framework

1) Permit. It exists in different categories, depending on the type of vehicles: 2nd category (for eight seats vehicles working within a 40 km spoke around a town, 7500 FCFA); 4th category (vehicles transporting freights other than agricultural products); 5th category (transport services under international agreements, 15000 FCFA); 6th category (mixed transportation of people and freights between three Divisions with arranged lorries); Special permit (for motorbikes taxi, 2000 FCFA).
2) Grey card. This is delivered by the transport services as the birth certificate of the vehicle
3) Technical visit certification (3000 FCFA)
4) Bleu card. It is obtained using the insurance subscription (15000 FCFA for all vehicles and 4000 FCFA for motorbikes taxis)
5) Trading dues tax (for urban taxis, motorbikes taxis working beyond a 40 km spoke), and the tax in full charge for any other kind of vehicles working within that spoke. Trading due is paid to the local council offices.
6) The road tax disc.

Insurance is paid following different ranges of prices, according to the type of the vehicle. The payment of this insurance is accompanied with the pink card. Motorbikes pay an amount comprised between a range of 17 to 20000 FCFA (USD 43 to 40) for their insurance.

Apart from the above, local council fees paid by motorbikes are the following:

1- The quay ticket: 100 FCFA (20 cents)/motorbike/day;
2- Stationery fees: 2000 FCFA (USD 4)/motorbike/trimester;

6.2- Comparison of some prices (official and practiced) practiced by rural taxis and some buses

Table 15: Official and practiced transport fares of various destinations in the area of study

Departure point	Arrival	Distance (km)	Official prices (FCFA)	Practiced prices (FCFA)	Practiced prices/km (USD)
Ambam	Aban – Minko'o	27	378	1000	0,07
	Kye Ossi	30	420	1000	0,07
	Meyo Centre	42	488	500	0,02
	Ma'an	57	798	1500 – 2500	0,07
	Olamze	45	630	2000	0,09
	Ebolowa	90	1 260	1000	0,02
	Meyo Biboulou	20			
Ebolowa	Mvangan	99		3000	0,06
	Ma'an	121		2500	0,04
	Meyos	100		3000	0,06
	Akom II	171		2000	0,02
	Kribi	257		3500	0,03
	Ndengue	15		500	0,07
	Meyo Centre	49		1000	0,04
	Nyabessan	157		3500	0,04
	Ebolowa Metomo			1500	
	Biwong Bane	30		1000	
	Ngoazip			1000	
	Lolodorf			2000	
	Nkouékouk	60		2000	

Table 16: Fixed and variable costs of motorbikes, buses and trucks less than three tons

	Fixed costs		Variable costs	
	Designations	**Costs**	**Designations**	**Costs**
Motorbikes	Registration certificate	40	Fuel	2920
	License	60	Oil	208
	Insurance	40	Wheels	300
	Council	73	Punctures	104
	Parking fees	16	Others	320
	Trading dues	40		
	Pink card	4		
	Blue card	4		
	Sub-total	**277**	**Sub-total**	**3852**
	Total			**4129**
Buses	Registration certificate	100	Wheels	432
	License	100	Punctures	36
	Parking fees	7	Oil	384
	Insurance	258	Fuel	3120
	Technical attestation	10	Check point	2184
	Blue card	32		
	Trading dues	100		
	Vignette	30		
	Others	312		
	Sub-total	949	Sub-total	6156
	Total			**7105**
Trucks < 3 tons	Registration certificate	200	Fuel	26960
	Blue card	150	Check points	7488
	License	130	Wheels	480
	Parking fees	7	Oil	810
	Insurance	300	Others	4160
	Technical attestation	10		
	Blue card	30		
	Full charge tax	300		
	Vignette	200		
	Sub-total	1327	Sub-total	39898
	Total			**41225**

Table 17: Examples of freight transportation price in the surveyed area for rural taxis

