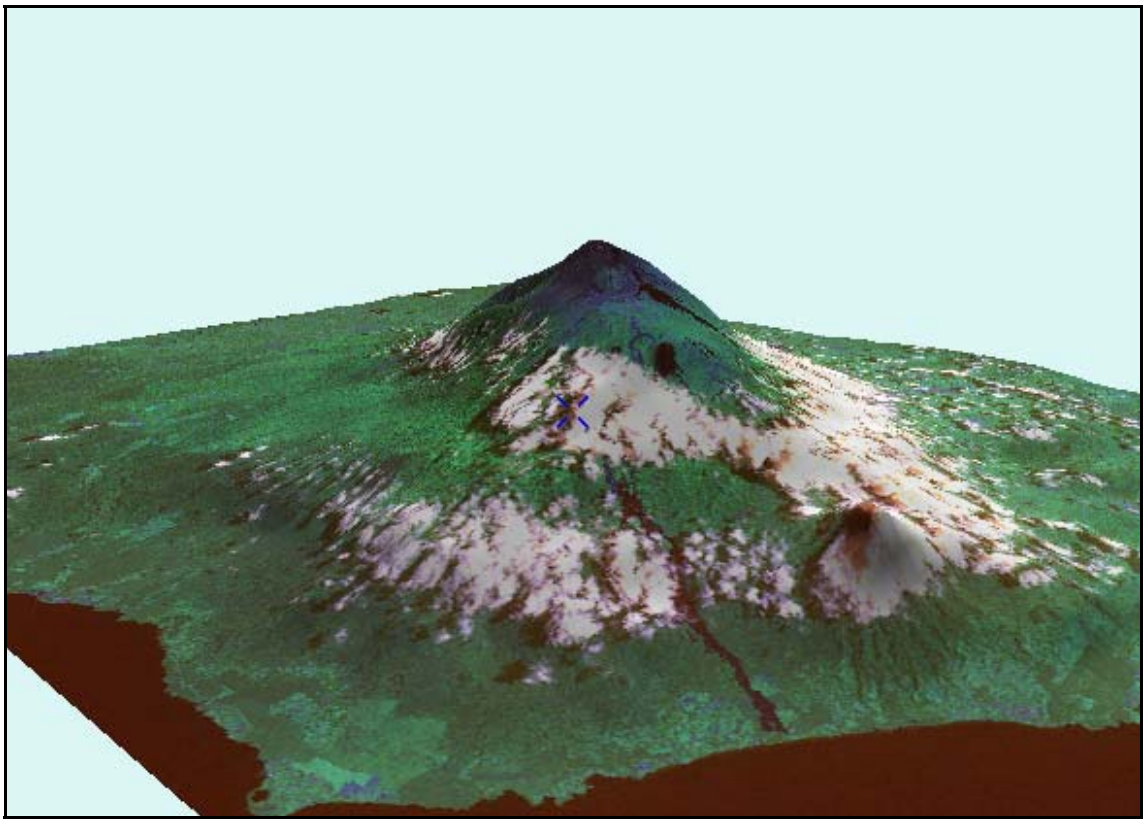
Rural livelihood and social infrastructure around Mount Cameroon

Background information for the Mount Cameroon socio-economic geographical information system (MC-SE-GIS)



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by
Dr. Kai Schmidt-Soltau
(SchmidtSol@aol.com)

Maps and GIS elaborated by
PSC GmbH, Karl Tiller
(kt@pscgmbh.com)

Im Auftrag der Deutschen Gesellschaft für Technische Zusammenarbeit (GmbH)

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Executive Summary

The Mount Cameroon region is one of the 25 global biodiversity hotspots. It is home for 250,000 people. The Mount Cameroon Project, an integrated conservation and development project, commissioned a socio-economic study, to establish an end-of-project-picture and to achieve a reliable basis for further planning, monitoring and evaluation.

136 settlements along or within the circle of the 'Mt. Cameroon ring-road' (Mutengene-Muyuka-Munyenge-Idenau-Limbe-Mutengene) were surveyed. 'Settlements' are defined as having at least 3 buildings and a clearly defined demarcation. 96% of the settlements participated in the research.

Five methods were used to gather information: village mapping, focus group interviews, individual interviews, literature review and GPS-mapping.

Demography: Number of houses, estimated population & distribution of ethnic groups;

The number of functioning houses (completed and not broken down) in the research region is 30,824. A high number of houses is under construction (6%). Almost all houses are covered with iron sheets and/or tiles (99%).

A house (personal infrastructure under one roof) in the research region is inhabited on average by 7.9 people. The total population is estimated to be 254,606 people. 92% of the population live in village type settlements, while 8% live in plantation camps.

The autochthon population (Bakweri, Bomboko) represents 23% of the total population.

Livelihood: Source of income, major farming system, major crops produced, special economic features & marketing;

Food crop farming is the most important source for the livelihood of the population around Mt. Cameroon. The forest as direct source of income and subsistence through hunting and gathering is not very important for the overall population.

18% settlements are plantation camps and 10% of settlements were of the view that plantation and small scale farming are equally important as farming systems.

Plantains, cocoyam and cassava are the most important agricultural products and contribute more than twice as much as cocoa and coffee to the livelihood.

On average the surveyed settlements are engaged in 3.7 alternative income generating activities, but beside of the various forms of livestock rearing, only beekeeping, cassava processing and fuel wood harvesting have any relevance for the rural population.

Muea was considered by all respondents as main food crop market in the region, but Mutengene has more market stands. 29 settlements have markets, most of them bi-weekly.

Social infrastructure: Education, health services, water supply, electricity, access to governmental services, administrative setting & existence of common initiative groups;

There are 259 educational facilities in the area – ranging from kindergartens to university - with a total enrolment of 87,858 pupils. The average teacher-pupil ratio is 36.13 and on average 51.6 pupils are attending school in one classroom. The standard of the buildings is in many cases low. More than half of the schools in the region are run by private institution and the various missions. Private schools have more teachers and more classrooms per child and the standard of infrastructure is also better than in governmental schools. Mission schools offer the best infrastructure, while they have even more pupils per teacher than any other school.

The research region has a significant higher number of physicians (19 per 100,000 people) than the overall country (7 per 100,000 people) but thir services are limited to the towns (area around Buea, Limbe, Muyuka). The buildings of village health centres are mostly in good conditions, but do not have much staff and are often purely equipped. Problems in the governmental health care system have resulted in a high number of private health facilities, but their staff situation and infrastructure does not differ from state owned or mission hospitals. Apart from formal health facilities offer in most settlements traditional healers their services.

About 9.2% of the surveyed settlements did not have any water supply at all. Pipe born water is available in 57% of the villages, but the standard is very low.

About 51% of the settlements are connected to the national grid.

Outside the town the access to administrative infrastructure is very limited.

The 136 villages are located in 2 divisions and 6 councils/ sub-divisions.

About 19% of the settlements have common initiative groups.

Relevance for biodiversity conservation and relation with MCP.

31 settlements (24%) were of the view, that some of their inhabitants are utilising the land demarcated as forest reserve. 11 of them have traditional rights to hunt, gather, fish and farm within the Bomboko forest reserve.

These settlements with an estimated population of 35,459 people (14% of the overall population) are significantly more dependent on the forest. They have significantly less social infrastructure (schools, health facilities, water, electricity) than the other settlements in the area.

MCP targeted their work towards population that is utilising the natural resources of the Bomboko forest reserve. MCP has worked with 84% of the Bomboko forest reserve area settlements and with 28% of the other settlements. The average number of activities per village is also higher in this area.

1. Introduction

The Mount Cameroon region is one of the 25 global biodiversity hotspots (Conservation International 2003) with several endangered species and a unique landscape. It is home for 250,000 people.[1] Following the guiding principles of international politics (sustainable development = poverty reduction & biodiversity conservation) Mount Cameroon Project is an integrated conservation and development project (ICDP) to link biodiversity conservation and the development needs of the rural population. The basic belief behind the ICDP approach is the notion that conservation is doomed to fail as long as local people are not compensated for income losses resulting from conservation. Literature describes a number of interventions to achieve that the rural population at least accepts the conservation measures carried out on land traditionally owned and utilised by them:

1. Establishment of buffer zones;
2. Promotion of alternative natural resource management interventions in the fields of agriculture and forestry;
3. Promotion of alternative sources of income to replace existing income-generating activities, which are perceived as contra-productive to the conservation goals;
4. Reinforcement of existing forest management strategies and distribution of the benefits directly resolving from sustainable forest use;
5. Provision of benefits such as roads, communal infrastructure and social services;
6. Distribution of benefits arising from conservation such as income from tourism and biological prospecting (Wells et al 1990, Ghimire and Pimbert 1997).

The Mount Cameroon Project (MCP) has worked with village-based organisations living and working around Mount Cameroon since 1995. It is believed, that organisational development, introduction of sustainable agriculture and forestry methods, ecotourism and other activities had a positive impact on the wellbeing of the populace. Nevertheless, these impacts could in the past - due to the absence of baseline data – neither be verified nor quantified. To establish an end-of-project-picture and to achieve a reliable basis for further planning, monitoring and evaluation, MCP commissioned a socio-economic study to collect data will be fed into a geographical information system (Appendix 1). The result is a geospatial socio-economic database.

2. Methodology and study design

2.1. Type of information collected

Data were collected on:
Demography: Number of houses, estimated population & distribution of ethnic groups;
Livelihood: Source of income, major farming system, major crops produced, special economic features & marketing;
Social infrastructure: Education, health services, water supply, electricity, access to governmental services, administrative setting & existence of common initiative groups;
Relevance for biodiversity conservation and relation with MCP.

[1] Data from this survey.

2.2. Survey team

The socio-economic and spatial data were collected in two fieldwork phases by a team (Mr. Pary-Cao Arrey Agbortar, Mr. James Eban Takem, Ms. Elive Rose Ewune & Ms. Frida Nanyongo Luma) under the supervision of Dr. Kai Schmidt-Soltau, while Mr. Ngenge Vefonge established a comprehensive list of common initiative groups active in the research region. All data were entered into an ACCESS database established by the Project Service Consultant GmbH (PSC) and Dr. Kai Schmidt-Soltau. Dr. Kai Schmidt-Soltau analysed the data, while PSC linked the analysed data to satellite images and topographical maps.

2.3. Sample units and sample size

'Settlement' was chosen as basic unit (entity) for the data gathering. 'Settlements' are defined as having at least 3 buildings and a clearly defined demarcation, separating them from other 'settlements'.

It was decided, that the research region is demarcated by the 'Mt. Cameroon ring-road' (Mutengene-Muyuka-Munyenge-Idenau-Limbe-Mutengene – see map 1). 136 settlements along or within this circle were surveyed (Appendix 2) of which 131 will be assessed in the following. The infrastructure of Bomana Bomboko, Mweli, Bomboko Bush Farm, Mondongo 2 and Sonara quarter could not been assessed. For all other settlements, complete data sets are available (beside of missing census data for Bavenga Prison).

2.4. Methodology

Five methods were used to gather information: village mapping, focus group interviews, individual interviews, literature review and GPS-mapping.

The village mapping was carried out by teams of two people (one permanent assistant and one village helper, selected by the chief and/or traditional council). Following the guidelines for village mapping (see Appendix 3), the permanent assistants mapped all buildings of all settlements indicating its state (functional, under construction, collapsed), size (houses, compounds - which have more than one individual house under one roof -, blocks - structures in plantation camps and 'towns', which comprise several apartments - and storey buildings), composition (indicating the roofing: zinc/tiles or other material) and function (individual or social such as: schools, health and water facilities, communal, governmental and religious buildings) (an example is provided in Appendix 7). Photocopies of all maps were returned to the surveyed villages, while the originals remained in the MCP office in Buea and are as a scanned version accessible through the database.

With the help of a structured questionnaire (Appendix 4) and data collection guideline (Appendix 5) socio-economic information (livelihood and social infrastructure) were gathered in focus group interviews with chiefs/quarter heads, councils and/or the interested public. Detailed information like the enrolment and number of staff was gathered from the headmasters, principals, chief of posts etc. or their representatives. The state of buildings was assessed on the ground following criteria outlined in the data collection guideline.

With the help of an individual questionnaire (Appendix 6) - administered to one of the people present in the focus group discussion – census data of one individual house per settlement was collected. The census data contain information on age, sex, profession and family relation of each person living permanently in the selected building to the different household heads.

On the basis of literature available in the MCP library, a comprehensive list of common initiative groups active in the research region was established and integrated into the general database.

From the various provincial delegations in Buea (in charge of the entire research region) the research team collected information on the status of roads, educational statistics, information on health infrastructure and demography. Based on the assumption, that field data is preferable to office materials, those data were only used, if no other data were available.

The geospatial location of all settlements and motorable roads within the research region were assessed with the help of a Trimble Geo-Explorer 3 GPS receiver.

2.5. Data analysis

The data were entered and stored in an Access XP database. For the statistical analysis SPSS 10.5 was utilised and TNTmips 6.8 was used to establish the MC-SE-GIS.

2.6. Constrains

Most respondents received the team with open hands and minds and participated actively in the interviews and mapping exercise, but local attitudes to expatriate and bilateral projects are inevitably ambivalent in the Mt. Cameroon region (Sharp 1997). In two villages (Mweli & Bomana-Bomboko), two plantation camps (Bomboko bush farm, Mondongo 2) and one factory camp (Sonara), the population and rural administration refused to participate in the survey and prohibited the team from carrying out data collection. Due to the villagers' request, this report does not contain any detailed information.

In some other cases, the data presented and analysed might have been affected by the fear of the respondents that the team is out to collect information for taxation and/or to identify illegal activities for future prosecution.

3. Findings

3.1. Demography

Number of houses per village:
The number of functioning houses (completed and not broken down) in the research region is 30,824 (Table 1).

Name of settlement	Total	Functional	Under construction	Broken down	Under Construction (in	Broken Down (in %)
Growing settlements with a high number of buildings under construction						
Wonjava	7	4	3	0	42.86	0
Small Soppo Woganga	280	233	39	8	13.93	3.43
Bomaka	386	333	53	0	13.73	0
Boanda	15	12	2	1	13.33	8.33
Ngeme	210	180	28	2	13.33	1.11
Botaland	243	208	32	3	13.17	1.44
Bokosso	42	36	5	1	11.90	2.78
Isobe	17	15	2	0	11.76	0
Katakata	27	24	3	0	11.11	0
Mautu	128	114	14	0	10.94	0
Declining settlements with a high number of broken down buildings						
Mundame	7	4	0	3	0	75.00
Lower Boando	7	4	0	3	0	75.00
Kadji Cattle Ranch	11	8	0	3	0	37.50
Mundame camp	19	14	0	5	0	35.71
Bavenga	8	6	0	2	0	33.33
Bavenga Prison	14	11	0	3	0	27.27
Bulu	5	4	0	1	0	25.00
Etone	13	11	0	2	0	18.18
Small Soppo Likoko	32	27	1	4	3.13	14.81
Molyko Camp	40	35	0	5	0	14.29
Wosenge	8	7	0	1	0	14.29
Total/Average	**33,010**	**30,824**	**1,808**	**378**	**5.48**	**1.15**

Tab.1: Settlements with a very high ratio of new (under construction) or broken down houses

A high number of houses is under construction (5.9%). Further, almost all houses are covered with iron sheets and/or tiles (99%, Table 2). These two findings could lead to the conclusion that the Mt. Cameroon region, having superb agricultural land, is comparatively rich. However, the recent national household survey (ECAM 2) does not support this assumption.

House Classes	Functioning	Under Construction	Broken Down	Total	%
Personal house zinc/tiles roof	27,110	1,747	365	29,222	88.5
Personal house roof of other material	216	5	1	222	0.7
Personal compound zinc/tiles roof	3,408	56	10	3,474	10.5
Personal compound roof of other material	90	0	2	92	0.3
Total	30,824	1,808	378	33,010	100

Tab.2: Number of individual houses and compounds in the research region with/without iron sheet roofs

The ratio between functional houses and houses under construction/broken down give some idea on the dynamics and the poverty of a village. More detailed statements are not possible, since the household survey data (ECAM) can not be aggregated on settlement level.

Table 3 shows the number of other infrastructure facilities in the research region. Note that there are more churches than schools. The high number of administrative buildings is attributed to the fact, that the provincial capital, one divisional and three sub-divisional headquarters are located within the research region.

Other Infrastructure	Functioning	Under Construction	Broken down	Other Infrastructure	Functioning	Under Construction	Broken down
Tap stand	459	0	28	**Hotel**	47	0	0
Church	262	6	4	**Market**	30	2	0
School	256	2	1	**Water Tank**	17	1	0
Other Administrative	107	0	0	**Bank/Credit Union**	10	0	0
Other communal	91	2	3	**Well**	4	0	0
Health Post/Hospital/	70	0	0	**Ad. Building MINEF**	4	0	0
Pharmacy/Drugstores	55	5	0	**Ad. Building MINAGRI**	3	0	1
				Total	**1,367**	**18**	**37**

Tab.3: Overall number of social infrastructures in the research region

Population:

A house in the research region is inhabited on average by 7.85±4.84 people (Table 4).[2]

Settlement pattern[3]	N	Mean	Std. Deviation	Std. Error of Mean[4]	Minimum	Maximum
Camp	23	10.739	7.436	1.551	5	39
Village	107	7.234	3.855	0.373	1	19
Total	**130**	**7.854**	**4.842**	**0.425**	**1**	**39**

Tab. 4: Statistics on number of people per house in the research region[5]

The age and sex ratio of the surveyed 1021 people (table 5) compares well with the national average (Statistisches Bundesamt 1992, UNDP 2002)

Age Groups	Female	Male	Total
0-15 years	22.4	18.1	40.5
16-30 years	15.2	14.8	30.0
31-45 years	7.7	6.7	14.4
46-60 years	3.8	5.0	8.8
> 60 years	1.7	4.6	6.3
Total	**50.8**	**49.2**	**100.0**

Tab.5: Age and sex of people living in the sampled houses in percent

The average household[6] size of the sampled population (for village type settlements 5.63±3.02) compares well with the figure (5.59±3.71, Schmidt-Soltau 2001) established on

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[2] The selected sample method (one person from a focus group discussion with village representatives) might have influenced the estimate to be at the upper limit, since village officials in other areas tend to have more household members than the average villager: The households of chiefs and councillors of more that 2000 surveyed household in the Akwaya subdivision had on average 6.04 ±2.32 members in contrast to an overall average household size of 5.59±3.71 (Schmidt-Soltau 2001:63).

