

Annex 2 Study Area 2 (Burkina Faso) Report

Programme Against African Trypanosomosis

Options For Tsetse Fly Eradication in the

Moist Savannah Zone of West Africa:

Technical and Economic Feasibility Study,

Phase 1 (Burkina Faso)

Zowinde Koudougou

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Study Area 2 (Burkina Faso) Report

1. THE STUDY AREA

Table 1 Burkina Faso Study Area No.2 – Administrative Areas

Province	Departement			Human Population 1985	Cattle Population	Proportion within Study Area (%)
	Name	Ref. No.	Size (Sq km)			
Houet	Badema	21	939	30936	3403	100
	Bama	22	1325	36305	7261	100
	Bobo-Dioulasso	24	2540	62715	6899	60
	Fo	25	1174	47461	9967	90
	Kourignon	26	559	9726	1070	100
	Satiri	28	1169	25837	2584	80
	Toussiana	29	557	12382	0	40
Kenedougou	Djigouera	30	585	14242	5839	100
	Koloko	31	1248	23835	1907	50
	Kourouma	32	978	13560	2848	80
	N'dorola	34	1455	26743	8023	40
	Orodara	35	427	18326	3848	100
	Samorogouan	38	1132	13193	1451	60
Kossi	Balave	40	521	9246	2866	100
	Dokui	44	782	22543	4734	100
	Kouka	47	779	35372	7428	100
	Sami	50	686	5798	1739	90
	Sanaba	51	917	20388	4078	100
	Solenzo	52	1952	71582	15032	100
	Tansila	53	1100	20646	4129	90
Mou Houn	Ouarkoye	57	1073	22914	13978	60
	Total		21898	543750	109084	

Figure 1 Departements within the Study Area with Reference Nos. (see table 1)