Load type	Start	Finish	Distance (km)	Price (FCFA)	Price (USD)	Price/km (USD)	Price/tonne-km (USD)
Bag of cement (0.05 tons)	Ebolowa	Ambam	90	500	1	0,01	0,22
	Ebolowa	Sangmelima	117	1000	2	0,02	0,34
	Sangmelima	Avebe-Esse	18	500	1	0,06	1,11
	Ambam	Kyé Ossi	30	200	0.40	0,01	0,27
	Ambam	Olamze	45	750	1.50	0,03	0,67
	Olamze	Meyo Biboulou	20	500	1	0,05	1,00
Plantain (0.01 ton)	Ma'an	Aban Miko'o	175	120	0.24	0,00	0,14
	Nyabessan	Aban Miko'o	225	180	0.36	0,00	0,16
Bag of cocoyams (0.15 ton)	Avebe-Esse	Sangmelima	18	1000	2	0,11	0,74
	Ebolowa	Sangmelima	117	1500	3	0,03	0,17

Table 18: Examples of freight (bag of cement) transportation prices in the surveyed area for motorbikes

Load type	Start	Finish	Distance (km)	Price (FCFA)	Price (USD)	Price/km (USD)	Price/tonne-km (USD)
Bag of cement (0.05 tons)	Ebolowa	Ambam	90	1000	2	0,02	0,44
	Ebolowa	Sangmelima	117	3000	6	0,05	1,03
	Sangmelima	Avebe-Esse	18	1500	3	0,17	3,33
	Ambam	Kyé Ossi	30	500	1	0,03	0,67
	Ambam	Olamze	45	1000	2	0,04	0,89
	Olamze	Meyo Biboulou	20	1000	2	0,10	2,00

For the freight transportation prices using motorbikes, only bag of cement has been involved. This is due to the fact that motorbikes operators said to carry them very often comparing to plantain and cocoyams, and this freight has a fixed and standard weight.

Table 19 : Daily average number of transportation modes that exist in the Southern province of Cameroon according to the types of spokes

	Village spoke			Market spoke			Regional spoke		
	Market	**Non market**	**Total**	**Market**	**Non market**	**Total**	**Market**	**Non market**	**Total**
Trucks (> 3 tons)	4	2	**6**	3	9	**12**	8	4	**12**
Trucks (< 3 tons)	3	1	**3**	6	4	**10**	3	6	**9**
Buses (> 20 seats)	0	0	**0**	8	11	**19**	5	7	**12**
Rural taxis/Mini bus (< 20 seats)	3	4	**7**	20	12	**32**	19	18	**36**
Rural taxi/pick ups	3	2	**4**	2	3	**5**	27	13	**40**
Rural taxi/cars, 4x4s	7	12	**19**	38	37	**74**	17	20	**37**
Cars / 4x4s	8	6	**14**	7	37	**44**	19	11	**30**
Gov./NGO- car/pick ups	1	1	**1**	5	8	**13**	5	10	**15**
Gov./NGO - trucks	0	0	**0**	1	5	**6**	4	4	**8**
Private - car, pick ups, 4x4s	2	7	**8**	17	25	**42**	17	14	**31**
Female pedestrians	96	81	**177**	94	77	**171**	121	50	**170**
Male motorcyclist	93	103	**196**	108	162	**270**	78	66	**144**
Female motorcyclist	0	1	**1**	3	2	**4**	0	0	**0**
Male bicycles	16	9	**25**	8	10	**18**	7	8	**15**
Male pedestrians	76	65	**141**	140	82	**221**	73	59	**132**
Female bicycles	0	0	**0**	0	0	**0**	2	1	**3**

Table 20: Daily average number of grouped transportation modes that exist in the Southern province of Cameroon according to the types of spokes

	Village spoke			Market spoke			Regional spoke		
	Market	**Non market**	**Total**	**Market**	**Non market**	**Total**	**Market**	**Non market**	**Total**
Trucks	7	2	9	9	13	21	10	10	20
Buses	0	0	0	8	11	19	5	7	12
Rural Taxis	12	18	29	59	52	111	63	50	113
Non commercial vehicles	10	13	23	29	74	103	44	39	83
Motorcycles	93	104	197	111	163	274	78	66	144
Bicycles	16	9	25	8	10	18	9	9	18
Pedestrians	172	146	317	233	159	392	194	108	302