[3] The following camps were considered as villages (reason in brackets): Biwon Bonanza Estate, Kadji Cattle Ranch, Makoko Palm Estate (the houses in these private estates are small individual houses and not the normal camp-blocks), Mile 7 Camp Tomatal/Ebongo, Debundscha (in these two camps, the field assistants – which are the managers of the camps and provided with individual houses - insisted to be selected for census.

[4] The low sampling size (130 houses out of 30,824 functional houses and compounds = 0.41%) resulted in a high standard error, but the limited time (25 days of fieldwork for 136 settlements) and the fact that within the next month a national census will provide exact figures contributed to the selected rapid population assessment. Nevertheless, the data have to be considered as the most accurate data available, since the data are based on the factual number of houses in the researched settlements, which is a quite precise figure.

[5] ANOVA F=10.667, p=0.001.

[6] The sampled 130 houses contain 167 households.

the basis of 2827 households in one of the most detailed household survey in the South-West Province and the national household survey (ECAM 2 = 5.61±3.89)

The total population is estimated to be 254,606 people (Table 6).[7] One might be surprised, that a huge settlement like Limbe is inhabited only by 45,000 people, but the detailed mapping documented not more than 4,833 individual houses and 698 compounds/story buildings. Buea, which is a conglomerate of several settlements and villages is inhabited by around 53,000 people.

92% (234,370) of the population live in village type settlements, while 8% (20,234) live in plantation camps. Map 2 documents the spatial distribution of these villages and the population figures provided in full detail in table 7. It becomes obvious that the south east of the study region is the most heavily populated region.

[7] Utilising the well justified differentiation (camp/village), the average number of people per building was than extrapolated by the number of all functional living houses (excluding those under construction or collapsed) to compute an estimate of people per village/camp. Compounds (more than one building under one roof) and storey buildings were counted as 2 individual houses.

Village Name	Settlement Type	Census	Houses	Compounds	Extrapolation figure	Average house size	STD	Estimated population	+/-
Bafia-Muyuka	1	11	592	23	638	7.234	3.855	4,615	2,459
Bakingili	1	5	79	0	79	7.234	3.855	571	305
Batoke	1	9	375	26	427	7.234	3.855	3,089	1,646
Bavenga	1	8	6	0	6	7.234	3.855	43	23
Bavenga Prison	2		11	0	11	10.739	7.436	118	82
Big Kotto	1	14	51	1	53	7.234	3.855	383	204
Biwon (Bonanza Estate)	3	2	1	0	1	7.234	3.855	7	4
Boana	1	7	99	7	113	7.234	3.855	817	436
Boanda	1	4	10	2	14	7.234	3.855	101	54
Bobende	1	3	120	17	154	7.234	3.855	1,114	594
Bojoke	1	14	23	3	29	7.234	3.855	210	112
Bokoko	1	19	291	84	459	7.234	3.855	3,320	1,769
Bokosso	1	11	35	1	37	7.234	3.855	268	143
Bokova	1	9	37	18	73	7.234	3.855	528	281
Bokwai	1	2	130	24	178	7.234	3.855	1,288	686
Bokwaongo	1	8	226	55	336	7.234	3.855	2,431	1,295
Bomaka	1	4	320	13	346	7.234	3.855	2,503	1,334
Bomboko Forest Camp	2	15	6	0	6	10.739	7.436	64	45
Bonadikombo	1	4	1,056	249	1,554	7.234	3.855	11,242	5,991
Bonakanda	1	11	184	19	222	7.234	3.855	1,606	856
Bonduma	1	8	253	36	325	7.234	3.855	2,351	1,253
Bongala	1	5	8	0	8	7.234	3.855	58	31
Bonganjo	1	1	9	0	9	7.234	3.855	65	35
Bonjia	1	2	4	0	4	7.234	3.855	29	15
Bonjongo	1	10	162	13	188	7.234	3.855	1,360	725
Botaland	1	13	190	18	226	7.234	3.855	1,635	871
Bova 1	1	4	77	10	97	7.234	3.855	702	374
Bova 2	1	12	157	6	169	7.234	3.855	1,223	651
Bova Bomboko	1	5	101	37	175	7.234	3.855	1,266	675
Boviongo	1	3	29	1	31	7.234	3.855	224	120
Boviongo 2	2	14	0	11	22	10.739	7.436	236	164
Buea	1	8	969	48	1,065	7.234	3.855	7,704	4,106
Buea GRA	1	5	326	0	326	7.234	3.855	2,358	1,257
Bulu	1	11	4	0	4	7.234	3.855	29	15

Village Name	Settlement Type	Census	Houses	Compounds	Extrapolation figure	Average house size	STD	Estimated population	+/-
Bwassa	1	6	80	96	272	7.234	3.855	1,968	1,049
Bwiteva	1	3	53	3	59	7.234	3.855	427	227
Bwitingi	1	7	25	7	39	7.234	3.855	282	150
Bwiuku	1	5	390	16	422	7.234	3.855	3,053	1,627
Debundscha	3	3	57	1	59	7.234	3.855	427	227
Debundscha Beach	1	5	62	5	72	7.234	3.855	521	278
Dibanda	1	13	281	4	289	7.234	3.855	2,091	1,114
Ebie	1	6	123	11	145	7.234	3.855	1,049	559
Efolofo	1	7	29	4	37	7.234	3.855	268	143
Ekande	1	5	9	0	9	7.234	3.855	65	35
Ekona Lelu	1	2	52	10	72	7.234	3.855	521	278
Ekona Mbenge	1	10	1,002	58	1,118	7.234	3.855	8,088	4,310
Ekona Research	2	9	39	22	83	10.739	7.436	891	617
Ekona Yard	2	5	158	0	158	10.739	7.436	1,697	1,175
Ekonjo	1	4	24	0	24	7.234	3.855	174	93
Esuke New Camp	2	7	17	0	17	10.739	7.436	183	126
Etone	1	5	11	0	11	7.234	3.855	80	42
Ewonda	1	6	18	7	32	7.234	3.855	231	123
Ewongo	1	7	71	2	75	7.234	3.855	543	289
Great Soppo	1	19	1,590	291	2,172	7.234	3.855	15,712	8,373
Green Valley Palm Estate	2	6	6	0	6	10.739	7.436	64	45
Idenau	2	10	365	98	561	10.739	7.436	6,025	4,172
Ikata	1	5	353	13	379	7.234	3.855	2,742	1461
Isobe	1	3	15	0	15	7.234	3.855	109	58
Isongo Camp	2	39	18	0	18	10.739	7.436	193	134
Kadji Cattle Ranch	3	4	8	0	8	7.234	3.855	58	31
Karata Camp	2	12	41	0	41	10.739	7.436	440	305
Katakata	1	8	24	0	24	7.234	3.855	174	93
Kie	1	7	31	2	35	7.234	3.855	253	135
Kuke Kumbu	1	13	23	0	23	7.234	3.855	166	89
Likoko Membea	1	11	319	164	647	7.234	3.855	4,680	2,494
Likombe	1	6	65	5	75	7.234	3.855	543	289
Limbe	1	7	4,833	698	6,229	7.234	3.855	45,061	24,013
Limbola	1	7	104	4	112	7.234	3.855	810	432

Village Name	Settlement Type	Census	Houses	Compounds	Extrapolation figure	Average house size	STD	Estimated population	+/-
Liola Buea	1	9	8	0	8	7.234	3.855	58	31
Lower Boando	1	12	4	0	4	7.234	3.855	29	15
Lower Bokova	1	9	43	5	53	7.234	3.855	383	204
Lower Bolifamba	1	13	669	109	887	7.234	3.855	6,417	3,419
Lykoko	1	6	299	36	371	7.234	3.855	2,684	1,430
Lylale Leowo	1	16	88	3	94	7.234	3.855	680	362
Lysoka	1	4	314	10	334	7.234	3.855	2,416	1288
Lysoka camp	2	12	66	0	66	10.739	7.436	709	491
Makoko Palm Estate	3	5	4	0	4	7.234	3.855	29	15
Mapanja	1	7	96	2	100	7.234	3.855	723	386
Masone	1	2	14	0	14	7.234	3.855	101	54
Masuma	1	1	10	0	10	7.234	3.855	72	39
Maumu	1	5	140	8	156	7.234	3.855	1,129	601
Mautu	1	16	95	19	133	7.234	3.855	962	513
Mevio	1	8	36	0	36	7.234	3.855	260	139
Mile 30 Camp (Massue/Meanja)	2	6	54	0	54	10.739	7.436	580	402
Mile 7 Camp (Tomatal/Ebongo)	3	4	51	0	51	7.234	3.855	369	197
Mokindi (Sokolo)	1	7	314	142	598	7.234	3.855	4,326	2,305
Mokunda	1	8	112	0	112	7.234	3.855	810	432
Moliwe Camp	2	7	205	13	231	10.739	7.436	2,481	1,718
Molyko	1	16	1,265	62	1,389	7.234	3.855	10,048	5,355
Molyko Camp	2	15	35	0	35	10.739	7.436	376	260
Muangai	1	3	8	0	8	7.234	3.855	58	31
Muea	1	8	959	83	1,125	7.234	3.855	8,138	4,337
Mukondange	1	7	128	8	144	7.234	3.855	1,042	555
Mundame	1	7	4	0	4	7.234	3.855	29	15
Mundame camp	2	5	14	0	14	10.739	7.436	150	104
Mundongo	1	13	102	8	118	7.234	3.855	854	455
Munyenge	1	8	816	155	1,126	7.234	3.855	8,145	4,341
Mutengene	1	7	2,155	80	2,315	7.234	3.855	16,747	8,924
Muyange Ma Mbonje	1	6	100	3	106	7.234	3.855	767	409
Muyuka	1	9	565	253	1,071	7.234	3.855	7,748	4,129
Naanga	1	9	302	11	324	7.234	3.855	2,344	1,249
Ngeme	1	4	148	32	212	7.234	3.855	1,534	817

Village Name	Settlement Type	Census	Houses	Compounds	Extrapolation figure	Average house size	STD	Estimated population	+/-
Ngeme Camp	2	5	25	1	27	10.739	7.436	290	201
Njonji	1	5	27	0	27	7.234	3.855	195	104
Njonji Camp	2	20	26	0	26	10.739	7.436	279	193
Ombe Camp	2	8	19	0	19	10.739	7.436	204	141
Owe	1	13	358	19	396	7.234	3.855	2,865	1,527
Rechts Fluss Camp	2	7	44	0	44	10.739	7.436	473	327
Sanje	1	5	71	1	73	7.234	3.855	528	281
Saxenhof	2	5	0	41	82	10.739	7.436	881	610
Scipio Camp	2	7	54	0	54	10.739	7.436	580	402
Small Kotto	1	8	25	0	25	7.234	3.855	181	96
Small Soppo Likoko	1	11	27	0	27	7.234	3.855	195	104
Small Soppo Woganga	1	7	226	7	240	7.234	3.855	1,736	925
Small Soppo Woteke	1	7	72	21	114	7.234	3.855	825	439
Small Soppo Wovila	1	4	148	13	174	7.234	3.855	1,259	671
Soden Camp	2	16	36	0	36	10.739	7.436	387	268
Tole camp	2	8	177	0	177	10.739	7.436	1,901	1,316
Top line Camp	2	9	13	0	13	10.739	7.436	140	97
Upper Boando	1	3	20	0	20	7.234	3.855	145	77
Upper Bolifamba	1	2	22	1	24	7.234	3.855	174	93
Vesao	1	10	3	0	3	7.234	3.855	22	12
Wokaka	1	4	9	0	9	7.234	3.855	65	35
Wokulu	1	4	4	1	6	7.234	3.855	43	23
Wolikawo	1	8	22	1	24	7.234	3.855	174	93
Wonjava	1	3	4	0	4	7.234	3.855	29	15
Wosenge	1	7	7	0	7	7.234	3.855	51	27
Woteva	1	4	24	0	24	7.234	3.855	174	93
Wotolo	1	8	122	75	272	7.234	3.855	1,968	1,049
Wotutu	1	8	158	7	172	7.234	3.855	1,244	663
Wovia	1	8	123	25	173	7.234	3.855	1,251	667
Total			**27,326**	**3,498**	**34,322**			**254,604**	**138,761**

Table 6: Estimated population of the surveyed villages. **Explanations:** Settlement type = 1 = village style houses (mostly one family in one house) 2 = camp style houses (with up to six apartments per house), 3 = camps with village style houses. Houses and compounds in this table are those considered as functional.

Ethnic composition:

The data on the ethnic composition of the entire research region (table 7) and/or the different villages should be assessed bearing in mind that the information is based on interviews with village officials (chiefs & traditional councils) and therefore might be biased.[8]

Ethnic Group	N	%	**Ethnic Group**	**N**	**%**
Not Assessable	73,402	28.8	**Bikom**	1,167	0.5
Bakweri	54,576	21.4	**Ewondo**	1,064	0.4
Meta	14,338	5.6	**Douala**	1,017	0.4
Bamiliki	10,036	3.9	**Balong**	959	0.4
Banwah	9,977	3.9	**Eshimbi**	919	0.4
Nigerians	9,950	3.9	**Bamingi**	636	0.2
Ngie	8,318	3.3	**Oshe**	636	0.2
Bayangi	6,864	2.7	**Ndop**	482	0.2
Balondo	6,459	2.5	**Menchum**	474	0.2
Wum	6,205	2.4	**Babamki**	453	0.2
Ngwo	5,772	2.3	**Njari**	437	0.2
Bakossi	3,474	1.4	**Oku**	404	0.2
Menka	3,363	1.3	**Batibo**	373	0.1
Bomboko	2,849	1.1	**Ngikwa**	326	0.1
Mongamo	2,651	1.0	**Mundani**	297	0.1
Bali	2,556	1.0	**Bamukom**	286	0.1
Yamba	2,553	1.0	**Kom**	263	0.1
Mbo	2,460	1.0	**Mankon**	222	0.1
Bassa	2,200	0.9	**Mokili**	163	0.1
Nkambe	2,176	0.9	**Bangolan**	163	0.1
Ghanian	2,026	0.8	**Munchi**	154	0.1
Bamongo	1,942	0.8	**Kaka**	142	0.1
Mbembe	1,487	0.6	**Insugni**	138	0.1
Bafut	1,408	0.6	**Nso**	138	0.1
Bamumbu	1,398	0.5	**Beba**	129	0.1
Mukuru	1,355	0.5	**Bum**	104	0.0
Hausa	1,271	0.5	**Bafaw**	102	0.0
Akwaya	1,271	0.5	**Others (n≤100)**	613	
			Total	**254,604**	**100**

Table 7: The overall ethnic composition of the research region

Map 3 documents the autochthon-allochthon ratio at village level. It becomes obvious that the autochthon population is only dominant in uphill villages. The reasons for this disproportion arises from an ongoing immigration to the region, which is since colonial times resulting from job opportunities in the plantations and available fertile land at the slopes of Mt. Cameroon.

2.2. Livelihood

Food crop farming is the most important source for the livelihood of the population around Mt. Cameroon.[9]

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[8] The traditional setting requires a Bomboko or Bakweri chief - even in villages like Lylale, which do not have a single autochthon male inhabitant. This might also have led to an underestimation of the number of outsiders in the villages to favour the claim for Bakweri domination, since the Bakweri which dominate the traditional councils were the main respondents. To estimate overall figures, their estimate of the ethnic composition of their settlement was extrapolated on the basis of the estimated total settlement population. Due to that, the figures can only be considered as a rough estimate.

[9] Since the information are not based on a detailed household survey, but on estimations provided by the informants, they have to be perceived as secondary data. It can be expected that the informants – due to their composition (mostly elderly men) - underestimated the importance of activities carried out by women and crops planted, harvested and marketed by women as well as activities carried out by young men and/or settlers.

Source of income and subsistence

Based on the assumption, that the researchers are - as part of Mt. Cameroon Project - out to ban hunting and/or to identify hunters for future legal prosecution, the informants in a good number of villages tried to establish the view that they do neither trap nor hunt at all. Only after the intervention of the research supervisor, they agreed that they have at least some traps in their farms, but it can be expected that they still did not give a factual account of the level of hunting carried out in the villages, especially in the area around the Bomboko forest reserve. This might be the reason, why the figures for the importance of hunting and gathering for the livelihood are quite low. It could also be that the high pressure on the natural resources does no longer offer enough benefits to attract people to hunt and gather NTFPs at least in the dense populated areas. A third option, which was not supported by the informants, could be that conservation measures such as law enforcement etc. prohibit people to hunt and gather. Nevertheless, the data collected on the importance of hunting and gathering for the livelihood of the rural population are significant lower than those published earlier (SOWEDA 1998).

That farming is considered to contribute less than 50% to the overall livelihood (map 4) has to be seen in the light, that 8% of the overall population is living as labourers in plantation camps and are not in control of their production (table 8). Nevertheless, it is important to remember that a significant part of the livelihood – also reflected in table 9, which outlines the main occupations of the people assessed in the census - is not generated through productive work, but through petit trading, labour, etc. (map 5) and that nearly 50% of the population are due to the age distribution not contributing to the income of their families.

Source of livelihood	N	%
Farming	124,316	48.8
Trading	52,023	20.4
Labour	46,434	18.2
Fishing	18,451	7.2
Hunting	8,036	3.2
NTFP-Gathering	5,344	2.2
Total	**254,604**	**100**

Tab.8: Source of livelihood in people depending on it (in N and %)

Tab. 8 & 9 shows that the forest as direct income source is not very important for the overall population (Hunting and NTFP-Gathering = 5.4%; map 7), but the dependence on forests is related to the location of the village. Fishing occurs as major source of income only along the cost, since the mountainous nature of the research region does not offer a habitat for eatable fish species (map 6). While labour is the main source of income for the plantation camps, the main villages (Limbe, Muyuka, Mutengene and the settlements along the Lower Bolifamba-Buea road) are depending heavily on a combination of labour and trading (map 5).