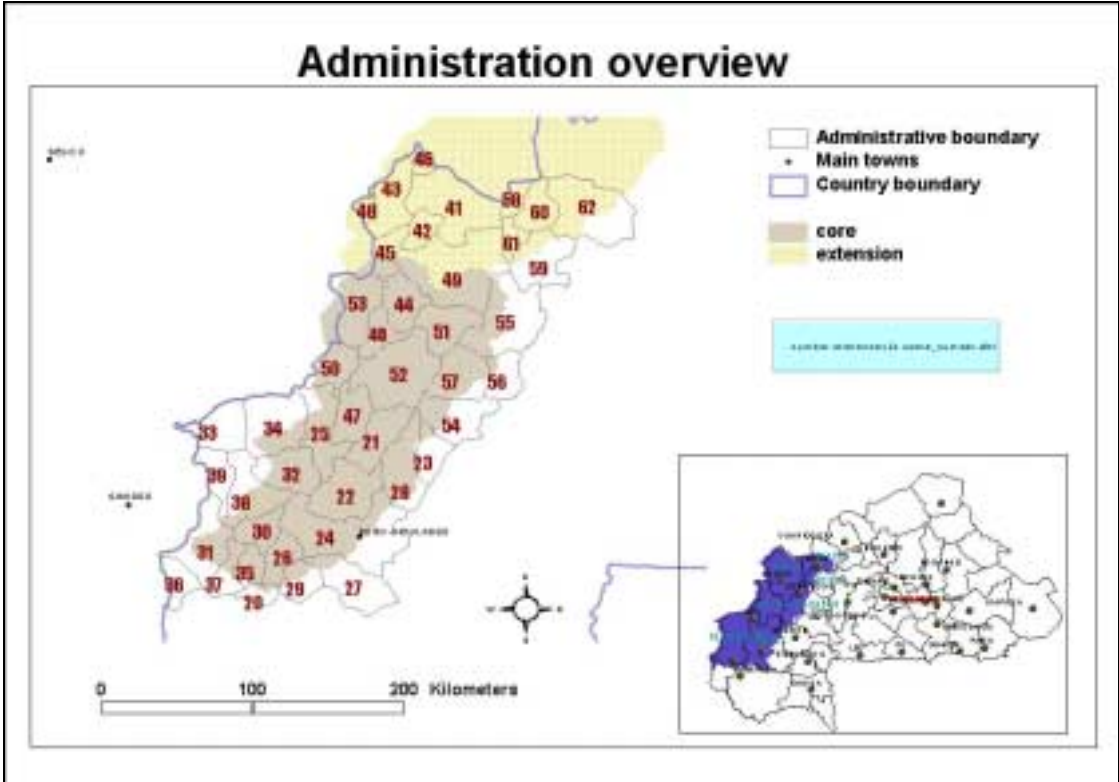


Figure 2 Provinces within the Study Area

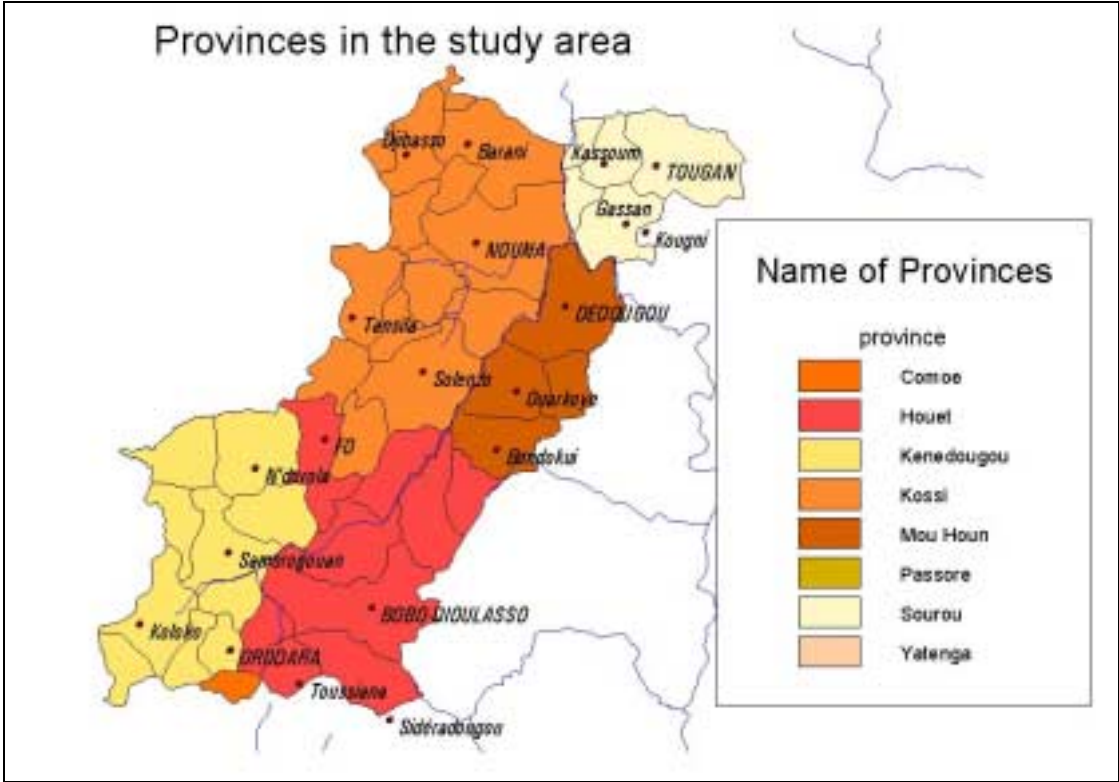


Table 2 Human Population Profile by Departement

Province / Département	Ref no.	Size Sq km	Population 1985	% in study area	% female	Family size	% in agriculture	No. of active age
Houet								
Badema	21	939	30936	100	51	9.8	56.9	5.69
Bama	22	1325	36305	100	49	10.2	58.7	5.87
Bobo-Dioulasso	24	2540	62715	60	48	9.5	51.3	5.13
Fo	25	1174	47461	90	47	9.0	50.9	5.09
Kourignon	26	559	9726	100	43	8.8	51.5	5.15
Satiri	28	1169	25837	80	50	10.3	50.2	5.02
Toussiana	29	557	12382	40	54	8.1	40.9	4.09
Kenedougou								
Djigouera	30	585	14242	100	48	12.3	66.7	6.67
Koloko	31	1248	23835	50	49	14.5	87.9	8.79
Kourouma	32	978	13560	80	48	11.4	49.4	4.94
N'dorola	34	1455	26743	40	48	11.8	46.5	4.65
Orodara	35	427	18326	100	45	11.3	64.7	6.47
Samorogouan	38	1132	13193	60	49	11.1	59.0	5.90
Kossi								
Balave	40	521	9246	100	51	7.9	43.8	4.38
Dokui	44	782	22543	100	51	9.4	56.6	5.66
Kouka	47	779	35372	100	48	10.9	61.4	6.14
Sami	50	686	5798	90	44	8.7	56.3	5.63
Sanaba	51	917	20388	100	48	10.3	63.9	6.39
Solenzo	52	1952	71582	100	51	10.4	61.9	6.19
Tansila	53	1100	20646	90	53	9.5	56.5	5.65
Mou Houn								
Ouarkoye	57	1073	22914	60	47	9.8	54.5	5.45

To refine the actual study area, the “small shadow project 2” has been overlaid by the tsetse fly distribution map. We get for the present study a new limit (See maps) corresponding better to the actual area. In order to collect data the smallest administrative units are used: “Department” (the large administrative unit is “Province”). These administrative units have been changing; so there are two maps covering the same exact study area which have a different number of “Departments” and different names. Some data are collected based on both delineations. Most existing data are in the oldest delineation.

2. HOUSEHOLD INCOME

The household is a socio-economical unit including the members of the same family or not living in the same compound, sharing the same resources under the responsibility of a **head of household (hH)**. **The Household income** is a monetary and non-monetary income used by all the members of the household, i.e.

Global income = Monetary income + Non-monetary income

2.1 Structure of Global income

The average estimate of a household is 7.8 persons.

An average income of a household is 532 045 FCFA per year; that is to say 68.210 FCFA a person.

Table 3 : Structure of Global income per year.