Table 21 : Regional spoke count summary

	Over full capacity	Daily average number of over full	Total daily full capacity	Full capacity	Daily average number of full	Total daily half full capacity	Half full capacity	Daily average number of half full	Total daily over full capacity
Trucks - less than 3 tonnes	2	7	11	2	1	2	1	0	0
Trucks - more than 3 tonnes	9	2	14	10	6	57	5	2	11
Buses (more than 20 seats)	35	2	53	30	8	240	15	8	113
Rural taxis - Mini bus (less than 20 seats)	19	12	228	15	18	263	8	4	28
Rural taxi - pick ups (tons)		27	0	1	7	9	1	0	0
Rural taxi - cars, 4x4s (seats)	13	23	293	5	10	50	3	1	3
Cars / 4x4s (seats)	13	8	98	4	11	44	2	1	2
Government / NGO - car / pick ups (seats)	3	0	0	4	2	6	2	1	2
Government / NGO - trucks (tons)	5	0	0	5	3	15	3	1	3
Private - car, pick ups, 4x4s (seats)	8	2	16	3	10	29	2	1	1

Table 22 : District spoke summary count

Modes	Over full capacity	Daily average number of over full	Total daily full capacity	Full capacity	Daily average number of full	Total daily half full capacity	Half full capacity	Daily average number of half full	Total daily over full capacity
Trucks - less than 3 tons	2	3	5	2	1	2	1	3	2
Trucks - more than 3 tons	9	0	0	10	2	19	5	2	7
Buses (more than 20 seats)	35	18	630	30	1	30	15	0	0
Rural taxis - Mini bus (less than 20 seats)	19	19	361	15	6	90	8	3	23
Rural taxi - pick ups		2	0	1	1	1	1	2	1
Rural taxi - cars. 4x4s	13	32	410	5	23	113	3	8	20
Cars / 4x4s	13	7	85	4	17	66	2	12	24
Government / NGO -car / pick ups/	3	1	3	4	3	12	2	6	12
Government / NGO - trucks	5	1	3	5	1	3	3	2	4
Private - car. pick ups. 4x4s	8	2	16	3	6	18	2	12	18

Table 23 : Village spoke summary count

Modes	Over full capacity	Daily average number of over full	Total daily over full capacity	Full capacity	Daily average number of full	Total daily full capacity	Half full capacity	Daily average number of half full	Total daily half full capacity
Trucks - less than 3 tons	2	1	2	0	0	0	3	2	5
Trucks - more than 3 tons	0	0	0	7	4	25	0	0	0
Buses (more than 20 seats)	0	0	0	0	0	0	0	0	0
Rural taxis - Mini bus (< 20 seats)	4	2	8	2	1	2	6	3	18
Rural taxi - pick ups	5	3	13	0	0	0	2	1	2
Rural taxi - cars. 4x4s	11	6	61	10	5	50	7	4	25
Cars / 4x4s	2	1	2	3	2	5	11	6	61
Government / NGO -car / pick ups/	0	0	0	0	0	0	1	1	1
Government / NGO - trucks	0	0	0	0	0	0	0	0	0
Private - car. pick ups. 4x4s	0	0	0	1	1	1	7	4	25

Figure 8: General distribution of total number detailed transportation modes in the surveyed area according to different spokes