Profession	Female	Male	Total
Pupil/Student	21.3	18.1	39.4
Farmer	15.7	11.3	27.0
Infant	5.0	3.5	8.5
Unskilled labourer	1.5	6.0	7.5
Skilled labourer	1.2	2.7	3.9
Business	2.5	1.2	3.7
Retired	0.1	2.1	2.2
Civil servant	0.7	1.3	2.0
Dependent	1.4	0.4	1.8
Apprentice	0.6	0.9	1.5
Applicant	0.4	0.6	1.0
Fisherfolk	0.0	0.8	0.8
Gatherer of NTFPs	0.4	0.3	0.7
Total	**50.8**	**49.2**	**100**

Tab.9: The profession of the people in the census' houses in %

Major farming system

Since the German colonial time, the area around Mt. Cameroon is dominated by plantations.[10] CDC (Cameroonian Development Cooperation), CTE (Cameroon Tea Estate) and private plantations dominate the landscape along the Mt. Cameroon ring road and 23 out of 131 settlements surveyed were plantation camps (see map 8), but have only 8% of the overall population. This stands in contrast to earlier surveys (Ardener 1960, Konings 1993) and could be a result of the decline of CDC.[11]

According to an MCP publication, CDC and CTE have leased around 60,000 ha, of which only 1/3 is covered with plantations, while 2/3 is utilised for small scale agriculture by plantation workers and the rural population (Forbes & Besong 2002). While CDC and CTE are cultivating in the research region mostly oil palms, rubber, bananas and tea, private plantations are cultivating cocoa, coffee, oil palms and plantains. 17.7% settlements are plantation camps and 9.2% of settlements were of the view that plantation and small scale farming are equally important. An assessment of the factual land use pattern of the region, indicating the surface area under cultivation, is scheduled to take place in 2004 within the elaboration of village development plans.

Major crops produced

Based on the livelihood approach of the research, only crops with relevance for the livelihood of the local population were assessed. Therefore crops, which were grown in the major plantations of CDC are not included here.

Crops	N	%	Crops	N	%
Plantain	45,128	17.73	**Paw-Paw**	2,423	0.95
Cocoyam	32,364	12.71	**Beans**	1,869	0.73
Cassava	20,534	8.07	**Sweet Yam**	1,677	0.66
Yams	17,921	7.04	**Ginger**	1,063	0.42
Maize	16,525	6.49	**Coconut**	696	0.27
Cocoa	15,527	6.10	**Soya Beans**	387	0.15

[10] The names of some settlements and plantations still reflect their German origin (Rechts Fluss Camp, Soden Camp, Saxenhof, etc.).

[11] One indicator in this survey is the high number of broken down houses in several camps (see table 2) and the fact that a significant part of the inhabitants of the CDC camps are earning their living from others sources than CDC.

Crops	N	%	Crops	N	%
Colocasia	14,859	5.84	**Apples**	366	0.14
Vegetables	12,346	4.85	**Guava**	355	0.14
Coffee	10,536	4.14	**Carrots**	238	0.09
Oil Palm	8,891	3.49	**Grape**	222	0.09
Banana	8,755	3.44	**Lemon**	114	0.04
Pear	5,055	1.99	**Sugar Cane**	106	0.04
Groundnuts	4,532	1.78	**Water Melon**	81	0.03
Pineapple	4,336	1.70	**Rubber**	76	0.03
Plums	3,939	1.55	**Flowers**	8	0.00
Pepper	3,704	1.45	**Cabbage**	7	0.00
Potatoes	3,686	1.45	**Eru**	7	0.00
Egusi	3,612	1.42	**Onion**	5	0.00
Mango	3,520	1.38	**Njansa**	4	0.00
Okro	3,264	1.28	**Bush Mango**	2	0.00
Oranges	3,185	1.25	**Cola nut**	1	0.00
Tomatoes	2,671	1.05	**Cassue nut**	1	0.00
			Total	**254,604**	**100**

Tab.10: The relevance of the various agricultural products shown by the number of people depending on them

Food crops such as plantains, cocoyam and cassava are more important than cash crops such as cacao and coffee, but one has to remember that the Mt. Cameroon region is producing most of the food consumed in Douala. Several trucks are exporting such food crops every day to Douala and from there to Gabon and other countries with insufficient food crop production.

Special economic features

On average the surveyed settlements are engaged in 3.65±1.29 alternative income generating activities. The magnitude of these activities was not assessed, but in none of the research settlement did the informants consider any of these activities as main source of livelihoods (their spatial distribution is documented in the maps 9-12). The idea behind an assessment of other income generating activities arises from the experience, that new income sources are introducing themselves in all suitable villages earlier or later. ICDPs can try to promote these existing economic features such as beekeeping, livestock rearing and NTFP-cultivation as substitute for activities such as hunting, logging and NTFP-harvesting, which are considered as having negative impacts on the biodiversity, while the introduction of completely new activities have failed again and again.

Number of additional economic activities	Frequency	
	N	%
0	1	0.76
1	7	5.34
2	15	11.45
3	35	26.72
4	45	34.36
5	17	12.98
6	10	7.63
7	1	0.76
Total	**131**	**100**

Tab.11: Number of additional economic activities per settlement

Table 11 & 12 make clear, that beside of the various forms of livestock rearing only beekeeping (an activity, which was promoted by MCP), cassava processing and fuel wood harvesting have any relevance for the rural population.

Additional sources of income	N	Occurrences in survey
Other livestock rearing	121	92.37
Poultry	115	87.79
Piggery	98	74.81
Fuel wood harvesting	57	43.51
Beekeeping	43	32.82
Cassava processing	33	25.18
Logging	5	3.82
Snail Farming	1	0.75
Mushroom cultivation	1	0.75
Total	**474**	

Tab.12: The occurrence of additional sources of income

Marketing

Muea was considered by all respondents as main food crop market in the region, but Mutengene has more market stands. The assessment focused on the existing marketing infrastructure at settlement level (table 13) and map 13 documents the spatial distribution of markets. As indicator for the magnitude of marketing activities, the number of market stands (semi-permanent or permanent) was chosen. The extensive road network in the region and the existence of markets in remote areas[12] seems to facilitate the easy transportation of farm products from the farms to their customers in the main villages of the region and Douala, and via boat to Nigeria and Equatorial Guinea.

Settlement	Nbr. of market days per week	Number of market stands	Settlement	Nbr. of market days per week	Number of market stands
Mutengene	6	625	Tole camp	2	30
Lower Bolifamba	4	490	Bwiuku	2	25
Buea	3	350	Botaland	2	15
Muyuka	2	570	Batoke	2	12
Great Soppo	2	560	Bonjongo	2	10
Muea	2	450	Mautu	2	8
Limbe	2	410	Bafia-Muyuka	1	78
Ekona Mbenge	2	241	Ikata	1	30
Bonadikombo	2	62	Lykoko	1	20
Likoko Membea	2	53	Bova Bomboko	1	15
Small Soppo Wovila	2	47	Mokindi	1	10
Munyenge	2	44	Ebie	1	10
Ngeme	2	37	Muyange Ma	1	6
Small Soppo Woganga	2	35	Bobende	1	4
Bokwaongo	2	30	**Total**		**3.826**

Tab.13: Frequency and size of markets in the research region

[12] It has to mentioned, that cash crops (palm oil, cocoa and coffee) and the major food crop (plantains) are sold outside market infrastructures.

2.3. Social infrastructure

Education

Earlier surveys have documented, that the study region has a better educational infrastructure that the Cameroonian average (SOWEDA 1998) and our overall assessment supports this finding (tab. 14).[13] Nevertheless, documents the spatial analysis (maps 14, 15 & 16) that these schools are not equally distributed in the region and that in the Bomboko forest region, children do not have such a good access to education as in Limbe and Buea.

Type of School	Frequency		Enrolment						Teachers n	Average Teacher-Pupil Ration[14]
			Boys		Girls		N Total			
	N	%	n	%	n	%				
Kindergarten	9	3.5	165	40.4	243	59.6	408	0.5	21	20.00±16.04
Nursery	61	23.5	2,293	44.4	2,877	55.6	5,170	5.9	183	
Primary	131	50.6	23,175	50.1	23,117	49.9	46,292	52.7	1,082	47.21±35.40
Secondary	31	12.0	10,534	48.1	11,379	51.9	21,913	24.9	1,111	18.78±12.23
Vocational/	26	10.0	3,827	56.3	2,966	43.7	6,793	7.7	438	
University	1	0.4	3,550	48.8	3,732	51.2	7,282	8.3	226	
Total	**259**	**100**	**43,544**	**49.6**	**44,314**	**50.4**	**87,858**	100	**3,061**	**36.13±33.91**

Tab.14: The overall enrolment and the average teacher-pupil ratio ± STD

The limited data on the overall population does not support any judgement of the enrolment ratio, but it was said that most children in the research region are attending school at least for some years. The secondary enrolment is much lower than the primary enrolment and nearly twice as many pupils are attending primary education than secondary education (secondary and technical). Primary schools are available for most children in walking distance (map 15), while all other education facilities are limited to the major villages and towns in the region (map 16). The average teacher-pupil ratio seems satisfactory, especially in secondary schools, where less than 20 students are instructed by one teacher. On the contrary, the availability of classrooms is quite limited with more than 50 pupils per classroom (in secondary schools even more than 60, table 15). Also the state of the buildings gives reason for concern: 52 education facilities do not have classrooms at all (3 Kindergarten, 20 nursery, 23 primary, 4 secondary and 2 technical schools) and especially the standard of nursery and primary infrastructure is quite low.

Type of school	Classrooms n	Average Classroom-pupil Ratio[15]	State[16]
Kindergarten	14	23.14+11.85	61.11±46,96
Nursery	113	40.60+37.15	53.69±38.69
Primary	830	57.71+49.82	58.97±35.64
Secondary	336	60.82+44.74	77.42±28.40
Vocational/Technical	188		66.35±32.36
University	23		
Total	**1,504**	**51.59+50.75**	**60.91±36.16**

Tab.15: The infrastructure of education facilities

[13] In assessing the educational infrastructure it was agreed, that the situation on the ground is considered as more accurate, than the picture resolving from official MINEDUC reports. It was also decided to exclude all non-permanent solutions: a governmental school run solemnly by teachers paid by the PTA (parents-teachers association) in the community hall was assessed as having no teacher and no classroom.

[14] Schools without teachers were not considered. ANOVA F=9.25 p=0.000.

[15] Schools without classrooms were not considered. ANOVA F=7.12 p=0.000.

[16] The averages were computed utilising a scale (Good = 100%, Fair = 75%, In need of repair = 50%, Bad or no building =0%). ANOVA F=2.26, p=0.049.

More than half of the schools in the region are run by private institution and the various missions. They are especially involved in the management of kindergartens and secondary schools (tab. 16).

Type of school	Community	Government	Mission	Private	Total
Kindergarten	0.4	7.7	3.5	12.0	23.6
Nursery	0.0	1.2	0.4	1.9	3.5
Primary	0.8	24.7	15.4	9.7	50.6
Secondary	0.0	5.0	2.3	4.6	12.0
Vocational/Technical	0.4	5.4	0.8	3.5	10.0
University	0.0	0.4	0.0	0.0	0.4
Total	**1.5**	**44.4**	**22.4**	**31.7**	**100**

Tab.16: The operating bodies of the different schools in %

Private schools have more teachers and more classrooms per child and the standard of infrastructure is also better than in governmental schools (tab. 17). Mission schools offer the best infrastructure, while they have even more pupils per teacher than any other school.

Owner	N	Average Teacher-pupil Ratio[17]	Average Classroom-Pupil Ration[18]	State[19]
Community	4	29.50±5.20	21.06±11.40	
Government	115	43.77±39.36	62.84±61.72	59.57±37.11
Mission	58	46.81±35.41	60.63±46.55	66.81±31.20
Private	82	18.38±11.19	26.86±14.95	60.98±37.29
Total	**259**	**36.13±33.91**	**51.58±50.75**	**60.91±36.16**

Tab.17: The performance of the different management structures of educational infrastructure

Health services

Due to the fact, that the existing detailed survey of health infrastructure for the South-West Province does not provide data at village or settlement level, but remain on the level of health districts (which are different from all other administrative structures in Cameroon) (GTZ-Santé 2003), new data were gathered within the research settlements. In general, the overall number of structures and beds seems to be sufficient. Also the state of most buildings is fair, but the spatial analysis (map 17) documents that most functional health facilities are concentrated in the bigger villages. Reasons given were that health services and their staff are depending on cash payment of their patients and that a rural health centre can hardly support any trained staff. Due to the high number of 'towns', which have a good number of wealthy inhabitants, the research region has a significant higher number of physicians (19 per 100,000 people) than the overall country (7 per 100,000 people; UNDP 2002). The number of medical staff available in the centres of the region might even increase in future, because the reconstruction of the general hospital in Buea – which was ongoing during the research – might result in an increase in their staff-enrolment. In the rural area it is not the absence or poor standard of infrastructures that hampers a better access to treatment, but the inadequate staff situation (tab.18 e.g. Bomboko forest reserve area).

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17 Schools without classrooms were not considered. ANOVA F=12.96 p=0.000.

18 Schools without teachers were not considered. ANOVA F=7.73 p=0.000.

19 The averages were computed utilising a scale (Good = 100%, Fair = 75%, In need of repair = 50%, Bad or no building =0%). ANOVA F=3.03, p=0.030.

Type of health service	N	Number of beds	Staff				State				
			Doctors	Nurses	Others	Total	Good	Fair	In need of repair	Bad	Average ± STD[20]
Hospital	14	647	36	182	38	256	3	10	1	0	76.79±18.25
Health Centre	29	417	8	158	69	235	13	13	2	1	80.17±25.34
1st Aid Post	21	77	4	52	13	69	1	14	6	0	61.90±24.52
Maternity	1	19	1	8	1	10	0	1	0	0	-
Health Post	5	2	0	9	0	9	0	3	2	0	55.00±27.39
Total	**70**	**1162**	**49**	**409**	**121**	**579**	**17**	**41**	**11**	**1**	**72.14±25.02**
Number of people per unit	3637	219	5196	623	2104	440					

Tab.18: Number of health service infrastructures and their equipments

Health centres buildings are mostly in good conditions, but do not have much staff and are often purely equipped. International donors have invested over the last years in the renovation of health infrastructure, but have not provided funds to employ people to run them. The problems in the governmental health care system has resulted in a high number of private health facilities (tab. 19), but their staff situation and infrastructure does not differ from state owned or mission hospitals.

Type of health institute	Government	Community	Mission	Private %	Total %
Hospital	7.1	0	1.4	11.4	20.0
Health Centre	21.4	0	7.1	12.9	41.4
1st Aid Post	0	2.9	0	27.1	30.0
Maternity home	0	0	0	1.4	1.4
Health Post	2.9	1.4	0	2.9	7.1
Total	**31.4**	**4.3**	**8.6**	**55.7**	**100**

Tab 19: Managing organisation of health facilities in the region in % (CDC is considered as private owner).

Apart from formal health facilities offer in most settlements traditional healers their services. Drugstores and pharmacies are only available in the centres, while the remote areas depend on mobile drug sellers (tab.20).

Informal health infrastructure	Frequency	Number of people per unit
Pro-Pharmacy	14	18,186
Traditional Healer	419	608
Drugstore	147	1,732

Tab.20: The frequency of informal health infrastructures

Water supply

The team only assessed the availability of water, not the quality of the water provided.

About 9.2% of the surveyed settlements did not have any water supply at all (Bavenga, Bonganjo, Bonjia, Ekona Lelu, Ekonjo, Liola Buea, Makoko Palm Estate, Masuma, Mundame, Upper Boando, Vesao and Wokulu) and have to trek in some cases up to 4 hours to fetch water. About 61.1% of the other settlements have at least one source of water, 26.7% two and 3.0% three water sources. Some water sources do not provide water throughout the year. The sources considered to be good or fair are operational throughout the year, while those in need of repair are quite often dry, some others, considered by the population as bad, hardly ever function. On average are pipe-born water systems considered by the respondents as worst and streams as best source of water (tab. 21).

[20] The averages were computed utilising a scale (Good = 100%, Fair = 75%, In need of repair = 50%, Bad or no building =0%). ANOVA F=2.547, p=0.048.

Type	N	Good	Faire	In need of repair	Bad	Average ± STD[21]
Pipe-born water	92	8	48	26	10	54.67±31.38
Spring	40	9	21	2	8	63.13±35.80
Stream/River	24	5	14	4	1	68.75±27.83
Well with pump	2	0	2	0	0	-
Well without pump	4	1	2	0	1	-
Total	**162**	**23**	**87**	**32**	**20**	**59.32±32.33**

Tab. 21: The various water sources and their perception

Water committees are considered as the best manager of water sources, while the former state-own SNEC is perceived worse (tab. 22). Asked about the reason, the respondents stated, that SNEC does not react to customers complains and do not reinvest their income from public consumption. Water is quite a critical source in the mountainous research region (Page: 2000), since permanent streams and rivers are quite rare and pipe born water not equally available throughout the region (map 18).

Type	N	Good	Faire	In need of repair	Bad	Average ± STD[22]
Community	99	16	51	19	13	59.60±33.06
Individual	31	5	17	5	4	61.29±32.81
Nobody	4	0	2	0	2	-
SNEC	20	0	13	6	1	55.26±27.10
Water committee	8	2	4	2	0	68.75±29.12
Total	**162**	**23**	**87**	**32**	**20**	**59.31±32.33**

Tab.22: The various water source management units and their perception

Electricity

About 51.1% of the settlements are connected to the national grid (tab. 23). The electricity supply follows two main lines along the Mutengene-Limbe-Bakingili and the Mutengene-Buea-Muyuka roads. Nevertheless, some villages and camps along the lines were not connected to the national grid (SONEL), because the inhabitants were unable to pay for this connection (see map 19). In some cases, the inhabitants 'tapped' electricity from somebody in a neighbouring settlement, but this system only works as long as no SONEL control team is assessing the area. Due to that, the research team did not consider 'tapped' electricity as connection to the national grid.