Type of income	Amount In FCFA	%
Non-monetary	268 150	50.4
Monetary	263 895	49.6
Total	532 045	100.0

2.1 Structure of monetary income.

Table 4 : Structure of monetary income

Origin	Amount CFA	%
Crop, Livestock, fruit picking	79 960	30.3
Crop:	49 612	18.8
cotton	21 639	8.2
millet-sorghum	5 014	1.9
groundnut	6 861	2.6
Market gardening	5 805	2.2
fruit picking	2 111	0.8
Livestock	22 431	8.5
Business and non agricultural activities	98 169	37.2
Salaries and non agricultural activities	34 306	13.0
Gifts etc..	51 197	19.4
Total	263 895	100.0

2.2 Detailed structure of monetary income.

Table 5: Agricultural income structure (monetary income)

Origin	%
CROP	62.0
Goundnuts	8.5
Cotton	27.2
Millet-sorghum	6.4
Rice	10.7
Maize	5.0
Niébé	1.5
Fonio	0.2
Sesame	0.9
Other crops	1.7
MARKET GARDEN PRODUCE	7.2
Market gardening	5.3
Fruit gardening	1.9
FRUIT PICKING PRODUCE	2.8
Shea	1.1
Néré	0.5
Others	1.2
LIVESTOCK PRODUCE	28.0
Cattle sale	16.6
Goat sale	5.2
Sheep sale	3.3
Pig sale	1.0
Other animals sale	2.0
TOTAL	100.0

2.3 Detailed average monetary income

Table 6 : Structure of detailed average monetary income according to the sex of the head of the household (%).

	Male	Female	Total
CROPS	61.9	66.4	62.0
Groundnuts	8.5	16.1	8.5
Cotton	27.2	20.0	27.1
Millet-sorghum	6.2	19.2	6.4
Rice	10.8	4.0	10.7
Maize	5.1	1.7	5.0
Niébé	1.5	2.9	1.5
Fonio	0.2	0.0	0.2
Sesame	0.9	0.2	0.9
Other crops	1.6	2.2	1.7
MARKET GARDENING PRODUCE	7.2	2.6	7.2
Market gardening	5.4	2.5	5.3
Fruit growing	1.9	0.1	1.9
FRUIT PICKING PRODUCE	2.8	2.4	2.8
Shea	1.1	1.6	1.1
Néré and derived produce	0.5	0.3	0.5
Other fruit picking produce	1.2	0.5	1.2
LIVESTOCK PRODUCE	28.0	28.7	28.0
Cattle sale	16.6	11.0	16.6
Goat sale	5.2	6.6	5.2
Sheep sale	3.3	5.1	3.3
Pig sale	0.9	5.2	1.0
Sale of other animals	2.0	0.6	2.0
TOTAL	100.0	100.0	100.0

2.4 Structure of food related expenses

Table 7 : Structure of the household food expenses

OUTCOME	Annual average consumption expenses (CFA)	Food consumption shares (%)	Budget shares (%)	Self consumption rate (%)
Cereal, products	101.214	41.6	9.7	66.2
Leguminous (niébé)	7.856	3.2	0.5	73.5
Meat, fish, eggs	23.466	9.6	5.5	10.5
Milk-dairy	3.940	1.6	0.7	36.5
Oil and fat content	15.766	6.5	2.7	36.2
Fruit and vegetables	15.680	6.4	2.7	33.7
Sugar	5.770	2.4	1.5	0.3
Coffee, tea, cola	7.140	2.9	1.9	1.0
Drinks	10.567	4.3	2.5	10.0
Tobacco	6.773	2.8	1.7	3.3
Others	45.313	18.6	9.8	17.6
TOTAL FOOD	243 488	100.0	38.7	40.1

Table 8 : Structure of total expenses relating to cereal products

	Annual average consumption per household en CFAF	Share (%)	Self consumption rate
Rice	22.093	21.8	27.1
Millet-sorghum	58.220	57.6	84.8
Maize	15.896	15.7	68.7
Flour	628	0.6	15.6
Bread	4.376	4.3	1.8
TOTAL	101.214	100.0	68.5

3. Poverty

The following data of the current study are taken from two detailed national inquiries on household life conditions: the first inquiry was carried out from October 1994 to January 1995 and the second one from May to August 1998. Both used a standard model of questionnaire (Marchant *et al* 1987) with very slight differences. The first inquiry collected data from 8642 households while the second inquiry collected data from only 8478 households.

The main element that makes the difference between the two origins of the data is the period of observation. The second priority inquiry took place from May to August, a period during which food provision in rural area is not easy and a crucial issue.

The above difference implies some differences as far as household expenses are concerned. The equipment and materials are not affected by these differences, consequently, the analysis is based on these elements.

3.1 How to measure the well-being state: building the indicators

It is very difficult and complex to define, measure and estimate poverty very precisely. What appears in the publications is that poverty implies human well-being. Building an indicator of well-being will allow comparisons between people in terms of satisfaction of their needs. There are two categories of people: poor people, i.e. those who cannot reach the indicator of well-being and non-poor people, i.e. those beyond this indicator.

As explained previously, it is difficult to measure human well-being because of subjective and multi-dimensional items such as non-quantifiable components and the usefulness of a person. Nevertheless, it is generally acknowledged that individual well-being can be represented by a monetary unit. Considering this complexity, it is suggested that the unit of measurement of human well being the quintile :

Table 9 : The quintile of individual life styles

Quintiles	Total average expenses per capita and per year (CFA F)	Life style
1 st quintile	Less than 49 706	Extremely poor
2 nd quintile	From 49 706 to less than 68 220	Moderately poor
3 rd quintile	From 68 220 to less than 91 530	Acceptable life style
4 th quintile	From 91 530 to less than 140 331	Not poor
5 th quintile	140 331 and more	Rich

Annual rate of population increase: 2,37%

Annex 2

Having established parameters for measurement, the following issues can be examined:

- What are the characteristics of people who move from the state of poverty to the one of non poverty with special reference to the socio-economical group, sex, etc. ?
- What are the specific influences and contribution of poor and non-poor people on the global characteristics of the population ?