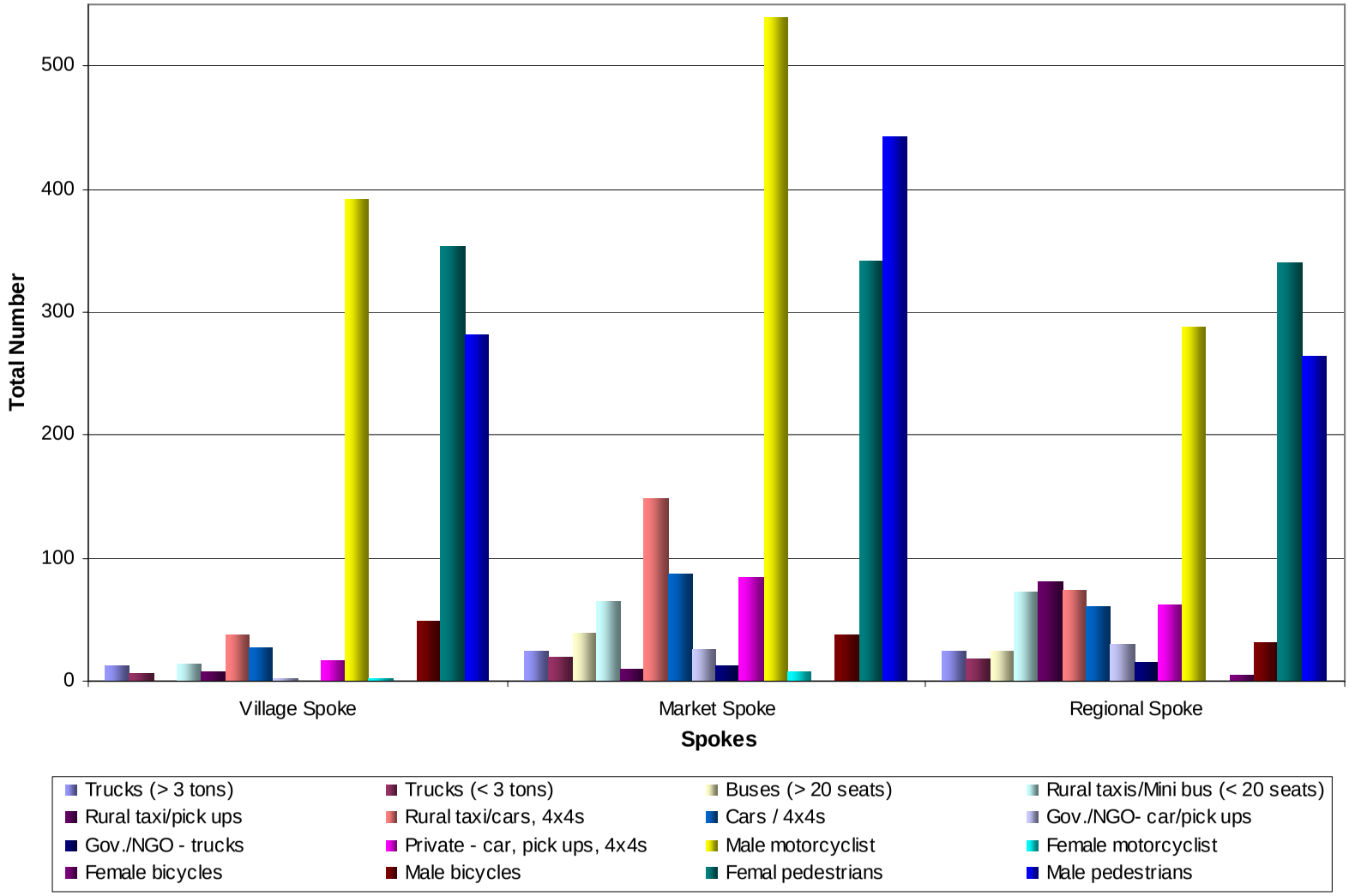


Figure 9: General distribution of average number of detailed transportation modes in the surveyed area according to different spokes