Type of electric supply	Frequency	
	N	%
National Grid (SONEL)	67	51.14
Generator owned by a company	11	8.40
Personal generator	20	15.27
No electricity at all	33	25.19
Total	**131**	**100**

Tab.23: Electric supply available in settlements

Access to governmental services

The centralised governmental services results in the fact, that ministries like MINEF (with more than 10,000 civil servants, map 20) and MINAGRI (with around 14,000 civil servants, map 21) are not present outside their provincial (Buea), divisional

[21] The averages were computed utilising a scale (Good = 100%, Fair = 75%, In need of repair = 50%, Bad or no building =0%). ANOVA F=2.431, p=0.032.

[22] The averages were computed utilising a scale (Good = 100%, Fair = 75%, In need of repair = 50%, Bad or no building =0%). ANOVA F=2.431, p=0.032.

(Limbe) and sub-divisional delegations (Muyuka, Buea).[23] This may change in future, since several national programmes (PNVRA, PSFE, PNDP, etc.) within the PRSP-process are promoting the (re)establishment of decentralised extension services of MINAGRI, MINEF, MINEPIA and MINEPAT. MINAGRI has quite a good number of extension posts in the settlements of the research area, but hardly any of these posts has an official building. MINEF has only one forestry post in the entire region, which makes it difficult for MINEF to carry out its duty (tab. 24).

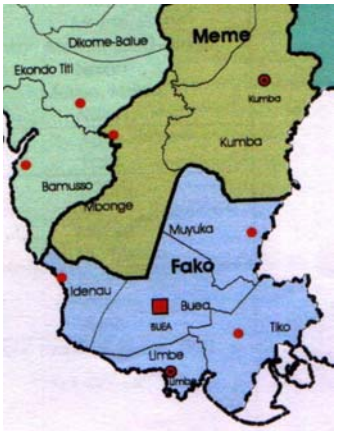
Type of administrative structure	N	Number of staff	Good	Faire	In need of repair	Bad or no building
MINAGRI Prov. Delegation	1	20	0	1	0	0
MINAGRI Divisional Delegation	1	5	0	1	0	0
MINAGRI Subdiv. Delegation	1	2	0	1	0	0
MINAGRI Extension Post	12	12	1	1	0	10
Veterinary	3	4	0	0	0	3
Community Development	1	2	0	1	0	0
MINEF Prov. Delegation	1	10	0	1	0	0
MINEF Divisional Delegation	1	4	0	1	0	0
MINEF Subdiv. Delegation	1	2	0	1	0	0
Forestry Post	1	3	0	1	0	0
Police Station	7	121	1	3	1	2
Post Office	4	34	0	2	1	1
Prison	2	20	0	1	1	0
Military Base	1	300	0	1	0	0
CRTV	1	92	1	0	0	0
IRGM (Vulcan surveys)	1	16	0	1	0	0
Total	**39**	**647**	**3**	**17**	**3**	**16**

Tab.24: The various administrative structures in the research region

Administrative setting

While at the present stage all decisions are in the hands of the central administration in Yaoundé and their local representatives (Governor, SDO, DO), the ongoing decentralisation in Cameroon might increase the importance of the lowest administrative structure (councils, tab. 25).

Division	Council	Number of villages in the survey region
Fako	Buea Rural Council	59
Fako	Limbe Urban Council	21
Fako	Muyuka Rural Council	20
Meme	Mbonge Rural Council	18
Fako	Idenau Rural Council	15
Fako	Tiko Rural Council	3
Two Divisions	Six Councils	136 villages



Tab.25: The administrative setting of the research region

[23] We did not assess those services, which do not exist in the field at all (such as MINEPIA, MINEPAT, MINAS, etc.) but those, which have at least one or two extension posts such as MINEF and MINAGRI.

Common initiative groups

26 villages (19.1%) have common initiative groups, which represent the civil society part of the pluralistic structure sustaining the intervention of MCP. The report 'Evaluation of elements of the pluralistic structure by partner institutions/organisations of the Mt. Cameroon Project' (MCP 2002) provides a detailed analysis of their sustainability; their ability to act without external support and in accordance with the concept of sustainable development, outlined in the participatory biodiversity conservation strategy for the Mt. Cameroon region.

2.4. Relevance for biodiversity conservation and relation with MCP

The relevance for biodiversity conservation was assessed only for the Bomboko forest reserve area through focus group discussions. It also has to be taken into consideration, that the data was gathered in a rapid assessment (without much time to establish mutual confidence) and within the setting of a conservation project (using a MCP vehicle, a MINEF authorisation, etc.). This all might have reduced the willingness of the respondents to confess, that villagers break the law by hunting, gathering and/or farming within the forest reserve. Nevertheless, 31 settlements (23.7%) were of the view, that some of their inhabitants are utilising the land demarcated as forest reserve (tab. 26, see map 22). 11 of them have traditional rights to hunt, gather, fish and farm within the Bomboko forest reserve (Decree Bomboko Forest Reserve).

Settlement utilising the Bomboko FR	**Traditional rights to do so**	**Settlement utilising the Bomboko FR**	**Traditional rights to do so**
Bavenga		**Kuke Kumbu**	X
Big Kotto	X	**Likoko Membea**	
Bokosso	X	**Likombe**	
Bokwaongo		**Lykoko**	
Bomboko Forest Camp		**Lylale Leowo**	
Bonakanda		**Makoko Palm Estate**	
Bova 2		**Mapanja**	
Bova Bomboko	X	**Masone**	
Boviongo	X	**Mundongo**	X
Boviongo 2	X	**Munyenge**	
Bwassa		**Muyange Ma Mbonje**	
Ebie	X	**Rechts Fluss Camp**	
Efolofo	X	**Scipio Camp**	
Ekona Lelu		**Small Kotto**	X
Ikata		**Soden Camp**	
Katakata	X	**31 Settlements**	**10 Settlements**

Tab. 26: Utilisation of land protected as Bomboko forest reserve[24]

The 31 settlements of the Bomboko forest reserve region with an estimated overall population of 35,459 people (13.9% of the overall population) are significantly more dependent on the forest than other settlements. While they are depending on average to 14.39±6.85% on hunting and gathering, the other villages only depend to 5.66±5.64 on these activities.[25] It can be assumed, that they are even more dependent on the reserve, since quite some of their agricultural areas are located in the reserve.

[24] It has to be mentioned that 4 of the settlements, which refused cooperation (Bomana Bomboko, Mweli, Bomboko Bush Farm and Mondongo 2) might also use the Bomboko forest reserve as source of their livelihood.

[25] To establish averages, the following hunting villages outside the Bomboko forest reserve area were excluded (Bonganjo, Bonjia, Ekonjo, Etone, Ewongo, Upper Boando, Upper Bolifamba, Woteva) ANOVA F=48.37 p=0.000.

Those villages have significantly less social infrastructure than the other settlements in the area: While the other settlements have on average 2.26±2.15 schools per settlement, the Bomboko reserve area settlements have on average 1.06±1.01 schools.[26] The same is true for the health infrastructure: While 57% of the settlements outside the area have health infrastructures including all hospitals, only 42% of the settlements in the Bomboko area have health services at village level.

With regards to water supply, 79% of the other settlements have pipe born water in the village, only 42% of the settlements depending on the natural resources of the Bomboko forest reserve have these facilities. Concerning electricity the picture is similar: While 61% of the other settlements are connected to the national grid (SONEL), only 19% of the Bomboko forest reserve area settlements have access to permanent electric supply.

MCP targeted their work towards population that is utilising the natural resources of the Bomboko forest reserve consequently are 26 of the 54 settlements, which mentioned in their interviews past activities carried out by MCP at village level, are located in the Bomboko forest reserve area. In other words, MCP has worked with 83.9% of the Bomboko forest reserve area settlements and with 28% of the other settlements. The average number of activities per village (tab. 27) underlines this finding and shows that MCP focused their activities on the Bomboko forest reserve area (see also map 23).

Using the Bomboko forest reserve	Average + STD number of activities
Yes	3.5±1.9
No	2.5±1.6
Total	**2.98±1.81**

Tab. 27: Frequency of different activities carried out by MCP in the villages[27]

Whether the activities outlined in table 28 were successful instruments to compensate the rural population for their income losses resulting from the protection of the Bomboko forest reserve was not assessed, but it has to be mentioned that none of these activities were considered as main source of income.

Activity	N	Occurrence in visited settle-ments in %	Activity	N	Occurrence in visited settle-ments in %
Introduction of sustainable beekeeping	33	61.11	**Introduction of soap making**	4	7.41
Introduction of sustainable wildlife	18	33.33	**Wildlife Domestication**	3	5.56
General awareness raising	16	29.63	**Joint Forest Reserve**	3	5.56
Introduction of sustainable Prunus	14	25.93	**Introduction of gender balance**	3	5.56
Introduction of community forest	14	25.93	**Eru cultivation**	3	5.56
Facilitation of group formation	13	24.07	**Logistics/Infrastructural**	2	3.70
Livestock Rearing	8	14.81	**Improved Farming**	2	3.70
Introduction of Eco-tourism	7	12.96	**Joint control activities**	1	1.85
Data Collection	6	11.11	**Fuel Wood Production**	1	1.85
Introduction of mushroom cultivation	5	9.26	**Bio-monitoring**	1	1.85
Reforestation	4	7.41	**Total**	**161**	
			Wildlife Domestication	3	5.56

Tab. 27: MCP activities in the visited 54 villages

[26] To establish averages, villages with more than 20 schools were excluded. ANOVA: F=3.121 p=0.046.
[27] ANOVA: F=4.123 p=0.021.

4. Bibliography

Ardener, E. & Warmington, W.A.1960. Plantations and villages in the Cameroons. London: Oxford University Press.

Conservation International 2003. (http://www.biodiversityhotspots.org/xp/Hotspots)

ECAM 1(1995) 2(2002) Enquête camerounaise auprès des ménages – Unpublished data.

Forbes, A. & Besong, J. 2002. Participatory biodiversity strategy for Mt. Cameroon: Striving to demonstrate a 'win-win' situation for biodiversity and poverty reduction. Limbe: MCBCC.

Ghimire, K. B. & Pimbert, M. P. (Eds.) 1997. Social Change and Conservation - Environmental politics and impacts of National Park and Protected Areas. London: Earthscan.

GTZ-Santé 2003. Health Infrastructure in the South West Province of Cameroon. GTZ-Consultancy Report.

Konings, P. 1993. Labour resistance in Cameroon: Managerial strategies & labour resistance in the agro-industrial plantations of the Cameroon Development Corporation. London: James Currey.

MCP 2002. Evaluation of elements of the pluralistic structure by partner institutions organisations of the Mt. Cameroon Project. Workshop Report. Buea.

MINEPAT 2001. South west regional master plan for sustainable development. Limbe.

Page, Ben 1999. A priceless commodity: The production of water in Anglophone Cameroon 1916-1999 Oxford: PhD-Thesis.

Schmidt-Soltau, K. 2001. Human Activities in and around the Takamanda Forest Reserve: Socio-economic Baseline Survey. GTZ-Consultancy report.

Sharpe, B. 1997 First the Forest: Conservation, community and participation in South-West Cameroon. In: Africa 1:.25-45

SOWEDA 1998. Basic socio-economic indicators of the south west province. Yoaundé.

Statistisches Bundesamt 1992. Länderbericht Kamerun 1992. Wiesbaden: Metzler & Poeschel.

UNDP 2002. Human development report 2002. Deepening democracy in a fragmented world. New York: UNDP-Press.

Wells, M. & Brandon, K. & Hannah, L. 1990. People and Parks: Linking Protected area management with Local Communities. Washington: World Bank.

Maps

Overview Survey Villages and Roads

REPUBLIC OF CAMEROON

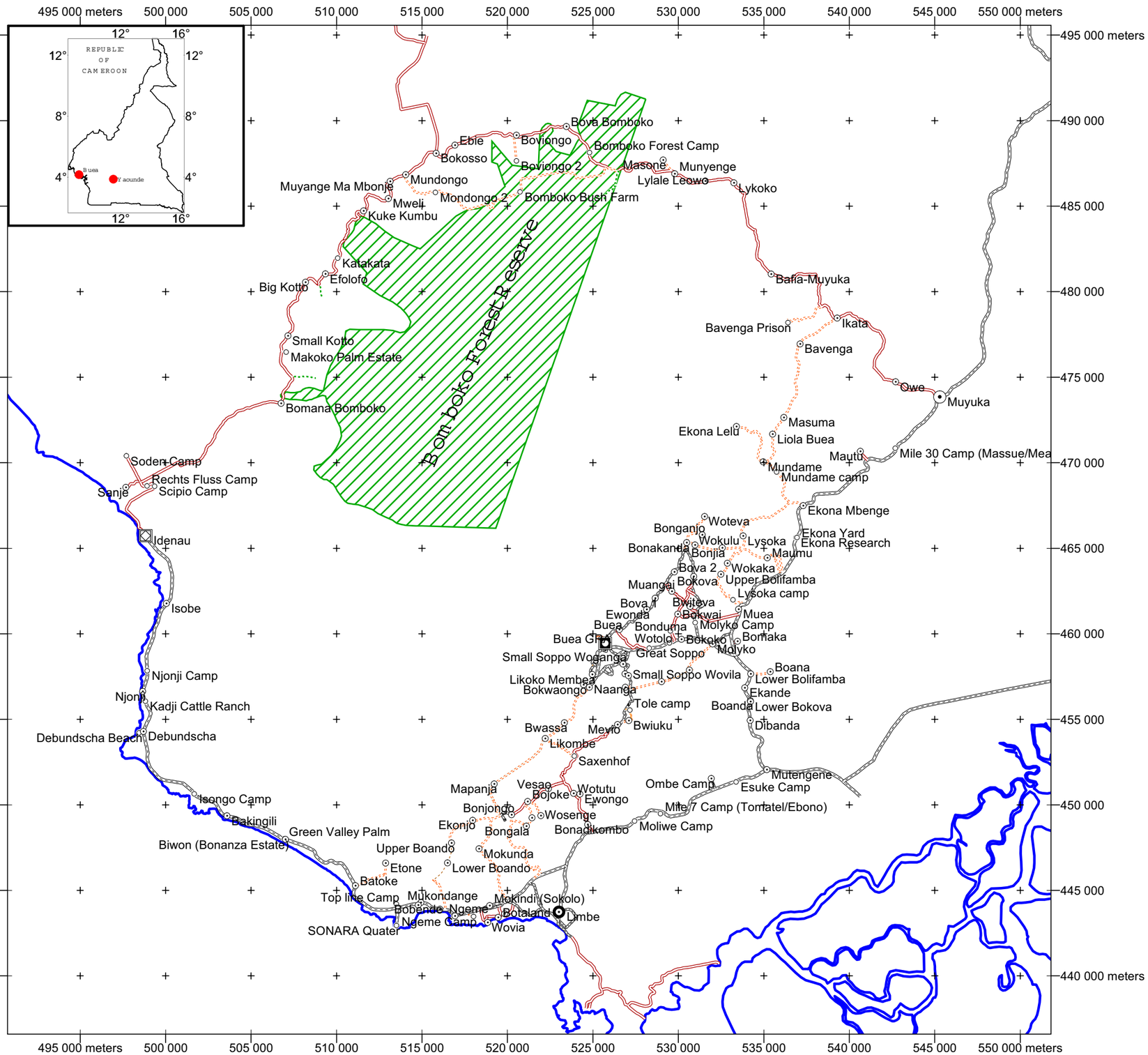
MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

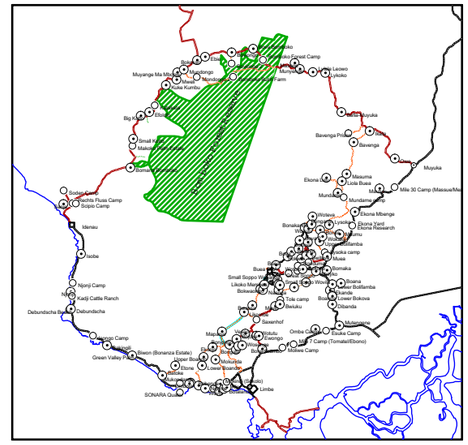
Provincial Delegation of MINEPAT

South West Province

Mount Cameroon Project

OVERVIEW SURVEY VILLAGES and ROADS





Legend

- Provincial Headquarter
- Divisional Headquarter
- Subdivisional Headquarter
- District
- Village
- Quarter
- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve

0 5 10 Kilometers

Scale: 1:250.000

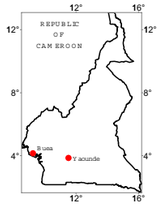
Projection: UTM Zone 32

Ellipsoide: WGS84

German Technical Cooperation (GTZ) GmbH

Data Source: GIS SW CAMEROON

Demography



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Etone
Biwon (Bonanza Estate)
Batoke
Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
Bulu
Boana
Bokwaongo
Lower Bolifamba
Naanga
Wolikawo
Small Soppo Likoko
Ekande
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Vesao
Ombe Camp
Mapanja
Wotutu
Esuke Camp
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2.5 5 Kilometers

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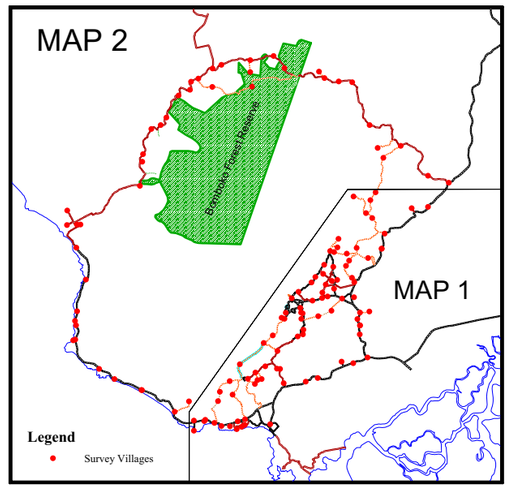
DEMOGRAPHY



Legend

Population

- No data
- 1 - 100
- 101 - 500
- 501 - 1000
- 1001 - 4999
- 5000 - 10000
- 10001 - 20000
- 20001 - 50000