Figure 3 Soil Suitability in in the Study Area

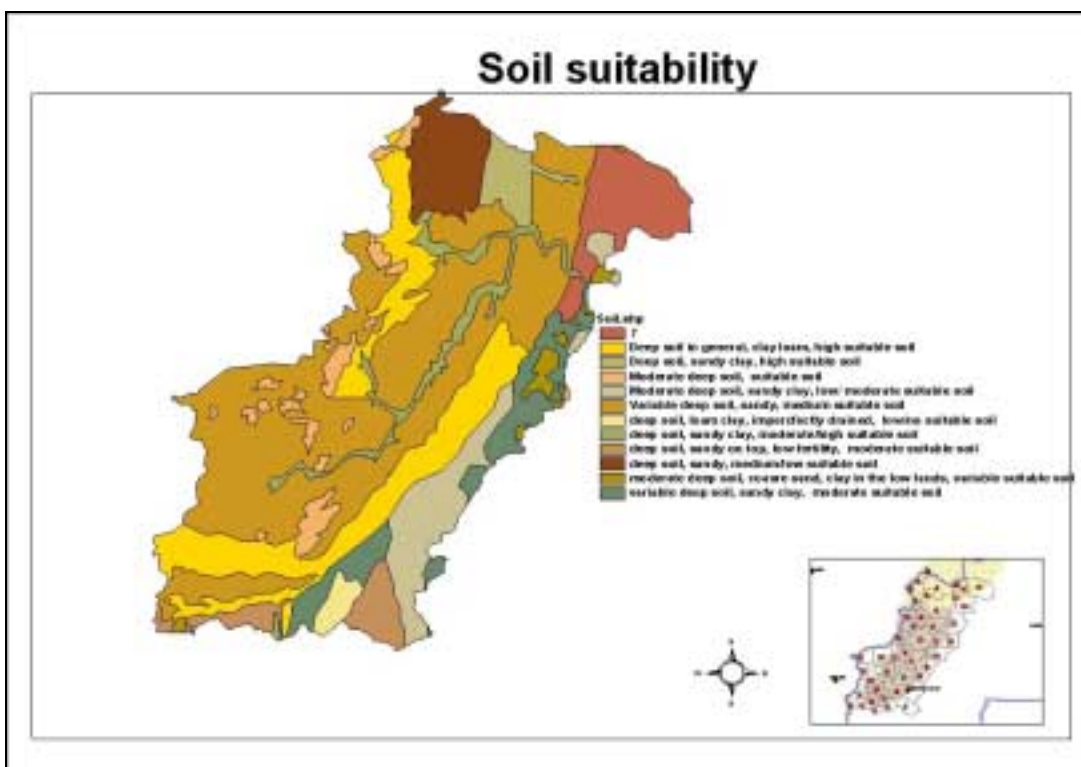


Figure 4 Vegetation in the Study Area

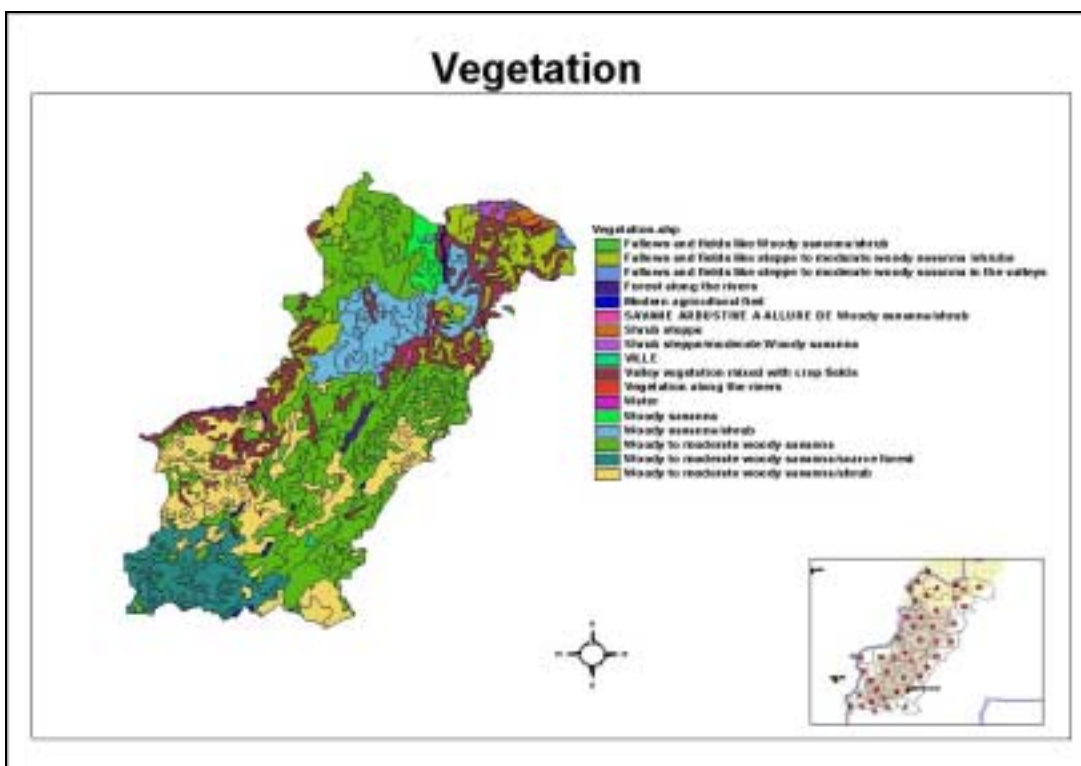


Table 10 Livestock Profile by Departement

Province/ Departement	Ref. No.	Sq km	% in study area	No.Livestock in Study Area ????		
				Cattle	Sheep	Goats
Houet						
Badema	21	939	100	3403	23202	6497
Bama	22	1325	100	7261	35942	10892
Bobo-Dioulasso	24	2540	60	6899	29476	11289
Fo	25	1174	90	9967	61699	4271
Kourignon	26	559	100	1070	8170	1070
Satiri	28	1169	80	2584	14985	4392
Toussiana	29	557	40	0	1486	3343
Kenedougou						
Djigouera	30	585	100	5839	7263	29623
Koloko	31	1248	50	1907	1192	5005
Kourouma	32	978	80	2848	4339	9492
N'dorola	34	1455	40	8023	4279	14709
Orodara	35	427	100	3848	5498	9163
Samorogouan	38	1132	60	1451	1715	5013
Kossi						
Balave	40	521	100	2866	6195	14794
Dokui	44	782	100	4734	11497	18034
Kouka	47	779	100	7428	14503	46691
Sami	50	686	90	1739	3247	52182
Sanaba	51	917	100	4078	4078	23446
Solenzo	52	1952	100	15032	35791	85183
Tansila	53	1100	90	4129	1032	24775
Mou Houn						
Quarkoye	57	1073	60	13978	21768	11686
Total in Study Area				109084	297357	391550