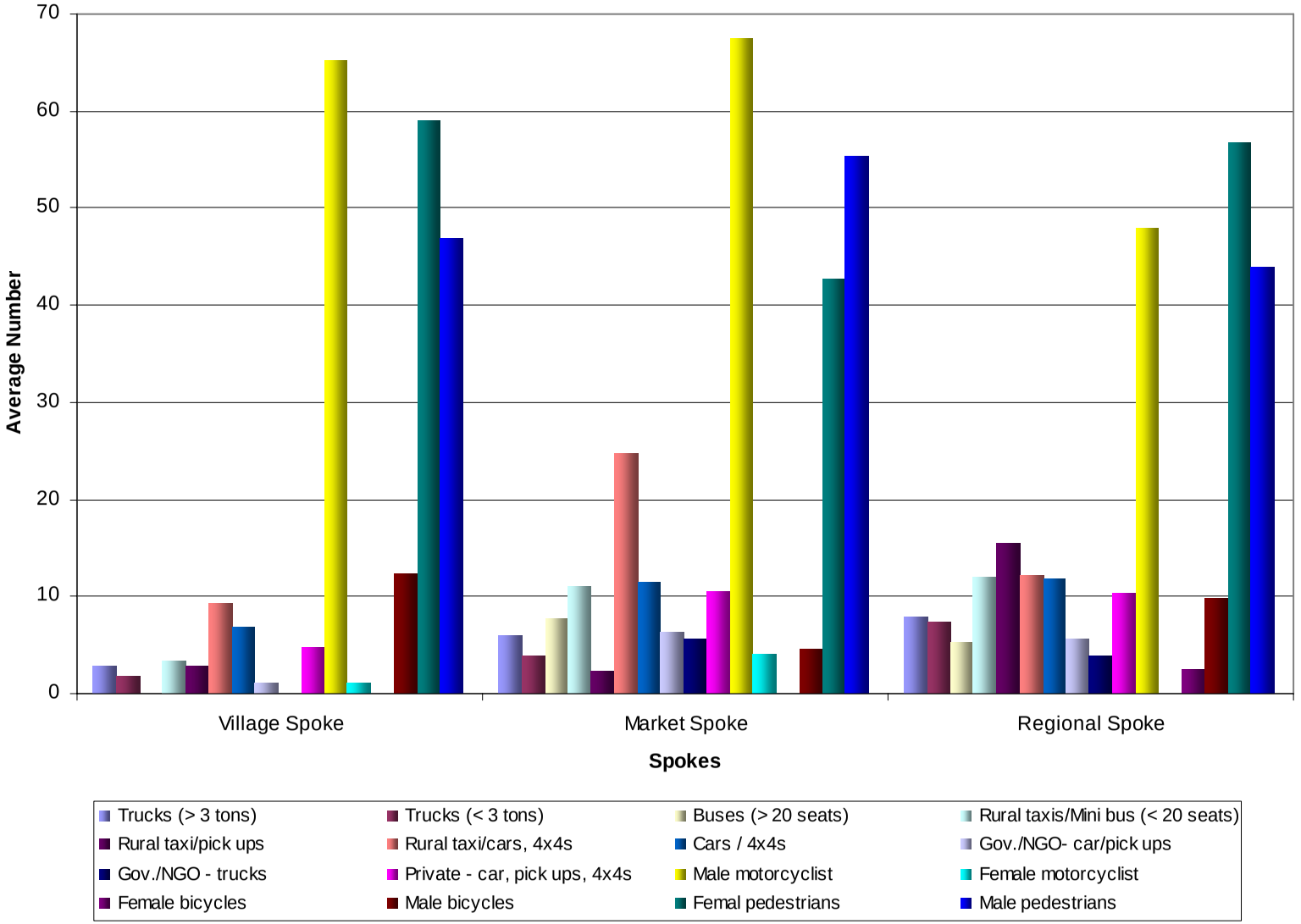


Table 24: General summary sheet

Modes of transport	Passengers / loads		Average frequencies					
	Manufact. Recomm. loading capacity (people or tons)	Observed loading (people or tons)	Regional spoke		Market spoke		Village spoke	
			Market day	Ord. day	Market day	Ord. day	Market day	Ord. day
Trucks - less than 3 tons	1 - 2 tons	1.5 - 2 tons	5	9	3	12	3	1
Trucks - more than 3 tons	8 - 11 tons	5 - 13 tons	19	15	8	8	4	2
Buses (> 20 seats)	30 seats	35 seats	0	1	3	7	0	0
Rural taxis mini bus < 20 seats	15 seats	19 seats	13	10	12	12	3	4
Rural taxis Pick ups	1 – 1.5 tons	1.5 – 2 tons	7	3	18	13	3	3
Rural taxis 4 x 4	5 seats	10 - 15 seats	12	13	11	13	7	12
Cars 4 x 4	3 - 5 seats	10 - 15 seats	7	16	13	11	8	6
Government/NGO 4x4s. pickups and cars	3 – 5 seats	1 – 5 seats	4	6	5	7	1	1
Government/NGO trucks	2 - 8 tons	2 – 8 tons	3	6	4	4	0	0
private cars and pick ups	2 - 4 seats	8 seats	10	12	11	9	3	7
Male Motorcyclist	2 seats	2 - 4 seats	63	74	52	44	62	68
Female Motorcyclist	2 seats	1 - 2 seats	1	3	0	0	0	2
Male Bicyclist	1 seats	2 seats	9	5	14	5	4	5
Female Bicyclist	1 seats	1 seats	0	0	4	1	0	0
Male Pedestrians	0	0	51	49	49	39	47	39
Female Pedestrians	0	0	60	53	80	33	70	41

Table 25: Summary sheet for regional spoke (total)