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

ETHNIC COMPOSITION

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters
465 000
460 000
455 000
450 000
445 000 meters

MAP 2

MAP 1

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
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Etone
Batoke

Ekona Lelu
Masuma
Liola Buea
Mundame
Mundame camp
Mautu
Mile 30 Camp
Ekona Mbenge
Ekona Yard
Ekona Research
Woteva
Bonakanda
Bonganjo
Lysoka
Wokulu
Bonjia
Maumu
Wokaka
Upper Bolifamba
Bova 2
Bokova
Muangai
Lysoka camp
Bova
Ewonda
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Bomaka
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Naanga
Wolikawo
Small Soppo Likoko
Ekande
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
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Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2,5 5 Kilometers

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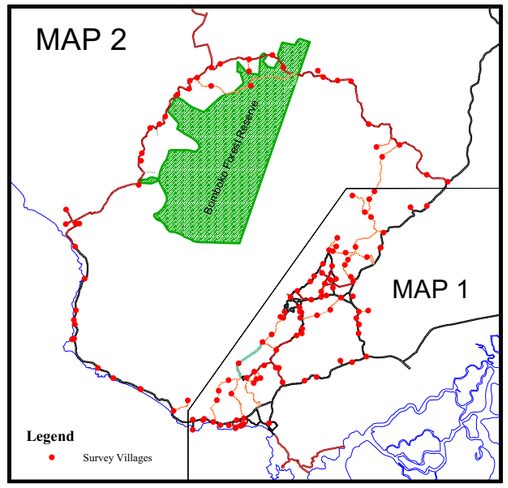
ETHNIC COMPOSITION



Legend

Autochthon Population in Percent

- No data or not accessible
- 0.00 - 9.99
- 10.00 - 24.99
- 25.00 - 49.99
- 50.00 - 74.99
- 75.00 - 100.00

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

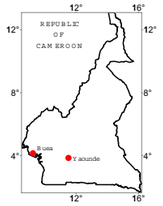
0 2,5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

SOURCE OF INCOME - FARMING



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Biwon (Bonanza Estate)
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Batoke
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Ekona Lelu
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Liola Buea
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Mundame
Mundame camp
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Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
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Bokwaongo
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Naanga
Small Soppo Likoko
Ekande
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
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Bojoke
Ewongo
Wosenge
Moliwe Camp
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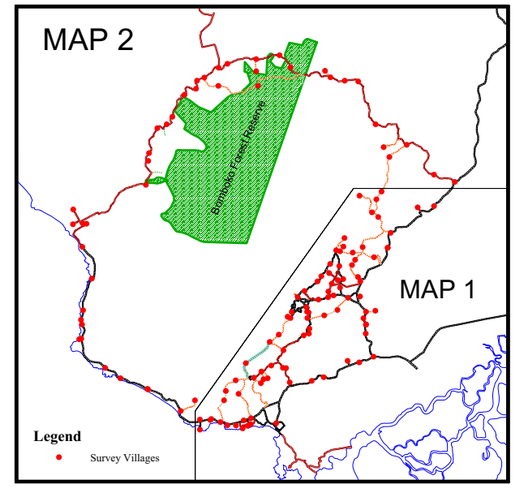
South West Province

Mount Cameroon Project

SOURCE OF INCOME FARMING



Legend

Farming

- No data
- 0.0 % - 9.9 %
- 10.0 % - 24.9 %
- 25.0 % - 49.9 %
- 50.0 % - 74.9 %
- 75.0 % - 100.0 %

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

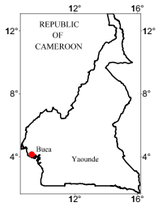
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

SOURCE OF INCOME - TRADING AND LABOUR



MAP 2

MAP 1

515 000 meters
520 000
525 000
530 000
535 000
540 000 meters
470 000 meters
465 000
460 000
455 000
450 000
445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Bafia-Muyuka
Efolofo
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Etone
Biwon (Bonanza Estate)
Batoke
Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Wokulu
Bonjia
Maumu
Wokaka
Bova 2
Bokova
Upper Bolifamba
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Bulu
Likoko Membea
Boana
Bokwaongo
Lower Bolifamba
Naanga
Small Soppo Likoko
Ekande
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwiuku
Bwassa
Mevio
Dibanda
Likombe
Saxenhof
Mutengene
Vesao
Ombe Camp
Mapanja
Esuke Camp
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Karata Camp
Mukondange
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2,5 5 Kilometers

REPUBLIC OF CAMEROON

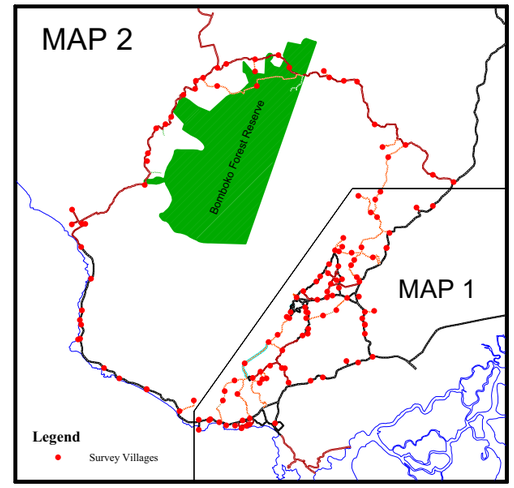
MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT

South West Province

Mount Cameroon Project

SOURCE OF INCOME TRADING AND LABOUR



Legend

Trading and Labour

- No data
- 0.0 % - 9.9 %
- 10.0 % - 24.9 %
- 25.0 % - 49.9 %
- 50.0 % - 74.9 %
- 75.0 % - 100.0 %

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

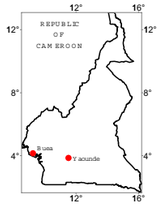
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

SOURCE OF INCOME - HUNTING AND GATHERING



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonakanda
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
Bulu
Boana
Bokwaongo
Lower Bolifamba
Naanga
Small Soppo Likoko
Ekande
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Vesao
Ombe Camp
Mapanja
Wotutu
Esuke Camp
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Mokindi (Sokolo)
Limbe
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2.5 5 Kilometers

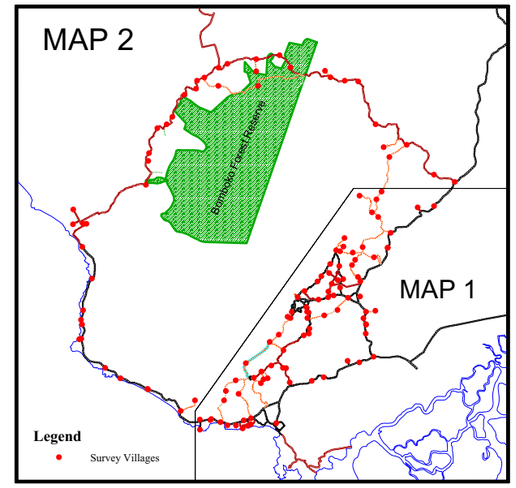
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

SOURCE OF INCOME HUNTING AND GATHERING



Legend

Hunting and Gathering

- No data
- 0.0 %
- 0.1 % - 4.9 %
- 5.0 % - 9.9 %
- 10.0 % - 24.9 %
- 25.0 % - 49.9 %
- > 50.0 %

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

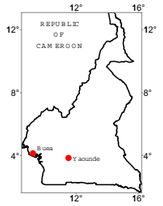
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

MAJOR FARMING SYSTEMS



515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters
465 000
460 000
455 000
450 000
445 000 meters

MAP 2

MAP 1

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Munyenge
Lylale Leowo Lykoko
Mondongo 2
Bomboko Bush Farm
Kuke Kumbu
Katakata
Bafia-Muyuka
Efolofo
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji
Njonji Camp
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonakanda
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Bulu
Boana
Lower Bolifamba
Likoko Membea
Bokwaongo
Naanga
Wolikawo
Small Soppo Likoko
Ekande
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Mile 7 Camp (Tomatel/Ebono)
Ekonjo
Bongala
Wonjava
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sakolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

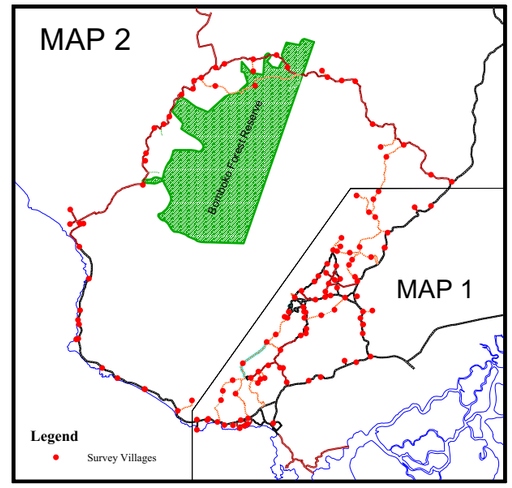
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

MAJOR FARMING SYSTEMS



Legend

Farming Systems

- Small scale farming
- Small scale farming and Plantations
- No data

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

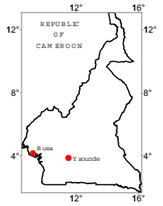
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

ALTERNATIVE SOURCE OF INCOME- OTHER ALTERNATIVE SOURCES OF INCOME



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Bulu
Likoko Membea
Boana
Lower Bolifamba
Bokwaongo
Small Soppo Likoko
Ekande
Naanga
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Mile 7 Camp (Tomatel/Ebono)
Ekonjo
Bongala
Wonjava
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

REPUBLIC OF CAMEROON

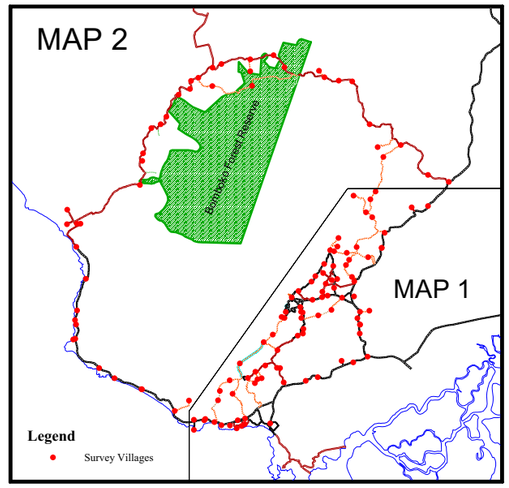
MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

ALTERNATIVE SOURCE OF INCOME

OTHER ALTERNATIVE SOURCES OF INCOME



Legend

No data
No
Yes

Topography

Main tared Road
Secondary tared Road
Main dirt Road
Secondary dirt Road
Secondary Forest Road
Principale footpath
Shoreline
Bomboko Forest Reserve
Ewongo Settlement

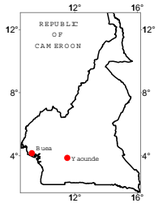
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

ALTERNATIVE SOURCE OF INCOME - BEEKEEPING



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Munyenge
Lylale Leowo Lykoko
Mondongo 2
Bomboko Bush Farm
Kuke Kumbu
Katakata
Bafia-Muyuka
Efolofo
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji
Njonji Camp
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mundame
Mundame camp
Mautu
Mile 30 Camp
Ekona Mbenge
Ekona Yard
Ekona Research
Woteva
Bonganjo
Lysoka
Bonakanda
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova
Ewonda
Bwiteya
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
Bulu
Boana
Lower Bolifamba
Bokwaongo
Small Soppo Likoko
Ekande
Naanga
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

REPUBLIC OF CAMEROON

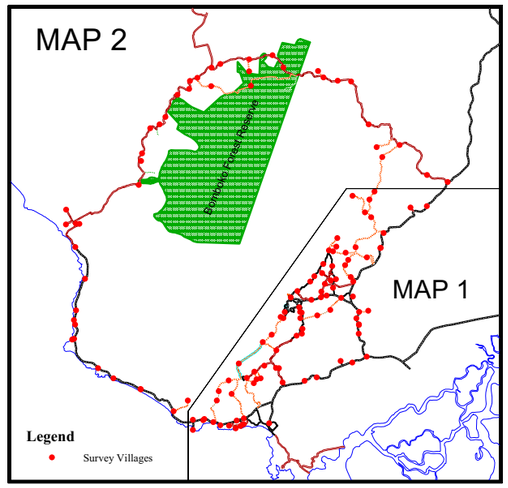
MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT

South West Province

Mount Cameroon Project

ALTERNATIVE SOURCE OF INCOME BEEKEEPING



Legend

- No data
- No
- Yes

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

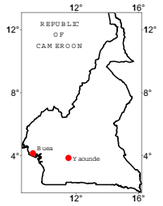
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

ALTERNATIVE SOURCE OF INCOME - LIVESTOCK REARING



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
Bulu
Boana
Lower Bolifamba
Bokwaongo
Small Soppo Likoko
Ekande
Naanga
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwiuku
Dibanda
Bwassa
Mevio
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

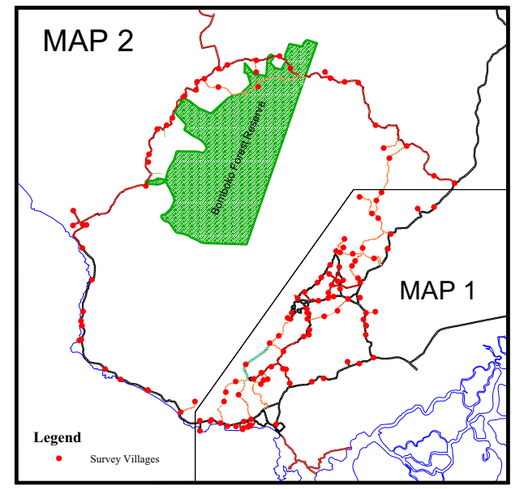
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

ALTERNATIVE SOURCE OF INCOME LIVESTOCK REARING



Legend

No data
No
Yes

Topography

Main tared Road
Secondary tared Road
Main dirt Road
Secondary dirt Road
Secondary Forest Road
Principale footpath
Shoreline
Bomboko Forest Reserve
Ewongo Settlement

0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

ALTERNATIVE SOURCE OF INCOME- FUEL WOOD HARVESTING AND LOGGING

MAP 2

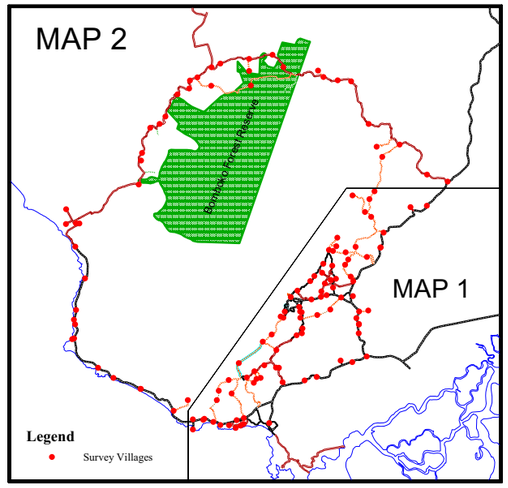
MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Masone
Boviongo 2
Muyange Ma Mbonje
Munyenge
Lylale Leowo Lykoko
Mondongo 2
Bomboko Bush Farm
Kuke Kumbu
Katakata
Bafia-Muyuka
Efolofo
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji
Njonji Camp
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Etone
Biwon (Bonanza Estate)
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mundame
Mundame camp
Mautu
Mile 30 Camp
Ekona Mbenge
Ekona Yard
Ekona Research
Woteva
Bonakanda
Bonganjo
Lysoka
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Bokova
Upper Bolifamba
Muangai
Lysoka camp
Bova
Ewonda
Bwiteya
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
Bulu
Boana
Lower Bolifamba
Bokwaongo
Small Soppo Likoko
Ekande
Naanga
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Mokunda
Bonadikombo
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater



REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT

South West Province

Mount Cameroon Project

ALTERNATIVE SOURCE OF INCOME

FUEL WOOD HARVESTING AND LOGGING

Legend

- No data
- No
- Yes

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

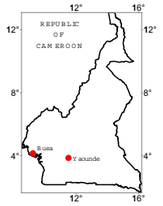
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

SIZE OF MARKETS



REPUBLIC OF CAMEROON

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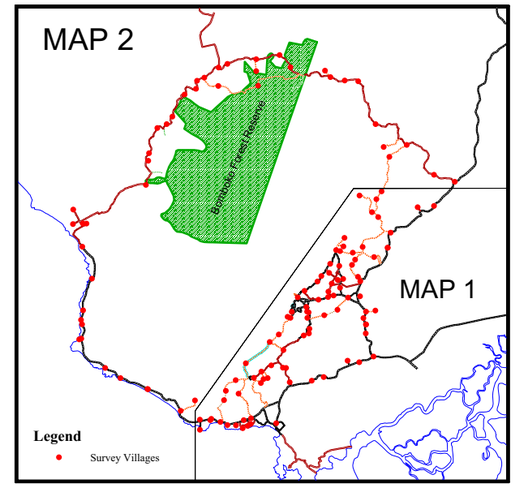
Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

SIZE OF MARKETS



Legend

Market classification

- No market
- Very small market (1 - 25)
- Small market (26 - 50)
- Medium market (51 - 200)
- Large market (201 - 500)
- Main market (> 500)
- No data

Topography

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0 — 2.5 — 5 Kilometers

Scale 1:130.000

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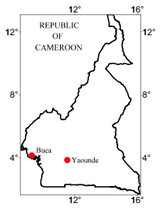
Nurseries and Kindergardens



515 000 meters | 520 000 | 525 000 | 530 000 | 535 000 | 540 000 meters

470 000 meters | 465 000 | 460 000 | 455 000 | 450 000 | 445 000 meters

MAP 2

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Munyenge
Bomboko Bush Farm
Mondongo 2
Lylale Leowo
Lykoko
Kuke Kumbu
Katakata
Bafia-Muyuka
Efolofo
Big Kotto
Bavenga Prison
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Small Kotto
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Njonji
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Debundscha Beach
Isongo Camp
Bakingili
Etone
Biwon (Bonanza Estate)
Batoke