Figure 5 Distribution of Cattle, Goats and Ploughs

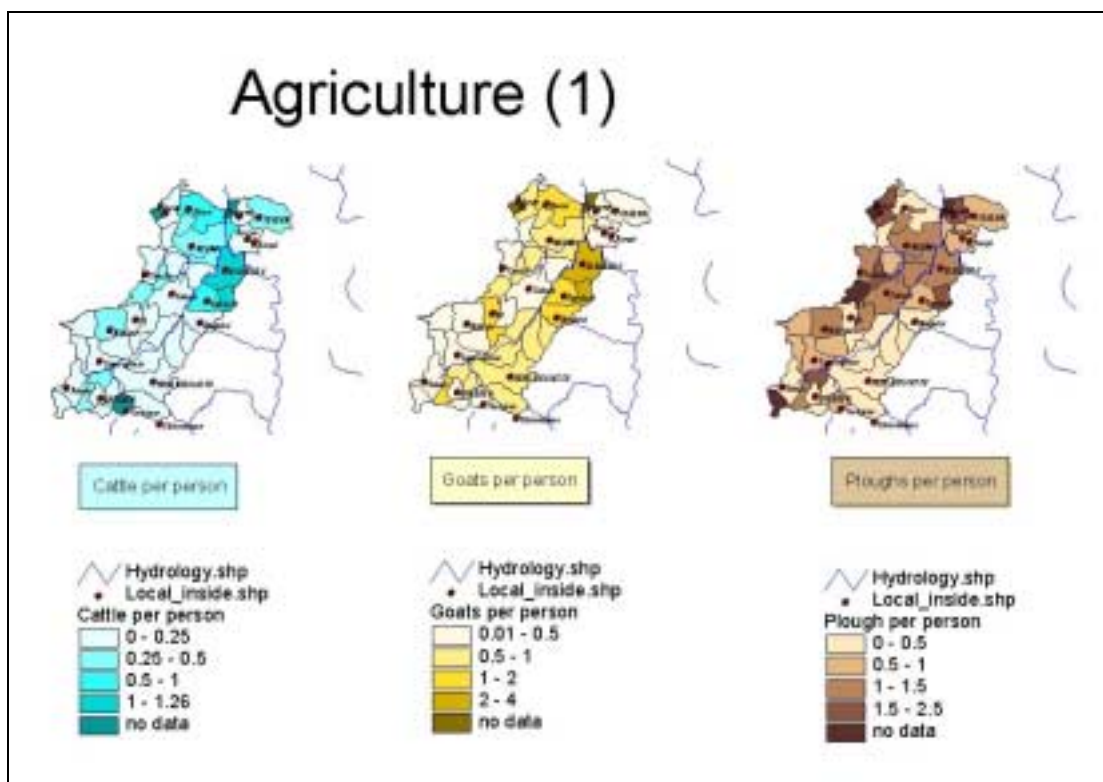


Figure 6 Agro-ecological Zones



Table 11 Areas of Main Crops Cultivated

Province/ Département	Ref. No.	Total Size Sq km	Millet ha	Sorghum ha	Maize ha	Cash Crops ha	Total Area Cultivated
Houet							
Badema	21	939	670	1169	2399	960	5198
Bama	22	1325	1300	1254	2050	562*	5166
Bobo-Dioulasso	24	2540	715	992	2609	484	4800
Fo	25	1174	1031	1215	2274	953	5473
Kourignon	26	559	1040	1049	1093	1110	4292
Satiri	28	1169	740	1431	2712	1029	5912
Toussiana	29	557	567	466	1217	320	2570
Kenedougou							
Djigouera	30	585	720	772	2852	480	4824
Koloko	31	1248	1000	719	1709	902	4330
Kourouma	32	978	915*	992	2596	460	4963
N'dorola	34	1455	1500	1183	2896	253	5832
Orodara	35	427	260	705	1420	293	2678
Samorogouan	38	1132	849	659	1782	694*	3984
Kossi							
Balave	40	521	1260	1674	1773	549	5256
Dokui	44	782	1245	905	1585	465	4200
Kouka	47	779	720	1317	2399	722	5158
Sami	50	686					
Sanaba	51	917	1018	1300	2259	760	5337
Solenzo	52	1952	952	1385	2523	1070	5930
Tansila	53	1100	603	974	1414	481	3472
Mou Houn							
Ouarkoye	57	1073	691	1120	1533	367*	3711
Areas Cultivated		-	17796	21281	41095	12914	93086
Percentage		4.3% ¹	19% ²	23% ²	44% ²	14% ²	-

* Estimate

¹ Of total Area² Of Cropped Area

Table 12 Yields of Main Crops

Province / Departement	Ref. No.	Yield (kg/ha)			
		Millet	Sorghum	Maize	Cash Crops
Houet					
Badema	21	670	1169	2399	960
Bama	22	1300	1254	2050	*
Bobo-Dioulasso	24	715	992	2609	484
Fo	25	1031	1215	2274	*
Kourignon	26	1040	1049	1093	1110
Satiri	28	740	1431	2712	*
Toussiana	29	567	466	1217	320
Kenedougou					
Djigouera	30	720	772	2852	480
Koloko	31	1000	719	1709	902
Kourouma	32	*	992	2596	460
N'dorola	34	1500	1183	2896	253
Orodara	35	260	705	1420	293
Samoghohiri	37	536	448	2160	340
Kossi					
Balave	40	1260	1674	1773	549
Dokui	44	1245	905	1585	465
Kouka	47	720	1317	2399	722
Sami	50	*	*	*	*
Sanaba	51	1018	1300	2259	760
Solenzo	52	952	1385	2523	1070
Tansila	53	603	974	1414	481
Mou Houn					
Ouarkoye	57	691	1120	1533	*
Average Yield		882	1050	2102	603