Modes	Total numbers	Over full	Full	Half full	Empty	Prime Freight	Prime Pass.
Trucks - less than 3 tons	17	13	2	1	1		0
Trucks - more than 3 tons	23	3	12	4	4		
Buses (more than 20 seats)	24	3	16	5	0	0	
Rural taxis - Mini bus (less than 20 seats)	72	24	35	13	0	7	
Rural taxi - pick ups	80	54	14	11	1	20	
Rural taxi - cars. 4x4s	73	45	20	8	0	2	
Cars / 4x4s	60	15	22	13	10	11	
Government / NGO -car / pick ups/	26	0	3	9	14		
Government / NGO - trucks	15	0	6	6	3		
Private - car. pick ups. 4x4s	61	4	19	23	15		

Pedestrians	Total number	> 5kg load	< 5kg	No load	
Female pedestrian	340	106	144	90	
Male pedestrian	208	98	25	85	

Cyclists	Total number	1 Pass.	> 5kg load	Neither
Male bicycles	27	1	13	12
Female bicycles	5	0	4	1

Motorcycles	Total number	1 Pass.	2 passenger	3 Pass.	Load only	Load + Pass.
Male motorcyclist	287	101	94	29	110	80
Female motorcyclist	0	0	0	0	0	0

No load

Table 26: Summary sheet for district spoke (total)

Mode	Total numbers	Over full	Full	Half full	Empty	Prime Freight	Prime Pass.
Trucks - less than 3 tons	19	6	2	6	4		0
Trucks - more than 3 tons	23	0	4	3	16		
Buses (more than 20 seats)	38	36	2	0	0	16	
Rural taxis - Mini bus (less than 20 seats)	64	38	12	6	8	4	
Rural taxi - pick ups	9	3	1	4	1	1	
Rural taxi - cars. 4x4s	148	63	45	16	24	36	
Cars / 4x4s	78	13	33	24	8	1	
Government / NGO -car / pick ups/	25	2	6	12	5		
Government / NGO - trucks	11	1	1	3	6		
Private - car. pick ups. 4x4s	83	4	12	24	43		

Pedestrians	Total number	> 5kg load	< 5kg	No load	
Female pedestrian	341	93	90	127	
Male pedestrian	442	91	80	231	

Cyclists	Total number	1 Pass.	> 5kg load	Neither
Male bicycles	36	5	19	13
Female bicycles	0	0	0	0

Motorcycles	Total number	1 Pass.	2 passenger	3 Pass.	Load only	Load + Pass.
Male motorcyclist	539	299	110	3	133	129
Female motorcyclist	8	7	1	0	3	3

Table 27: Summary sheet for village spoke (total)

Modes	Total numbers	Over full	Full	Half full	Empty	Prime Freight	Prime Pass.
Trucks - less than 3 tonnes	6	2	0	3	1		
Trucks - more than 3 tonnes	11	0	7	0	4		
Buses (more than 20 seats)	0	0	0	0	0		
Rural taxis - Mini bus (less than 20 seats)	13	4	2	6	1	2	
Rural taxi - pick ups	8	5	0	2	1	1	
Rural taxi - cars, 4x4s	37	11	10	7	9	3	
Cars / 4x4s	24	2	3	11	8	1	
Government / NGO -car / pick ups/	2	0	0	1	1		
Government / NGO - trucks	0	0	0	0	0		
Private - car, pick ups, 4x4s	15	0	1	7	7		
Pedestrians	**Total number**	**> 5kg load**	**< 5kg**	**No load**			
Female pedestrian	353	69	124	160			
Male pedestrian	281	77	63	141			
Cyclists	**Total number**	**1 Pass.**	**> 5kg load**	**Neither**			
Male bicycles	49	5	24	20			
Female bicycles	0	0	0	0			
Motorcycles	**Total number**	**1 Pass.**	**2 passenger**	**3 Pass.**	**Load only**	**Load + Pass.**	
Male motorcyclist	391	157	112	11	108	70	
Female motorcyclist	2	1	0	0	1	1	

Table 28: Distribution of average number of transportation modes according to different spokes