MAP 1

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Wokulu
Bonjia
Maumu
Wokaka
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Upper Bolifamba
Muangai
Lysoka camp
Bova 1
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Bwiteva
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Small Soppo Likoko
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Tole camp
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Wonjava
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Bonadikombo
Mokunda
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Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2,5 5 Kilometers

REPUBLIC OF CAMEROON

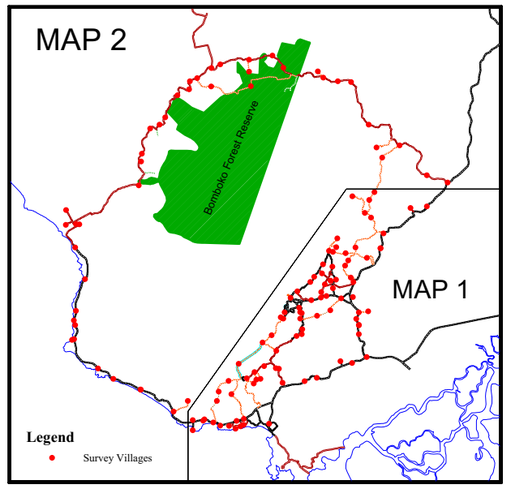
MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT

South West Province

Mount Cameroon Project

Nurseries and Kindergardens



Legend

Numbers

- No data
- 0
- 1
- 2 - 5
- 6 - 20

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
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- Shoreline
- Bomboko Forest Reserve
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0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
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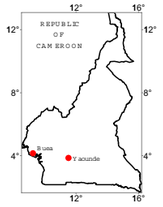
German Technical Cooperation (GTZ) GmbH
2003

PRIMARY SCHOOLS



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470 000 meters
465 000
460 000
455 000
450 000
445 000 meters

MAP 2

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
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Mokunda
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Limbola
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Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

MAP 1

0 2.5 5 Kilometers

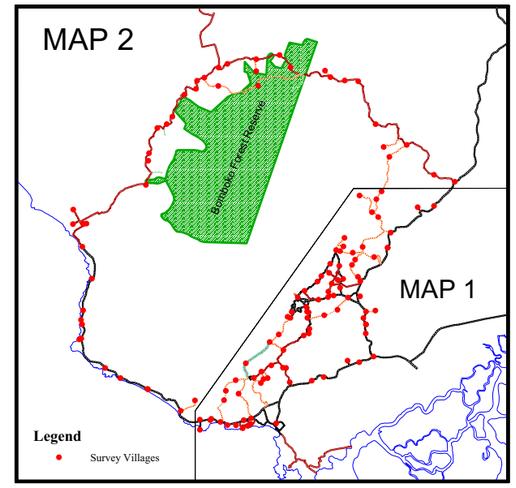
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

PRIMARY SCHOOLS



Legend

Numbers

- No data
- 0
- 1
- 2 - 5
- 6 - 10
- 11 - 20

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
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- Ewongo — Settlement

0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
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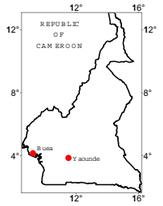
SECONDARY SCHOOLS



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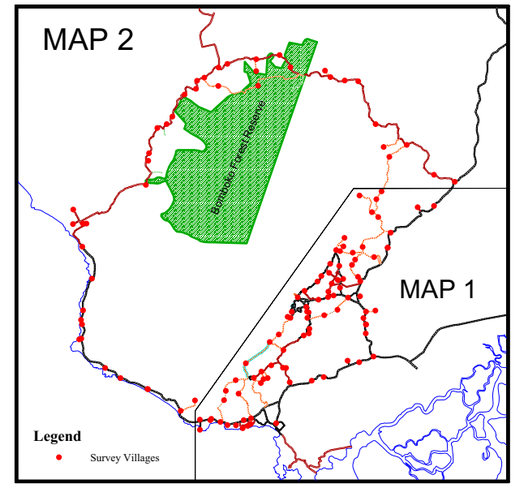
South West Province

Mount Cameroon Project

SECONDARY SCHOOLS



Legend

Numbers

- No data
- 0
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- 2 - 5
- 6 - 10
- 11 - 20

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
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0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
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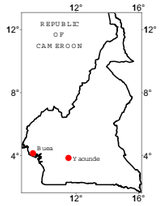
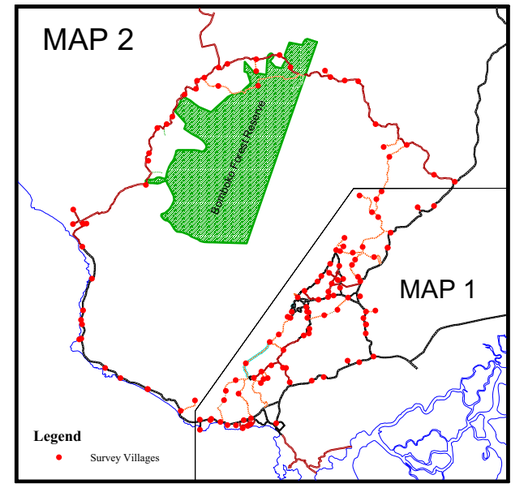


MEDICAL STUFF



REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

MEDICAL STUFF

Legend

Number of medical staff

- No data
- No health facility
- Health facilities without staff
- Health facilities with 1 staff
- Health facilities with 2 - 9 staff
- Health facilities with 10 - 19 staff
- Health facilities with 20 - 50 staff
- Health facilities with more than 50 staff

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
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- Bomboko Forest Reserve
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0 2.5 5 Kilometers

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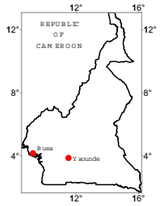
WATER SUPPLY



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Bonakanda
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova 1
Ewonda
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Muea
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Molyko Camp
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Boanda
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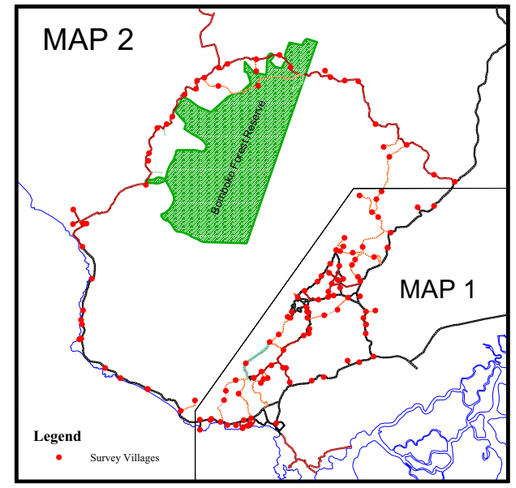
South West Province

Mount Cameroon Project

WATER SUPPLY



Legend

Water supply

- No data
- No water
- No pipe born water
- Broken down pipe born water
- Pipe born water

Topography

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0 2.5 5 Kilometers

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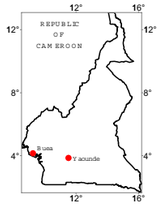
2003

ELECTRIFICATION



MAP 2

MAP 1

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SONARA Quater

0 2.5 5 Kilometers

REPUBLIC OF CAMEROON

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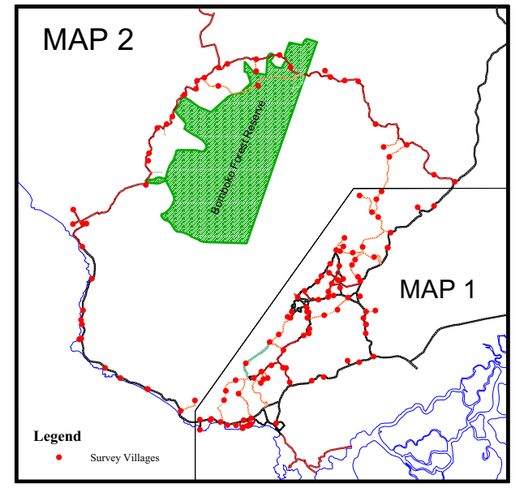
Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

ELECTRIFICATION



Legend

Electrification

- No data
- No electricity at all
- Generator based electricity
- National Grid (SONEL)

Topography

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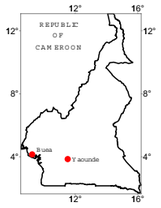
German Technical Cooperation (GTZ) GmbH
2003

ADMINISTRATIVES BUILDINGS - MINEF



MAP 2

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Bokova
Upper Bolifamba
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Bulu
Boana
Lower Bolifamba
Likoko Membea
Bokwaongo
Small Soppo Likoko
Ekande
Naanga
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwiuku
Dibanda
Bwassa
Mevio
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2.5 5 Kilometers

REPUBLIC OF CAMEROON

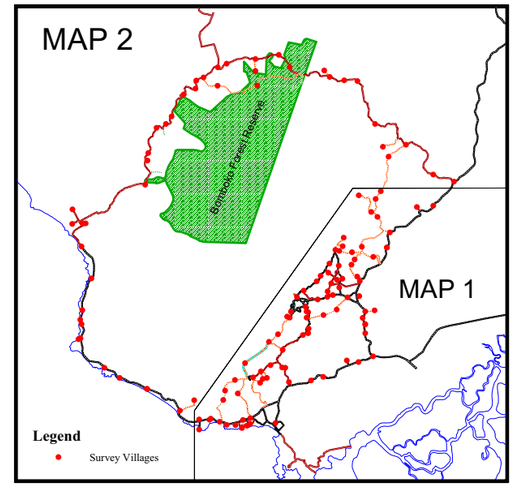
MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT

South West Province

Mount Cameroon Project

ADMINISTRATIVES BUILDINGS MINEF



Legend

Postes

- No data
- No post
- Forestry Post
- Sub-divisional Delegation
- Divisonal Delegation
- Provincial Delegation

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

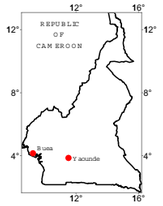
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

ADMINISTRATIVES BUILDINGS - MINAGRI



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters

465 000

460 000

455 000

450 000

445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Ekona Yard
Ekona Research
Woteva
Bonganjo
Lysoka
Bonakanda
Bonjia
Wokulu
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova 1
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
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Bomaka
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Molyko
Great Soppo
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Likoko Membea
Bulu
Boana
Bokwaongo
Lower Bolifamba
Naanga
Wolikawo
Small Soppo Likoko
Ekande
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Vesao
Ombe Camp
Mapanja
Wotutu
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Bojoke
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Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
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Mokunda
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Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2.5 5 Kilometers

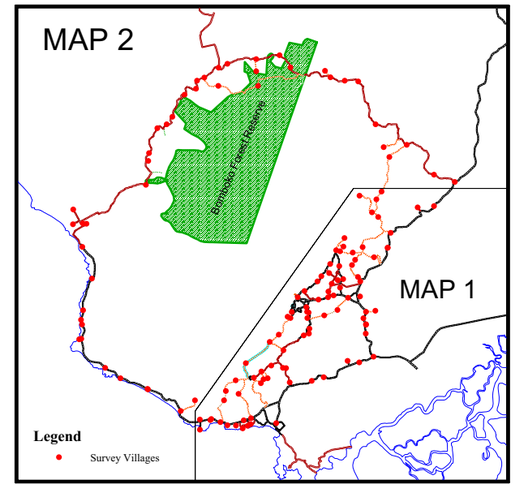
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

ADMINISTRATIVES BUILDINGS MINAGRI



Legend

Numbers

- No data
- No post
- Non-functional extension post
- Staffed extension post
- Sub-division Delegation
- Divisional Delegation
- Provincal Delegation

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

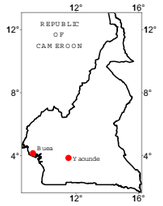
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

DEPENDANCE ON THE BOMBOKO FOREST RESERVE



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters
465 000
460 000
455 000
450 000
445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
Owe
Muyuka
Bomana Bomboko
Rechts Fluss Camp
Soden Camp
Scipio Camp
Bomboko Forest Reserve
Sanje
Idenau
Isobe
Njonji Camp
Njonji
Kadji Cattle Ranch
Debundscha
Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Wokulu
Bonjia
Maumu
Wokaka
Bova 2
Upper Bolifamba
Bokova
Muangai
Lysoka camp
Bova
Ewonda
Bwiteva
Bwitingi
Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
Wotolo
Molyko
Great Soppo
Small Soppo Wovila
Likoko Membea
Bulu
Boana
Bokwaongo
Lower Bolifamba
Naanga
Wolikawo
Small Soppo Likoko
Ekande
Boanda
Lower Bokova
Tole camp
Bwassa
Mevio
Bwiuku
Dibanda
Likombe
Saxenhof
Mutengene
Vesao
Ombe Camp
Mapanja
Wotutu
Esuke Camp
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
Bongala
Wonjava
Mile 7 Camp (Tomatel/Ebono)
Upper Boando
Bonadikombo
Mokunda
Lower Boando
Limbola
Mukondange
Karata Camp
Limbe
Mokindi (Sokolo)
Bobende
Ngeme
Botaland
Wovia
SONARA Quater

0 2.5 5 Kilometers

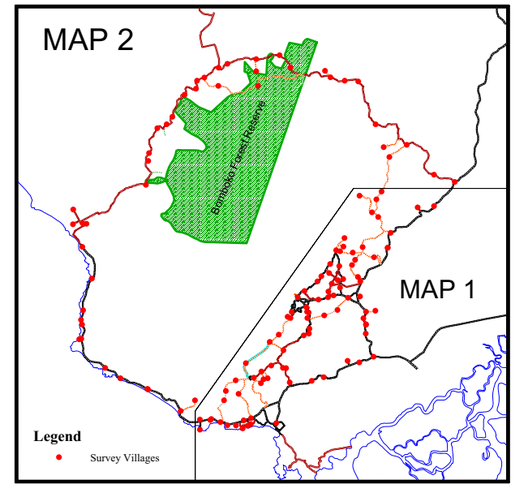
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

DEPENDENCE ON THE BOMBOKO FOREST RESERVE



Legend

Dependence

- Village does not depend on the Bomboko Forest Reserve
- Village utilises the Bomboko Forest Reserve without having a traditional right
- Village utilises the Bomboko Forest Reserve and has the traditional right to do so
- No data

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

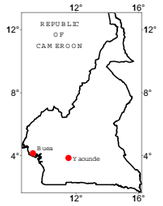
0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

MCP ACTIVITIES AT VILLAGE LEVEL



MAP 2

MAP 1

515 000 meters 520 000 525 000 530 000 535 000 540 000 meters

470 000 meters 465 000 460 000 455 000 450 000 445 000 meters

Boviongo
Bova Bomboko
Bokosso
Boviongo 2
Masone
Muyange Ma Mbonje
Mondongo 2
Munyenge
Bomboko Bush Farm
Lylale Leowo Lykoko
Kuke Kumbu
Katakata
Efolofo
Bafia-Muyuka
Big Kotto
Bavenga Prison
Ikata
Small Kotto
Bavenga
Makoko Palm Estate
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Bomana Bomboko
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Debundscha Beach
Isongo Camp
Bakingili
Biwon (Bonanza Estate)
Etone
Batoke
0 2.5 5 Kilometers

Ekona Lelu
Masuma
Liola Buea
Mautu
Mile 30 Camp
Mundame
Mundame camp
Ekona Mbenge
Woteva
Bonakanda
Bonganjo
Lysoka
Ekona Yard
Ekona Research
Wokulu
Bonjia
Maumu
Wokaka
Bova
Upper Bolifamba
Bokova
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Lysoka camp
Bova Ewonda
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Muea
Bokwai
Molyko Camp
Buea
Bonduma
Buea GRA
Bokoko
Bomaka
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Molyko
Great Soppo
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Likoko Membea
Bulu
Boana
Bokwaongo
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Naanga
Small Soppo Likoko
Ekande
Wolikawo
Boanda
Lower Bokova
Tole camp
Bwiuku
Dibanda
Bwassa
Mevio
Likombe
Saxenhof
Mutengene
Ombe Camp
Vesao
Esuke Camp
Mapanja
Wotutu
Bonjongo
Bojoke
Ewongo
Wosenge
Moliwe Camp
Ekonjo
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Wonjava
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Mokunda
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Limbola
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Karata Camp
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Mokindi (Sokolo)
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SONARA Quater

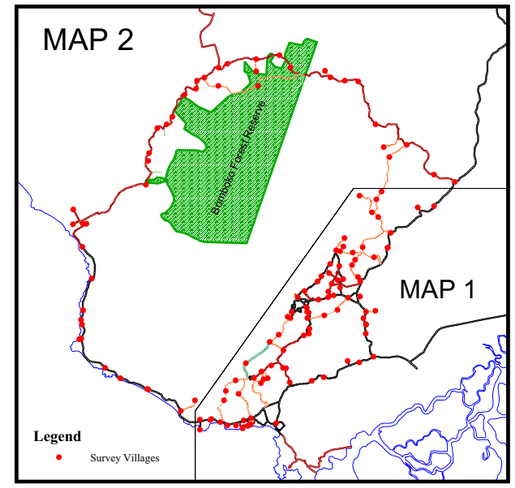
REPUBLIC OF CAMEROON

MINISTRY OF ECONOMIC AFFAIRES, PROGRAMMATION & REGIONAL DEVELOPMENT

Provincial Delegation of MINEPAT
South West Province

Mount Cameroon Project

MCP ACTIVITIES AT VILLAGE LEVEL



Legend

Activities

- No data
- 0
- 1
- 2
- 3
- 4
- 5
- 6 - 10

Topography

- Main tared Road
- Secondary tared Road
- Main dirt Road
- Secondary dirt Road
- Secondary Forest Road
- Principale footpath
- Shoreline
- Bomboko Forest Reserve
- Ewongo — Settlement

0 2.5 5 Kilometers

Scale 1:130.000

Projection: UTM Zone 32
Ellipsoide: WGS84
Data Source: GIS SW CAMEROON

German Technical Cooperation (GTZ) GmbH
2003

Appendices

Appendix 1:
Terms of Reference

MOUNT CAMEROON PROJECT

MINPAT/GTZ, BUEA.

REPUBLIC OF CAMEROON
Peace – Work - Fatherland
MINISTRY OF PUBLIC INVESTMENT AND REGIONAL DEVELOPMENT

Provincial Delegation of MINPAT
South Western Province

Mount Cameroon Project
P.O. Box 60 Buea S.W.P.