* No data available

Figure 6 Crop Yields by Departement

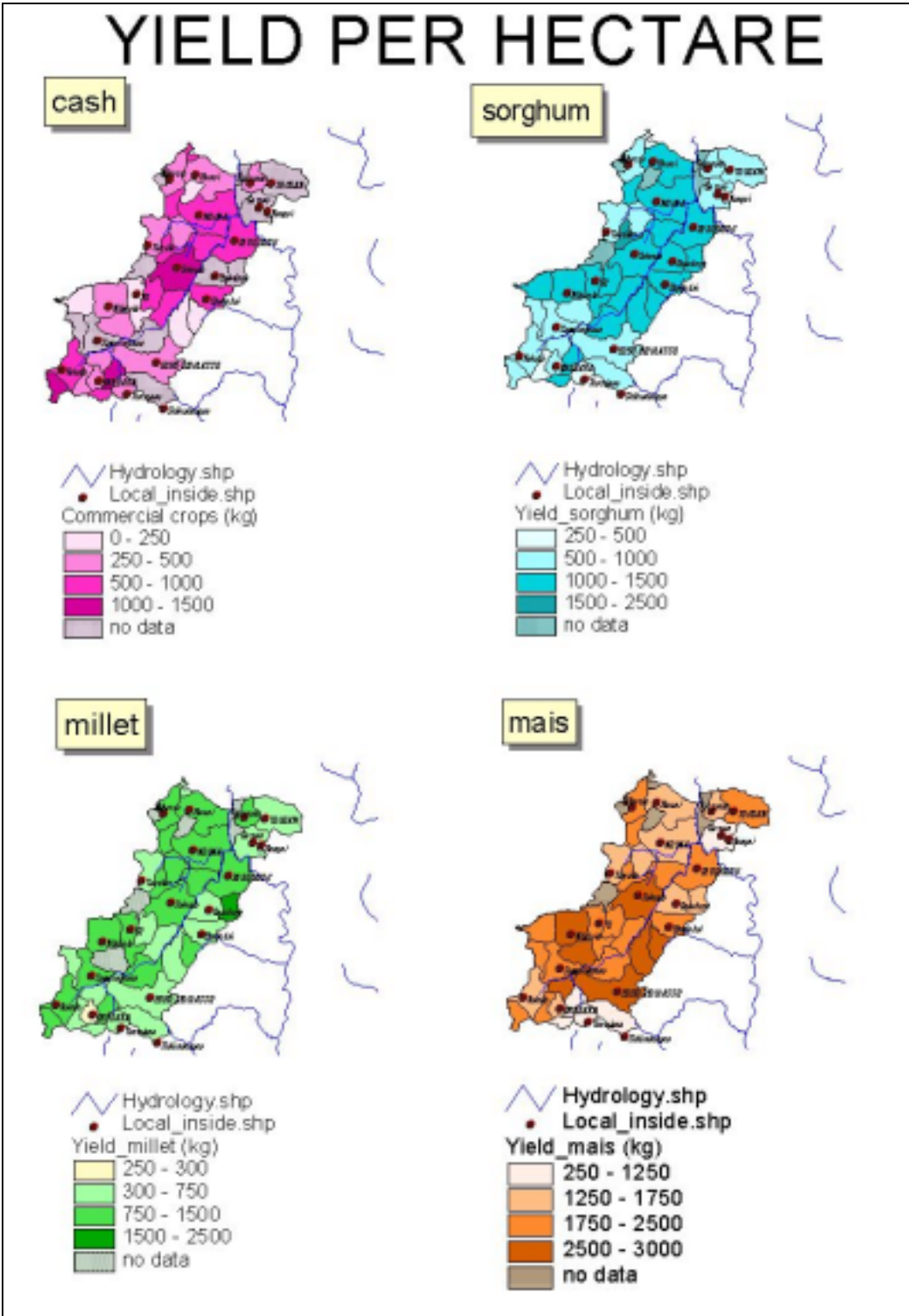


Table 13 Cultivated Area per Person

Province / Departement	Ref. No.	Sq km	Cultivated Area per Person (ha)					Total
			Sorghum	Millet	Maize	Cash Crops	Other	
Houet								
Badema	21	939	0.21	0.09	0.10	0.11	0.02	0.53
Bama	22	1325	0.20	0.22	0.10	0.03	0.03	0.58
Bobo-Dioulasso	24	2540	0.20	0.21	0.09	0.08	0.02	0.60
Fo	25	1174	0.21	0.19	0.11	0.11	0.03	0.65
Kourignon	26	559	0.20	0.15	0.02	0.09	0.10	0.56
Satiri	28	1169	0.20	0.16	0.11	0.11	0.03	0.61
Toussiana	29	557	0.10	0.14	0.04	0.10	0.10	0.48
Kenedougou								
Djigouera	30	585	0.11	0.15	0.09	0.20	0.01	0.56
Koloko	31	1248	0.10	0.16	0.11	0.10	0.08	0.55
Kourouma	32	978	0.11	0.01	0.30	0.20	0.02	0.64
N'dorola	34	1455	0.10	0.07	0.30	0.20	0.01	0.68
Orodara	35	427	0.11	0.13	0.10	0.11	0.10	0.55
Samoghohiri	37	474	0.11	0.16	0.10	0.03	0.11	0.51
Samorogouan	38	1132	0.20	0.12	0.30	0.31	0.02	0.95
Kossi								
Balave	40	521	0.20	0.24	0.10	0.06	0.03	0.63
Dokui	44	782	0.30	0.42	0.05	0.10	0.01	0.88
Kouka	47	779	0.30	0.13	0.09	0.04	0.02	0.58
Sami	50	686	*	*	*	*	*	
Sanaba	51	917	0.40	0.17	0.10	0.10	0.01	0.78
Solenzo	52	1952	0.30	0.11	0.11	0.11	0.02	0.65
Tansila	53	1100	0.21	0.15	0.02	0.11	0.01	0.50
Mou Houn								
Ouarkoye	57	1073	0.40	0.21	0.07	0.05	0.02	0.75