	Village spoke			Market spoke			Regional spoke		
	Market	**Non market**	**Tot. Aver.**	**Market**	**Non market**	**Tot. Aver.**	**Market**	**Non market**	**Tot. Aver.**
Trucks (> 3 tons)	4	2	3	6	6	6	8	8	8
Trucks (< 3 tons)	3	1	2	4	4	4	3	12	7
Buses (> 20 seats)	0	0	0	8	7	8	3	7	5
Rural taxis/Mini bus (< 20 seats)	3	4	3	10	12	11	12	12	12
Rural taxi/pick ups	3	3	3	2	3	2	18	13	16
Rural taxi/cars, 4x4s	7	12	9	25	24	25	11	13	12
Cars / 4x4s	8	6	7	5	18	11	13	11	12
Gov./NGO- car/pick ups	1	1	1	5	8	6	5	7	6
Gov./NGO - trucks	0	0	0	2	9	6	4	4	4
Private - car, pick ups, 4x4s	3	7	5	8	13	10	11	9	10
Male motorcyclist	62	68	65	54	81	67	52	44	48
Female motorcyclist	0	2	1	5	3	4	0	0	0
Female bicycles	0	0	0	0	0	0	4	1	3
Male bicycles	16	9	12	4	5	5	14	5	10
Female pedestrians	64	54	59	47	39	43	80	33	57
Male pedestrians	50	43	47	70	41	55	49	39	44

Table 29: Distribution of total number of transportation modes according to different spokes

	Village spoke			Market spoke			Regional spoke		
	Market	**Non market**	**Total**	**Market**	**Non market**	**Total**	**Market**	**Non market**	**Total**
Trucks (> 3 tons)	8	3	11	6	17	23	15	8	23
Trucks (< 3 tons)	5	1	6	11	8	19	5	12	17
Buses (> 20 seats)	0	0	0	16	22	38	10	14	24
Rural taxis/Mini bus (< 20 seats)	5	8	13	40	24	64	37	35	72
Rural taxi/pick ups	5	3	8	3	6	9	54	26	80
Rural taxi/cars, 4x4s	13	24	37	75	73	148	34	39	73
Cars / 4x4s	15	12	27	14	73	87	38	22	60
Gov./NGO- car/pick ups	1	1	2	9	16	25	9	20	29
Gov./NGO - trucks	0	0	0	2	9	11	8	7	15
Private - car, pick ups, 4x4s	3	13	16	33	50	83	33	28	61
Femal pedestrians	192	161	353	187	154	341	241	99	340
Male motorcyclist	186	205	391	216	323	539	155	132	287
Female motorcyclist	0	2	2	5	3	8	0	0	0
Male bicycles	32	17	49	16	20	36	14	16	30
Male pedestrians	151	130	281	279	163	442	146	117	263
Female bicycles	0	0	0	0	0	0	4	1	5

Table 30: Traffic count Summary Sheet and loading factors

Traffic Count Summary Sheet and Loading Factors - Summary Sheet											
Modes	Passengers / loads		Frequency		Average	Frequency		Average	Frequency		Average
	Manuf. Recom. loading capacity (people or tonnes)	Observed loading (people or tonnes)	Market day	Non Market day		Market day	Non Market day		Market day	Non Market day	
			Regional spoke	Regional spoke	Regional Spoke	Market spoke	Market spoke	Market Spoke	Village spoke	Village spoke	Village spoke
Buses (+20 seats)	30	35	3	7	6	8	7	7	0	0	0
Rural taxis (pick up trucks, minibuses, cars)	15	19	14	13	13	12	13	13	3	5	5
Government/NGO 4x4s, pickups and cars	5	12	17	20	19	20	20	20	8	1	2
private cars and pick ups	5	12	11	9	10	8	13	12	3	7	6
Male Motorcyclist	2	3	52	44	45	54	81	77	62	68	67
Female Motorcyclist	2	2			0	5	3	3	0	2	2
Male Bicyclist	1	2	14	5	7	4	5	5	4	5	5
Female Bicyclist	1	1	4	1	1			0	0	0	0
a) Total Vehicle Journeys			115	99	101	112	142	138	79	88	87
b) Total Passenger Journeys-Recommended			571	637	628	687	754	744	224	260	255
c) Total Passenger Journeys-Actual			899	971	961	1030	1157	1139	373	407	402
d) Overloading Proportion			0,58	0,52	0,53	0,50	0,53	0,53	0,67	0,56	0,58
e) Total Vehicle Journeys-Motorised			97	92	93	108	137	133	75	83	82
f) Total Vehicle Journeys-Non-Motorised			18	6	8	4	5	5	4	5	5
g) Total Passenger Journeys-Motorised			553	631	620	683	749	739	220	255	250
h) Total Passenger Journeys-Non-Motorised			18	6	8	4	5	5	4	5	5
i)Proportion of Passenger Journeys Motorised			97	99	99	99	99	99	98	98	98
j)Proportion of Passenger Journeys Non Motorised			3	1	1	1	1	1	2	2	2
k) Average Loading-Motorised			6	7	7	6	5	6	3	3	3
l) Average Loading-Non-Motorised			1	1	1	1	1	1	1	1	1