Tel/Fax: 00237 3322836
email :mcpbuea@camnet.cm

REPUBLIQUE DU CAMEROUN
Paix – Travail - Partie
MINISTERE DES INVESTISSEMENT PUBLIQUE ET DE L'AMENAGEMENT DU TERRITOIRE
Délégation Provinciale du MINPAT
Sud – Ouest
Projet Mont Cameroun, Buea
B.P. 60, Buea, S.W.P
Tel/Fax: 00237 3322836
email :mcpbuea@camnet.cm

Tuesday, 24 December 2002

Terms of Reference for a short-term mission
Study in the field of Data Base establishment in Mount Cameroon Project area
Conducted by Kai Schmidt-Soltau

Time Frame: 28.01.2003 to 31.06.2003

Background:

Since 1995 the Mount Cameroon Project works with target groups in the Mountain Region. Target groups are mostly village-based organisations living and working in the buffer zone of the Mount Cameroon. The impact of these villages and people living in this area was considered as negative for sustainable natural resources management and/or protection issues.

For the last 8 years, the project approach was to work with these target groups, with the objective of sustainable natural resources management. Organisational development, introduction of sustainable agriculture and forestry methods, ecotourism and other activities have had an impact on the people around the mountain.

The Mount Cameroon Project is rounding up after the eight years of cooperation, because the project will be transformed into a national natural resources management program with an important change in approach, but based on the lessons learnt from the present project.

Assistance to target groups and villages within the project area will continue and in some cases be extended. The future program will base its activities on systematically presented results and achievements of the present project, depending also on the geographical location and impact to the protection areas considered by the project / program.

Objective of the mission

Objective of the mission is that in collaboration with a GIS expert (Mr. Karl Tiller) the establishment of a data base (MapInfo / Access) for presentation of the project area, villages within this area,

their different impact to natural resources management and protection issues of the Bomboko Forest Reserve, the project achievements and organisational systems is in place.

The structure of this data base will be used in the future for impact monitoring of program input in this area, especially for the evaluation of poverty evolution in the rural areas within a defined time frame and program input.

Result 1

- In collaboration with the GIS Expert (Mr. Karl Tiller) a socio economic data base structure is designed with a link to the overall MCP MapInfo GIS system.

Activities

- Define project area and villages to be included in the data base.
- Design the data base including data entering forms.

Indicators

- Database structure
- Tested data entry form.

Result 2

The database is established and all relevant socio economic data as well as other important information are entered in the database.

Activities

- Existing reports and other sources are reviewed and relevant information are extracted and entered in the database.
- Collect other important field data defined by the data base structure in collaboration with hired field staff by the consultant and enter them into the database.

Indicators

- Completed Access data base with all relevant verified information and link to the MapInfo GIS system (Link by Village individual code).

Result 3

A socio economic report and maps based on the structure of the database through the MapInfo - linked information is established.

Activities

- Write report and establish maps in collaboration with the GIS expert.

Indicators

- Technical report

Workplan

Date	Duration	Activity
28.01.03 – 31.01.03	4 days (Buea)	Establish in collaboration with the GIS Expert (Mr. Karl Tiller) a socio economic data base structure with a link to overall MCP MapInfo GIS system
January to June 2003	10 (Buea), 5 (Yaoundé), Up to 35 days for hired labour for data review and	Data base establishment

	input.	
January to June 2003	25 days, Up to 100 days of field work by hired labour.	Data collection with hired field staff in the defined project area.
June 2003	4 days	Report writing including maps established with the GIS expert.

Presentation of the results

The results will be presented through a technical report (1 bounded hard copy, 1non bounded hard copy and one soft copy on CD).

Intermediate results after field trips and decision making meeting will be presented by minutes.

At the end of the mission a 1 hour presentation to project and partner staff will be made.

K.Schmidt-Corsitto

Project Adviser

Appendix 2: Itinerary

Time-schedule for the MC-SE-GIS: Dr. Kai Schmidt-Soltau				
Date	Station	Activity (Research in …)	Nr.	Field/ Office
	Y'de	Preparation of data collection material	1-5	O
3/6	Buea	Team building & Training	6	O
4/6	Buea	Training	7	O
5/6	Buea	Pretest in Bokwaongo and Bwassa	8	F
6/6		Fieldwork see itinerary MCP-SE-GIS2	9	F
7/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	10	F
8/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	11	F
9/6		Fieldwork see itinerary MCP-SE-GIS2	12	F
10/6		Fieldwork see itinerary MCP-SE-GIS2	13	F
11/6		Fieldwork see itinerary MCP-SE-GIS2	14	F
12/6		Fieldwork see itinerary MCP-SE-GIS2	15	F
13/6		Fieldwork see itinerary MCP-SE-GIS2	16	F
14/6		Fieldwork see itinerary MCP-SE-GIS2	17	F
15/6		Fieldwork see itinerary MCP-SE-GIS2	18	F
16/6		Fieldwork see itinerary MCP-SE-GIS2	19	F
17/6		Fieldwork see itinerary MCP-SE-GIS2	20	F
18/6		Fieldwork see itinerary MCP-SE-GIS2	21	F
19/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	22	F
20/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	23	F
21/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	24	F
22/6		Fieldwork see itinerary MCP-SE-GIS2	25	F
23/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	26	F
24/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	27	F
25/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	28	F
26/6		Fieldwork see itinerary MCP-SE-GIS2	29	F
27/6		Fieldwork see itinerary MCP-SE-GIS2	30	F
28/6		Fieldwork see itinerary MCP-SE-GIS2	31	F
29/6	Buea	Fieldwork see itinerary MCP-SE-GIS2	32	F
30/6	Buea	Supervision of data entry and data screening	33	O
1/7	Buea	Supervision of data entry and data screening	34	O
2/7	Buea	Supervision of data entry and data screening	35	O
3/7	Buea	Supervision of data entry and data screening	36	O
	Y'dé	Data analysis	37-39	O
	Y'dé	Report writing	40-44	O
22/7	Buea	Travel to Buea	45(1/2)	O
23/7	Buea	Preparation of data transfer	46	O
24/7	Buea	Cross-checking of missing data	47	O
25/7	Buea	Elaboration of thematic maps	48	O
26/7	Buea	Elaboration of thematic maps	49	O

27/7	Buea	Elaboration of thematic maps	50	O
28/7	Buea	Elaboration of thematic maps	51	O
29/7	Douala	Presentation of results and handing over of documents	52	O
30/7		Travel to Yaoundé	(1/2)	O

Itinerary of fieldwork MC-SE-GIS				
Day Nr.	**Date**	**Day**	**Village**	**Time**
Phase 1: Carried out by Takem James & Pary-Cao Agbortar				
1	**28/1/2003**	**Tuesday**	Travel (Mamfe to Buea)	
2	**29/1/2003**	**Wednesday**	Travel out of Buea	
3	**30/1/2003**	**Thursday**	GPS Survey	
4	**31/1/2003**	**Friday**	GPS Survey, National archive	
5	**1/2/2003**	**Saturday**	Village mapping	
6	**2/2/2003**	**Sunday**	Village mapping	
7	**3/2/2003**	**Monday**	SOWEDA	
	3/2/2003		PAN AFRICAN INSTITUTE	
8	**4/2/2003**	**Tuesday**	Visit MINEF, MINSANTE & MINEDUC	
9	**5/2/2003**	**Wednesday**	Visit MINAGRI, CEFAM & Survey School	
10	**6/2/2003**	**Thursday**	Visit MINEDUC & MINAGRI	
11	**7/2/2003**	**Friday**	Visit to Limbe/ MINTP, MCP Limbe, CERUT	
12	**8/2/2003**	**Saturday**	Village mapping	
13	**9/2/2003**	**Sunday**	Village Mapping/Travel to Kumba	
14	**10/2/2003**	**Monday**	Visit community Development School/Travel to Mamfe	
Fieldwork Phase 2: Carried out by Dr. Kai Schmidt-Soltau, Takem James, Pary-Cao Agbortar, Rose Ewune, Frida Luma				
(1)	**2/6/2003**	**Monday**	Takem James & Pary-Cao Agbortar Travel to Buea	
1	**3/6/2003**	**Tuesday**	Teambuilding, Training	
2	**4/6/2003**	**Wednesday**	Training	
3	**5/6/2003**	**Thursday**	Bokwaongo	7 am
	5/6/2003		Bwassa	5 pm
4	**6/6/2003**	**Friday**	Ewonda	7 am
	6/6/2003		Bova 1	7:30 am
	6/6/2003		Bova 2	10 am
	6/6/2003		Muangai	10 am
	6/6/2003		Bonakanda	2 pm
	6/6/2003		Bonganjo	4 pm
	6/6/2003		Woteva	5 pm
5	**7/6/2003**	**Saturday**	Wokulu	7 am
	7/6/2003		Molyko Camp	7 am
	7/6/2003		Bokova	10 am
	7/6/2003		Bwitingi	1 pm

	7/6/2003		Bwiteva	1 pm
	7/6/2003		Bokwai	2 pm
	7/6/2003		Upper Bolifamba	4 pm
	7/6/2003		Bonduma	5 pm
6	**8/6/2003**	**Sunday**	Muea	7 am
	8/6/2003		Lysoka Camp	7 am
	8/6/2003		Wokaka	12 am
	8/6/2003		Bonjia	1 pm
	8/6/2003		Lysoka	2 pm
	8/6/2003		Maumu	3 pm
7	**9/6/2003**	**Monday**	Ekona Yard	7 am
	9/6/2003		Ekona Mbenge	7 am
	9/6/2003		Ekona Research	1 pm
	9/6/2003		Mundame Camp	3 pm
	9/6/2003		Mundame	5 pm
8	**10/6/2003**	**Tuesday**	Ekona Lelu	7 am
	10/6/2003		Mautu	7 am
	10/6/2003		Liola Buea	7 am
	10/6/2003		Masuma	10 am
	10/6/2003		Mile 30 Camp	3 pm
	10/6/2003		Muyuka	3 pm
9	**11/6/2003**	**Wednesday**	Owe	7 am
	11/6/2003		Ikata	2 pm
	11/6/2003		Bavenga Native	2 pm
	11/6/2003		Bavenga Prison	5 pm
10	**12/6/2003**	**Thursday**	Bafia -	7 am
	12/6/2003		Lykoko	7 am
	12/6/2003		Lilale	2 pm
	12/6/2003		Munyenge	4 pm
11	**13/6/2003**	**Friday**	Bomboko Forest Camp	7 am
	13/6/2003		Bova Bomboko	7 am
	13/6/2003		Masone	9 am
	13/6/2003		Boviongo	10 am
	13/6/2003		Boviongo II	11 am
	13/6/2003		Ebie	3 pm
	13/6/2003		Bokosso	5 pm
12	**14/6/2003**	**Saturday**	Mundongo	7 am
	14/6/2003		Munyange	7 am
	14/6/2003		Mweli	11 am
	14/6/2003		Kuke Kumbo	11 am
	14/6/2003		Katakata	2 pm
	14/6/2003		Efolofo	2 pm
	14/6/2003		Big Kotto	4 pm

	14/6/2003		Small Kotto	4 pm
	14/6/2003		Bomana Bomboko	5 pm
	14/6/2003		Makoko Palm Estate	6 pm
13	**15/6/2003**	**Sunday**	Rechts Fluss Camp	7 am
	15/6/2003		Sonie	7 am
	15/6/2003		Idenau	8:30 am
	15/6/2003		Scipio Camp	11 am
	15/6/2003		Soden Camp	1 pm
	15/6/2003		Njonji Camp	3 pm
	15/6/2003		Njonji Native	5 pm
14	**16/6/2003**	**Monday**	Kadji Cattle Ranch	7 am
	16/6/2003		Debunscha	7 am
	16/6/2003		Isongo Camp	10 am
	16/6/2003		Debunscha Beach	10 am
	16/6/2003		Bakingili	1 pm
	16/6/2003		Isobe	1 pm
	16/6/2003		Biwon Bonanza Estate	4 pm
	16/6/2003		Batoke	4 pm
15	**17/6/2003**	**Tuesday**	Wovia	7 am
	17/6/2003		Etone	7 am
	17/6/2003		Top Line Camp	9 am
	17/6/2003		Sonara Quarter	11 am
	17/6/2003		Limbola	2 pm
	17/6/2003		Green Vale Palm Estate	3 pm
	17/6/2003		Bobende	4 pm
	17/6/2003		Ngeme	4 pm
16	**18/6/2003**	**Wednesday**	Botaland	7 am
	18/6/2003		Mokindi (Sokolo)	7 am
	18/6/2003		Karata Camp	10 am
	18/6/2003		Kie	11 am
	18/6/2003		Ngeme Camp	1 pm
	18/6/2003		Bonadikumbo	2 pm
	18/6/2003		Mokundange	2 pm
	18/6/2003		Moliwe Camp	5 pm
17	**19/6/2003**	**Thursday**	Mutengene	7 am
	19/6/2003		Ombe Camp	9 am
	19/6/2003		Dibanda	11 am
	19/6/2003		Bwanba	3 pm
	19/6/2003		Mile 7 Camp	5 pm
	19/6/2003		Isuke Camp	5 pm
18	**20/6/2003**	**Friday**	Lower Bolifamba	7 am
	20/6/2003		Molyko	7 am
	20/6/2003		Ewongo	3 pm

	20/6/2003		Wotutu	4:30 pm
19	**21/6/2003**	**Saturday**	Lower Bokova	7 am
	21/6/2003		Bokoko	7 am
	21/6/2003		Ekande	9 am
	21/6/2003		Wotolo	1 pm
20	**22/6/2003**	**Sunday**	Small Soppo Wovilla	7 am
	22/6/2003		Tole Camp	7 am
	22/6/2003		Biuku	9 am
	22/6/2003		Small Soppo Likoko	10 am
	22/6/2003		Small Soppo Woteke	11 am
	22/6/2003		Wolikawo	11 am
	22/6/2003		Mevio	1 pm
	22/6/2003		Saxenhof	5 pm
	22/6/2003		Boana	5 pm
	22/6/2003		Vesao	5 pm
	22/6/2003		Bonjongo	7 pm
21	**23/6/2003**	**Monday**	Ekonjo	7 am
	23/6/2003		Bongala	7 am
	23/6/2003		Upper Boando	9 am
	23/6/2003		Wosenge	9 am
	23/6/2003		Lower Boando	11 am
	23/6/2003		Bojoke	11 am
	23/6/2003		Wanjava	1 pm
	23/6/2003		Mokunda	1 pm
	23/6/2003		Mapanja	4 pm
	23/6/2003		Likombe	5 pm
22	**24/6/2003**	**Tuesday**	Likoko Membea	7 am
	24/6/2003		Bulu	11 am
	24/6/2003		Small Soppo Woganga	1 pm
	24/6/2003		Buea	1 pm
23	**25/6/2003**	**Wednesday**	Great Soppo	7 am
	25/6/2003		Bomaka	11 am
24	**26/6/2003**	**Thursday**	Naanga	1 pm
	26/6/2003		Buea Governmental area	
25	**27/6/2003**	**Friday**	**Limbe**	
	27/6/2003		Bomboko Bush Farm	
	27/6/2003		Mundongo 2	
26	**28/6/2003**	**Saturday**	**Limbe**	
27	**29/6/2003**	**Sunday**	**Limbe - Data entry**	
28	**30/6/2003**	**Monday**	**Data entry**	
29	**1/7/2003**	**Tuesday**	**Data entry**	
30	**2/7/2003**	**Wednesday**	**Data entry**	
(2)	**3/7/2003**	**Thursday**	Takem James & Pary-Cao Agbortar: Travel to Mamfe	

Appendix 3: Legend for village mapping

Instructions for village mapping

Individual Infrastructure (separate kitchen buildings or storage facilities are not considered)

Personal House (if more than 50 % of the roof is constructed of zinc or tiles)

Personal House (if more than 50 % of the roof is constructed of any other material)

Personal Compound (if more than 50 % of the roof is constructed of zinc or tiles)

Personal Compound (if more than 50 % of the roof is constructed of any other material)

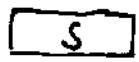
Other Infrastructure:

Well

Administrative Building MINEF

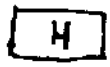
Administrative Building MINAGRI

School



Market

Health Post/ Health Centre /Hospital/ Maternity Home



Pharmacy

Church

Other communal infrastructure

State:

Under construction

Broken down

Any other building, which does not fall under one of the above mentioned category, should be indicated with a number and described in the legend.

Appendix 4: Questionnaire

MINEF – MINEPAT - GTZ

Mount Cameroon Project Socio-economic geographic information system

MC – SE – GIS

Village Questionnaire

1. Village Name: _____

2. Through which major activities do the people of this village earn their living?

Activity	Tick, if the activity is mentioned	Relevance for the livelihood (cash and subsistence) of the village in %
Hunting		
Fishing		
Farming		
NTFP-Gathering		
Labour		
Trading		
Others:		
Total		**100%**

3. Which other economic activities do the people carry out? (Tick or add in writing)

Activity		Activity		Activity	
Bee keeping		Mushroom cultivation		Fuel wood harvesting	
Poultry		Piggery		Cassava processing	
Other livestock rearing					

4. Which agricultural crops do the people of this village grow and their relevance for the livelihood? (Tick the one, which occur in the village - Check that you end with 100%)

Crop	Occur?	Percentage	Crop	Occur?	Percentage
Banana			Oil Palm		
Beans			Okro		
Carrots			Oranges		
Cassava			Paw-Paw		
Cocoa			Pear		
Coconut			Pepper		
Cocoyam			Pineapple		
Coffee			Plantain		
Colocasia			Plums		
Cotton			Potatoes		
Egusi			Rubber		
Groundnuts			Soya Beans		
Maize			Sweet Yam		
Mango			Vegetables		
			Yams		

5. What is the major farming system in the village? (Just tick)

Plantation Farming		Small scale farming		The two are equally important	

6. Does any of the people of this village hunt, gather or farm in the Bomboko forest reserve? Yes □ No □ Do not know □

7. Do you have traditional rights to use the Bomboko forest reserve?
Yes □ No □ Do not know □

8. How many market days per week do you have in your village? _____

9. How many permanent market stands do you have? _____
(Check the number after finishing with all questions)

10. Which kind of schools and other educational centres do you have in your village?

School Type	School Name	Owner	Up to class	Nb. Class rooms	Nb. of teachers employed by the owner	Nb. of boys	Nb. of girls	State

Type: Nursery = 1, Kindergarten = 2, Primary = 3, Secondary = 4, Vocational/Technical = 5, Teachers training = 6, University = 7.
Owner: Community = 1, Government = 2, Mission = 3, Private = 4.
State: Bad = B, Fair = F, Good = G, In need of repair = R.