* No data available

Figure 7 Crop Areas Cultivated Per Person

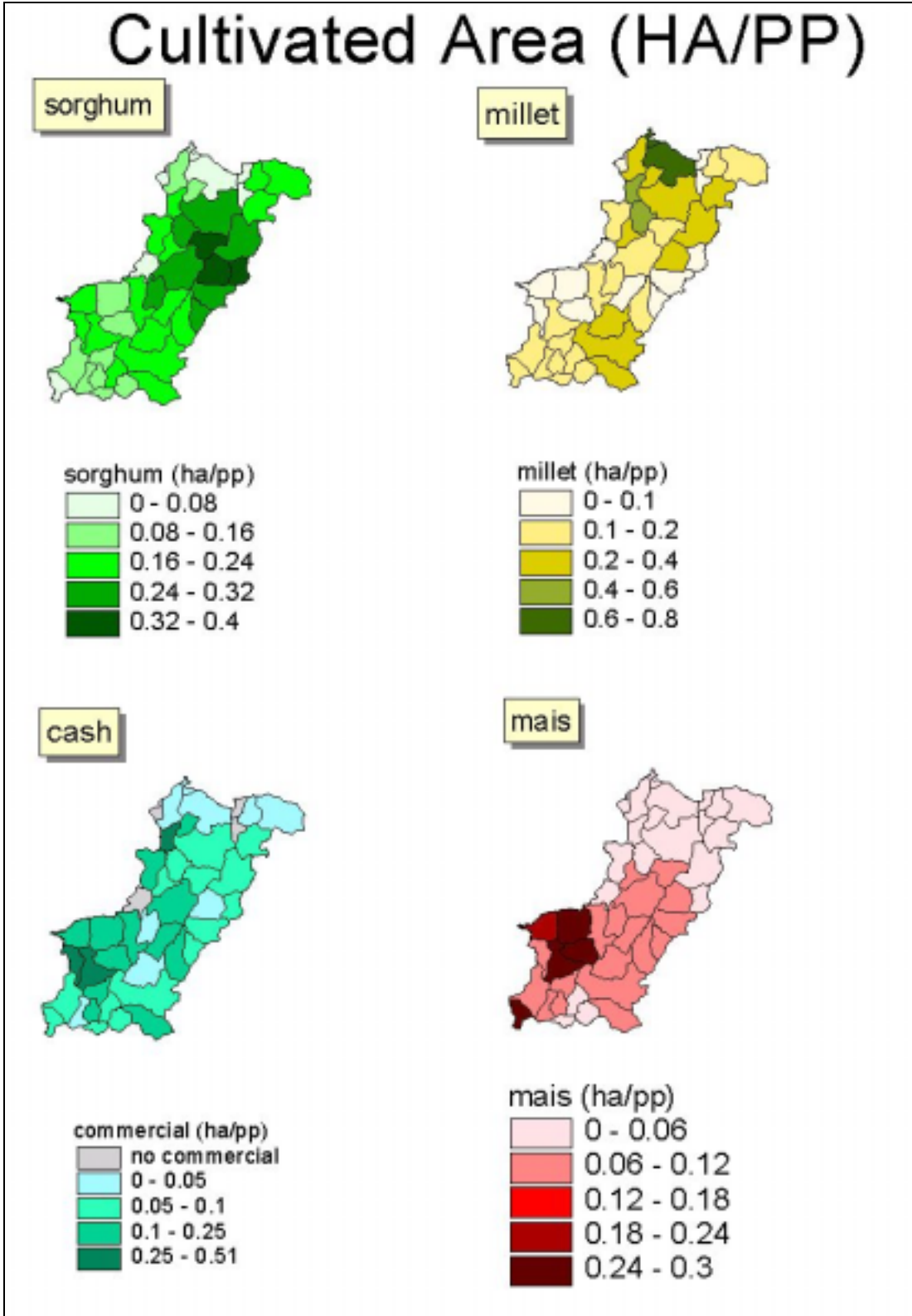
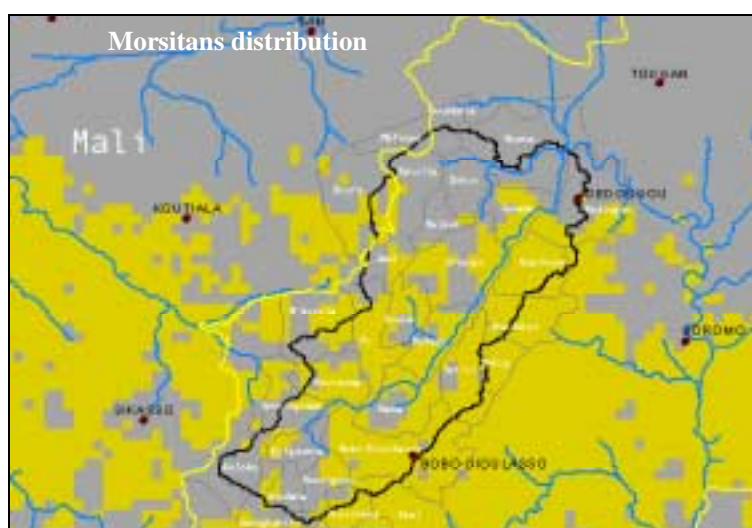
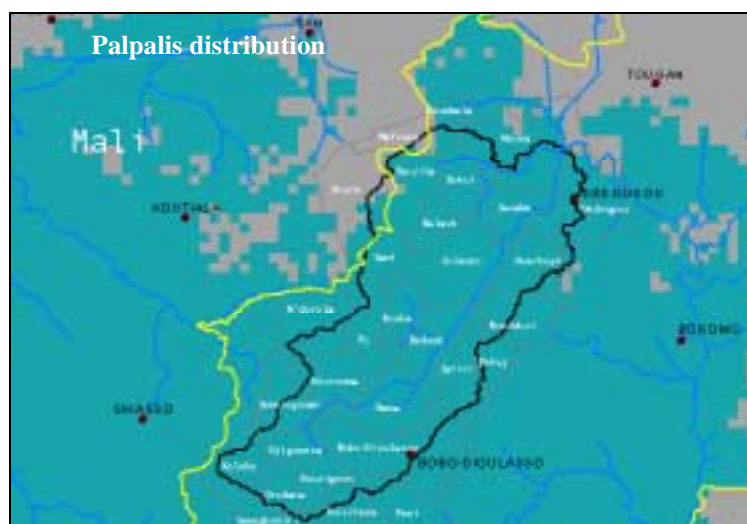
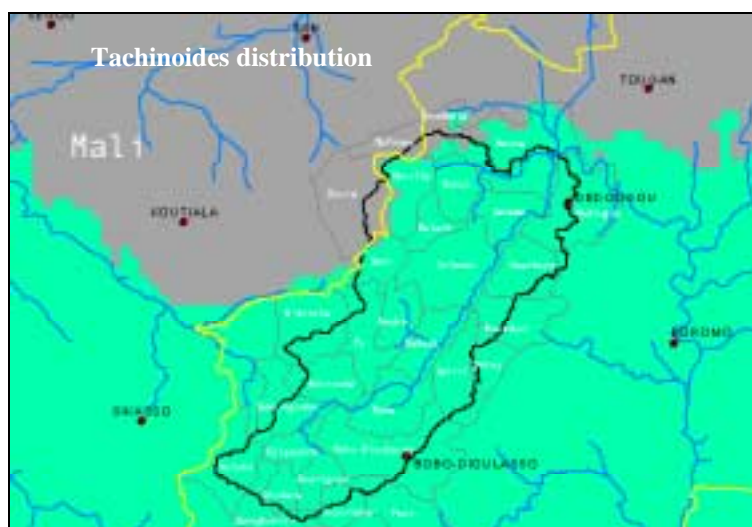


Figure 8 Distribution of Tsetse Species



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