Table 31: Overview of some retail prices of basic commodities according to localities

Commodities	Retail Prices (FCFA)			
	Capital City	Regional Town	Market Town	Village
Fuel Diesel	450	470	500	600
Fuel Petrol	500	515	525	700
Roofing Sheet – Iron	6 000	6 300	6 500	Not sold
Bag cement	5 000	5 175	5 500	Not sold
Sugar 1 kg bag	500	600	650	700
***Macabo* (pile of 5 kg)**	500	400	400	200
Cassava (pile of 5 kg)	600	500	400	300

6.3- List of people contacted/interviewed

Localities	Names	Address	Structure
Yaoundé	Mr Philippe Jacques	Tel. 220 13 87	Cameroon Delegation of European Commission
	Mr Joss Winner	Tel. 770 23 61	GTZ
	Mr Nkouanga François	220 38 15	Cameroon Country Office. World Bank
	Mr Apara Kingson	Tel. 750 03 32	Senior Operations Officer. Cameroon Country Office. World Bank
	Mrs Essombe Grâce		Ministry of transport. Project and studies division
	Mr Lissom Vincent		Ministry of transport. Project and studies division
	Mr Ekwala Daniel	Tel. 964 24 55	Ministry of transport. General Secretary
	Mr Ngueko Raoul	Tel. 900 36 84 / 223 96 92	Local correspond. INICA (Initiative for Central Africa) / SNV
	Mr Schill Maurice	Tel. 220 27 72 / 221 45 38	Senior Counsellor. SNV
Douala	Mr Moussa Issa Saidou	Tel. 340 96 21 / 980 05 16	La Maison du Cycle
	Mr Youmbi Pierre	Tel. 340 13 68 / 980 05 15	La Maison du Cycle
Ebolowa	Mr Gham-Boh Emmanuel	Tel. 228 46 67 / 778 92 34	Provincial delegate of transport
	Mr Shey Mbuwir Tobias B.	Tel. 228 32 34 / 762 16 67	Provincial Chief Service of lend transportation of Southern province
	Mr Akono Mvondo Léopold	Tel. 767 18 31 / 228 30 91	Provincial delegation of Public Works
	Mr Melingui Onana Joseph Marcel	Tel. 228 30 91	Provincial delegation of Public Works
	Dr. Essomba Essomba Ernest D.	Tel. 769 01 64 / 228 31 83	Chief Service of Ebolowa Health District
		President and general Executive Secretary	SYNECMOTAME (Syndicat des Exploitants Conducteurs des Motos Taxis de la Mvila à Ebolowa
	Mr Ebangbeng André Serge	Tel. 921 98 05	Chief of projects. surveys and statistics Provincial service. Provincial delegation of Agriculture
	Mr Ndifor David	Tel. 775 14 11	Ndicam Automobiles
Ambam	Dr. Enyegue Andre Marie	Tel. 923 98 56	Chief Service of Ambam Health DIstrict

	Mr Tchouffoh Joseph	Tel. 928 79 19	Divisional Chief Service of Land transportation of Vallée du Ntem
	Mr Mah Kinda Joseph Yves	Tel. 927 53 27	Head Master of the Technical High School of Ambam
			Head Master of the General High School of Ambam
Sangmelima	Mr Mendo'o Essam Felix	Tel. 763 19 23	SETRACAUCAM (Syndicat des Exploitants et Transporteurs du Cameroun)
	Mr Mendzana Thomas	Tel. 954 88 74 / 717 55 02 / 228 85 30	Divisional Chief Service of Land transportation of Dja et Lobo
	Mrs.		Head Master of the Bilingual general High School of Sangmelima
	Mr		Head Master of the Technical High School of Sangmelima
	Mr Tanga Efangono	Tel. 928 95 66 / 228 82 17	Chief service of roads Subdivision. Ministry of Public Works

6.4- List of references and resource materials

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