11. Which health services do you have in your village and who is working there?

				Employed by the owner			
Nb.	Type	Owner	Nb. of beds	Nb. of Doctors	Nb. of nurses	Nb. of other medical staff	State

Type: Health Centre = 1, Hospital = 2, Health Post = 3, Maternity home = 4.
Owner: Community = 1, Government = 2, Mission = 3, Private = 4.
State: Bad = B, In need of repair = R, Fair = F, Good = G.

12. Which and how many other health infrastructure do you have permanently in your village?

Type of health infrastra.	Nb.	Type of health infrastra.	Nb.	Type of health infrastra.	Nb.
Pro-Pharmacy		Traditional Healer		Drugstore	
Family Planning Unit					

13. Where do you get your water from and who is managing this water source?

Nb.	Type	Manager	State

Type: Stream/River = 1, Well without pump = 2, Well with pump = 3, Pipe-borne Water = 4, Spring = 5.
Manager: Water committee = 1, Community = 2, SNEC = 3, Individual = 4, Nobody = 5.
State: Bad = B, In need of repair = R, Fair = F, Good = G.

14. Where do you get your electricity from?

Type of main electric infrastructure	Occur?	
National Grid (SONEL)		
Community owned generator		
Personal generator		

State: Bad = B, In need of repair = R, Fair = F, Good = G.

15. Which other governmental buildings do you have in your village?

Nr.	Type (code below)	Nb. of permanent technical staff	State

Typ: MINEF Prov. Delegation = 2, MINEF Subdiv. Delegation = 3, MINEF Divisional Delegation = 4, Forestry Post = 5, MINAGRI Prov. Delegation = 6, MINAGRI Subdiv. Delegation = 7, MINAGRI Divisonal Delegation = 8, MINAGRI Extension Post = 9,
State: Bad = B, In need of repair = R, Fair = F, Good = G.

16. Which kind of activities did the Mt. Cameroon Project carry out in your village?

ID_ACT	Activity	Tick
1	Introduction of sustainable Prunus management	
2	Introduction of sustainable wildlife management	
3	Introduction of beekeeping	
4	Introduction of soap making	
5	Introduction of mushroom cultivation	
6	General awareness raising	
7	Facilitation of group formation	
8	Introduction of community forest	
9	Joint control activities	
10	Introduction of gender balance	
11	Introduction of Eco-tourism	
12	Joint Forest Reserve management	
99	None	

17. Which major ethnic groups are living in your village?

Nr.	Name of Ethnic Group	Percentage
	Total	**100% (check !!)**

18. To which council does your village belong?: _____

19. This assessment was done by: Frida □ Rose □ PC □ James□

20. Date: _____/06/2003

THANK YOU FOR THE COOPERATION!

Information gathered through the village map:

21: The mapping was done by: Frida □ Rose □ PC □ James□

22. Date _____/06/2003

23. Personal houses

House type	Functional	Under construction	Broken down
Pers. House zinc/tiles roof			
Pers. House roof of other material			
Pers. Compound zinc/tiles roof			
Pers. Compound roof other material			

24. Administrative buildings

House type	Functional	Under construction	Broken down
Well			
Water tank			
Tap Stand			
Administrative Building MINEF			
Administrative Building MINAGRI			
School			
Market			
Health Post/Hospital/ etc.			
Pharmacy			
Church			
Other communal infrastructure			

Appendix 5: Interview Guideline

MINEF – MINEPAT - GTZ

Mount Cameroon Project Socio-economic geographic information system

MC – SE – GIS

Questionnaire – Guideline for data recording

1. Village Name: _____

Check the spelling and/or ask somebody to spell it to you

2. Through which major activities do the people of this village earn their living?

Activity	Tick, if the activity is mentioned	Relevance for the livelihood (cash and subsistence) of the village in %
Hunting		
Fishing		
Farming		
NTFP-Gathering		
Labour		
Trading		
Others:		
Total		**100%**

Tick those activities, which are mentioned in the discussion and add those, which are not yet mentioned in the table.

You can assess the relevance for the livelihood in percentage by using examples like: If I would have 10 cups of mimbo, how many cups would I give to farming?

Make sure that the total is 100% not more not less (if it is like that try to discuss that with your respondents) before you go on to the next question.

3. Which other economic activities do the people carry out? (Tick or add in writing)

Activity		Activity		Activity	
Bee keeping		Mushroom cultivation		Fuel wood harvesting	
Poultry		Piggery		Cassava processing	
Other livestock rearing					

Other economic activities could be the one already typed in or if your respondents mention others, just write them clearly in the empty space at the end of the table:

Tick those activities, which are mentioned in the discussion.

4. Which agricultural crops do the people of this village grow and their relevance for the livelihood? (Tick the one, which occur in the village - Check that you end with 100%)

Crop	Occur?	Percentage	Crop	Occur?	Percentage
Banana			Oil Palm		
Beans			Okro		
Carrots			Oranges		
Cassava			Paw-Paw		
Cocoa			Pear		
Coconut			Pepper		
Cocoyam			Pineapple		
Coffee			Plantain		
Colocasia			Plums		
Cotton			Potatoes		
Egusi			Rubber		
Groundnuts			Soya Beans		
Maize			Sweet Yam		
Mango			Vegetables		
			Yams		

Occur: Tick those products, which were mentioned in the discussion.

You can assess the relevance for the livelihood in percentage by using examples like: If I would have 10 cups of mimbo, how many cups would I give to farming?

Make sure that the total is 100% not more not less (if it is like that try to discuss that with your respondents) before you go on to the next question

5. What is the major farming system in the village? (Just tick)

Plantation Farming		Small scale farming		The two are equally important	

Tick one answer, which is considered by most as the right answer. Try to find out, if one of the two systems is dominant. Only tick the "the two are equally important" answer, if there is no other way.

6. Does any of the people of this village hunt, gather or farm in the Bambuko forest reserve? Yes ☐ No ☐ Do not know ☐

7. Do you have traditional rights to use the Bambuko forest reserve?
Yes ☐ No ☐ Do not know ☐

The traditional rights refer to the understanding of the villagers themselves.

8. How many market days per week do you have in your village? _____

This refers to regular market days, not occasional events.

9. How many permanent market stands do you have? _____
(Check the number after finishing with all questions)

A market stand has at least 4 poles at the side and a thatch roof.

10. Which kind of schools and other educational centres do you have in your village?

School Type	School Name	Owner	Up to class	Nb. Class rooms	Nb. of teachers employed by the owner	Nb. of boys	Nb. of girls	State

School Type refers to the highest definition of a single infrastructure. Utilise for each institution a separate data set.

Typ of Education	
OCODE	**TypEducationInstitution**
CM_5311p	Nursery
CM_5312p	Kindergarden
CM_5313p	Primary
CM_5314p	Secondary
CM_5316p	Vocational/Technical
CM_5317p	Teachers training
CM_5318p	University
CM_9998	Not applicable
CM_9999	Not available

As owner of an infrastructure, we consider the body, which had paid – according to the village interview - more than 50 % of the running costs of the institution in 2002.

Owner of infrastructure	
ID_EO	**Owner**
1	Community
2	Government
3	Mission
4	Privat

Education up to class x, refers to the highest class, which has is operational in the academic year 2002/2003.

Education up to class	
ID_CLASS	**UpToClass**
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	Form 1
9	Form 2
10	Form 3
11	Form 4
12	Form 5
13	Lower Six
14	Upper Six
15	Not appl.

The number of class rooms refers to single rooms separated from each other by a wall even if this wall is not permanent (ply-wood). A room like the Ekpe hall or the community hall, which is used as class room is not considered as such in the questionnaire. We only count those class rooms, which were constructed for that porpose.

The number of teachers employed by the owner refers to fulltime teachers in the academic year 2002/2003. PTA teachers are counted in community schools, but not in governmental schools.

The enrolment refers to the academic year 2002/2003 and differentiates between male and female.

State of infrastructure	
ID_ST	**Status**
B	**Bad** means that less than 10 % of the above mentioned items are without obvious failure and that the state of infrastructure prohibits the functioning of the infrastructure
R	**In need of repair** means that either between 10 and 50 % of the above mentioned items are in need of repair and/or that the functioning of the building is seriously hindered by the problems.
F	**Fair** means that more than half of the above mentioned items are without obvious failure and that none of the existing problems hinder the smooth functioning of the infrastructure
G	**Good** means that the roofs, walls, floor, doors, windows, furniture (tables and chairs, black boards), facilities (electricity, toilet, locks, etc.) and the surrounding (garden, veranda, etc.) of the building are all without obvious failures or needs of repair

11. Which health services do you have in your village and who is working there?

				Employed by the owner			
Nb.	**Typ**	**Owner**	**Nb. of beds**	**Nb. of Doctors**	**Nb. of nurses**	**Nb. of other medical staff**	**State**

Type of health infrastructure refers to the highest definition of a single infrastructure. Utilise for each institution a separate data set.

Type of Health Institutions	
OCODE	**HealthInstitute**
CM_5321	Health Center
CM_5322	Hospital
CM_5323p	Health Poste
CM_5324p	Maternity home
CM_9999	No Information

As owner of an infrastructure, we consider the body, which had paid – according to the village interview - more than 50 % of the running costs of the institution in 2002.

Owner of infrastructure	
ID_EO	**Owner**
1	Community
2	Government
3	Mission
4	Privat

The number of beds refers to a complete bed frame with a mattress and bed sheets.

Number of doctors counts only those doctors, which are more than 50 % of the time present in the village and paid by the owner of the institution.

Number of nurses counts only those nurses, which are more than 50 % of the time present in the village and paid by the owner of the institution.

Number of other medical staff counts only those people, which are more than 50 % of the time present in the village and paid by the owner of the institution.

State of infrastructure:

State of infrastructure	
ID_ST	**Status**
B	**Bad** means that less than 10 % of the above mentioned items are without obvious failure and that the state of infrastructure prohibits the functioning of the infrastructure
R	**In need of repair** means that either between 10 and 50 % of the above mentioned items are in need of repair and/or that the functioning of the building is seriously hindered by the problems.
F	**Fair** means that more than half of the above mentioned items are without obvious failure and that none of the existing problems hinder the smooth functioning of the infrastructure
G	**Good** means that the roofs, walls, floor, doors, windows, furniture (tables and chairs, beds), facilities (electricity, toilet, locks, etc.) and the surrounding (garden, veranda, etc.) of the building are all without obvious failures or needs of repair

12. Which and how many other health infrastructure do you have permanently in your village?

Type of health infrastra.	Nb.	Type of health infrastra.	Nb.	Type of health infrastra.	Nb.
Pro-Pharmacy		Traditional Healer		Drugstore	
Family Planning Unit					

Other health infrastructure could be the one already typed in or if your respondents mention others, just write them clearly in the empty space at the end of the table:

Write in the number of those health infrastructures, which are mentioned in the discussion.

13. Where do you get your water from and who is managing this water source?

Nb.	Type	Manager	State

Type of water supply refers to the highest definition of a single infrastructure. Utilise for each water source a separate data set.

Type of Water Resources	
TypeWaterRessource	**OCODE**
1 Stream/River	CM_5610p
2 Well without pump	CM_5611p
3 Well with pump	CM_5612p
4 Pipe-borne Water	CM_5613p
5 Spring	

Manager of water supply refers to the organisation, which has managed the water system in 2002 to more than 50 %.

Water Resource Management	
ID_RWM	ResourceManagement
1	Water commitee
2	Community
3	SNEC
4	Individual

State of infrastructure:

State of infrastructure	
ID_ST	**Status**
B	**Bad** means that less than 10 % of the above mentioned items are without obvious failure and that the state of infrastructure prohibits the functioning of the infrastructure
R	**In need of repair** means that either between 10 and 50 % of the above mentioned items are in need of repair and/or that the functioning of the building is seriously hindered by the problems.
F	**Fair** means that more than half of the above mentioned items are without obvious failure and that none of the existing problems hinder the smooth functioning of the infrastructure
G	**Good** means that the water system is working without problems and that the water supply is working throughout the year at a sufficient level for the people using the water.

14. Where do you get your electricity from?

Type of main electric infrastructure	State
National Grid (SONEL)	
Community owned generator	
Personal generator	

Electric infrastructure could be the one already typed in or if your respondents mention others, just write them clearly in the empty space at the end of the table:

Type of electric supply refers to the highest definition of a single infrastructure. Utilise for each electric source a separate data set.

Type of Electricity	
OCODE	TypeElectricity
CM_5510p	Personal generator
CM_5511p	Community owned gene
CM_5512p	National Grid (SONEL
CM_9999	none

6. **State of infrastructure:**

State of infrastructure	
ID_ST	**Status**
B	**Bad** means that less than 10 % of the above mentioned items are without obvious failure and that the state of infrastructure prohibits the functioning of the infrastructure

State of infrastructure	
ID_ST	**Status**
R	**In need of repair** means that either between 10 and 50 % of the above mentioned items are in need of repair and/or that the functioning of the building is seriously hindered by the problems.
F	**Fair** means that more than half of the above mentioned items are without obvious failure and that none of the existing problems hinder the smooth functioning of the infrastructure
G	**Good** means that the electricity is working without problems and that the electricity is working throughout the year (beside of small cuts) at a sufficient level for the people using it.

15. Which other governmental buildings do you have in your village?

Nr.	Type (code below)	Nb. of permanent technical staff	State

Typ: MINEF Prov. Delegation = 2, MINEF Subdiv. Delegation = 3, MINEF Divisional Delegation = 4, Forestry Post = 5, MINAGRI Prov. Delegation = 6, MINAGRI Subdiv. Delegation = 7, MINAGRI Divisonal Delegation = 8, MINAGRI Extension Post = 9,

State: Bad = B, Fair = F, Good = G, In need of repair = R.

Enter the type of other governmental infrastructure beside of education and health you find in the village, but check first if this type is already coded.

Number of permanent technical staff refers to people, who are more than 50 % of the time on sit.

State of infrastructure:

State of infrastructure	
ID_ST	**Status**
B	**Bad** means that less than 10 % of the above mentioned items are without obvious failure and that the state of infrastructure prohibits the functioning of the infrastructure
R	**In need of repair** means that either between 10 and 50 % of the above mentioned items are in need of repair and/or that the functioning of the building is seriously hindered by the problems.
F	**Fair** means that more than half of the above mentioned items are without obvious failure and that none of the existing problems hinder the smooth functioning of the infrastructure
G	**Good** means that the roofs, walls, floor, doors, windows, furniture (tables and chairs, beds), facilities (electricity, toilet, locks, etc.) and the surrounding (garden, veranda, etc.) of the building are all without obvious failures or needs of repair

16. Which kind of activities did the Mt. Cameroon Project carry out in your village?

ID_ACT	Activity	Tick
1	Introduction of sustainable Prunus management	
2	Introduction of sustainable wildlife management	
3	Introduction of beekeeping	
4	Introduction of soap making	
5	Introduction of mushroom cultivation	
6	General awareness raising	
7	Facilitation of group formation	
8	Introduction of community forest	
9	Joint control activities	
10	Introduction of gender balance	
11	Introduction of Eco-tourism	

12	Joint Forest Reserve management	
99	None	

Here more than one answer is possible. Do not ask directly, but try to relate the answers of the villagers to the topics mentioned here.

17. Which major ethnic groups are living in your village?

Nr.	Name of Ethnic Group	Percentage
	Total	**100% (check !!)**

Major ethnic groups do not refer to individuals but to significant groups (more than 5 % of the overall village population).

Cross-check the answers, since the chief and his council might be biased in this question.

18. To which council does your village belong?: _____

Appendix 6: Individual Questionnaire (Census)

MINEF – MINEPAT - GTZ

Mount Cameroon Project Socio-economic geographic information system

MC – SE – GIS

Census sheet for individual infrastructure
- Ask the heads of the households living inside the selected building

Village Name: _____/

1. **What is your name?** _____/
2. **Please give us some details about those, who live with you permanently in this building:**

Sex	Age	Main Occupation	Family Position

3. **Please give us some details about those, who are staying here normally, but who are absent at the moment:**

Sex	Age	Main Occupation	Family Position	Place of Stay	Reason	Do you think they will live here in the future

Sex: female = 1; male = 2
Age: 0 – 15 = 1; 16 – 30 = 2 ; 31 - 45 = 3; 46 – 60 = 4 ; > 60 = 5
Profession: Farmer = 1, Hunter = 2, Fisherman = 3, Gathering of NTFP = 4, Pupil/Student = 5, Unskilled labourer = 6, Skilled labourer = 7; Civil servant = 8, Business=9; Retired =10. Other (specify in writing).
Family Position: Household head (hhh)=1; wife/husband of hhh =2; son/daughter of hhh=3; sister/brother of hhh=4; father/mother of hhh or his wife=5; Grandchildren of hhh=6; Niece/Nephew of hhh=7; aunt/uncle of hhh=8; others = specify!
Place of stay: Cameroon: SW = 11; NW = 12; W = 13; Litt = 14; Centr. = 15; S = 16; E = 17; North = 18; Nigeria = 20; Africa =30; Europe = 40; USA = 50; others: specify!
Reason: school = 1; university = 2; unskilled labour = 3; other forms of training = 4.
Comeback: yes =1; no=2; Don't know=3

4. This assessment was done by: Frida □ Rose □ PC □ James□

5. Date: _____/06/2003

Appendix 7: The village map of Mokinda (Sokolo) Part 1[1]

[1] The map has 2 parts, each of them covering several pages of which one is presented here. The map shows the houses on the left side of the Limbe-Ngeme road

NGEME/SOMA'A