

Situational Analysis and Resource Mapping

Consultancy Report

For

Rural Transport Services Project

Presented to

Kenya Network for Draught Animal Technology (KENDAT)

By

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PART IV

SITUATIONAL ANALYSIS AND RESOURCE MAPS

FOR

MWEA DIVISION

SITUATIONAL ANALYSIS OF MWEA DIVISION

Location and Area:

Mwea Division is located in the Southern Part of Kirinyaga District, Central province. The total land area of Mwea Division is about 501km². (Fig. 1)

Topography:

Mwea Division has a gently rolling plains and isolated hills like Marinduko and Gathigiriri. There are different relief features with altitudes rising from 1110 m to 1393m above sea level with the exception of the hill tops of Marinduko and Gathigiriri which have higher altitudes.

Climate:

The division has a tropical type of climate with two distinct rainfall seasons. These are the long rains of March to May and the short rains of October to November. Rainfall is generally low and the area is potentially poor. Annual mean temperature is usually high as the division falls under semi-arid environment. Evapo-transpiration rate is high resulting in low crop production yield.

Geological formation:

There are different types of soils in the division. Most of it is covered by black cotton soil intercepted by clay soils. There are sheets of sandy and silty soils as the result of run-off and run-on here and there.

Population size:

According to population projection 2001, the division had a population of 153, 798. Population density for Mwea Division is about 265 persons per km². The population distribution is pattern is inform of individual household and cluster of villages. (Fig.2).

Water resources:

The division has different sources of water: rivers, canals, underground water and roof catchment. The canals were constructed to supply water to the division for irrigation purposes. There are also tapped for irrigating horticultural crops. There is great potential for underground water in the division, however, the underground water is not suitable for domestic use as it is either contaminated or salty. (Fig.3).

Energy supply:

The division centre, some schools, administrative centre, tea factories, coffee factories, rice mills have been supplied with electricity. The rest of the division relays on fuelwood for its energy requirement in addition to petroleum fuel like paraffin and gas. (Fig.4.)

Agricultural activities:

Mwea division was previously a mono-crop area growing rice. Currently, it produces tea, coffee and other variety of horticultural crops. Maize is the main crop grown after rice. There is land degradation due to increasing population and lack of appropriate method of soil conservation. Other main food crops include beans, potatoes, bananas, sweetpotatoes. The agro-ecological zones are distinctive. (Fig 5).

Livestock production:

Livestock production activities include production of milk, eggs, beef, mutton, goat meat and honey for local consumption apart from hides and skins. The main livestock produced in the division are cattle, sheep, poultry, pigs and rabbits which is about 22,076. Both beef and dairy cattle are produced in Mwea division.

Communication network:

The division has a total of 115km classified and 103km of unclassified roads. Most of the roads are maintained by Kirinyaga County Council. The road network in the division is adequate, however, during the rainy seasons, the earth roads become impassable. Donkey and oxen carts and bicycle are the major means of rural transport.

There is one airstrip in the division. Post and telecommunication facilities are poor and vandalised in rural areas (Fig. 6,7 & 8).

Educational facilities:

According to District Education Office, Kerugoya, 1996, there were about 57 primary schools and 10 secondary schools in Mwea division. There are 3 youth polytechnics, 1 family life centre and 1 private commercial college. The number of these facilities have increased currently (Fig.9).

Health facilities:

Different health facilities are evenly distributed in the division. There are 2 health centres, 20 dispensaries, 3 outreach clinics and 2 private nursing homes. (Fig.10).

Mining:

Mining activities are carried out in Murinduko and Mutithi locations like for quarry stones, hardcore, ballast and quarry dust which have employed many local communities.

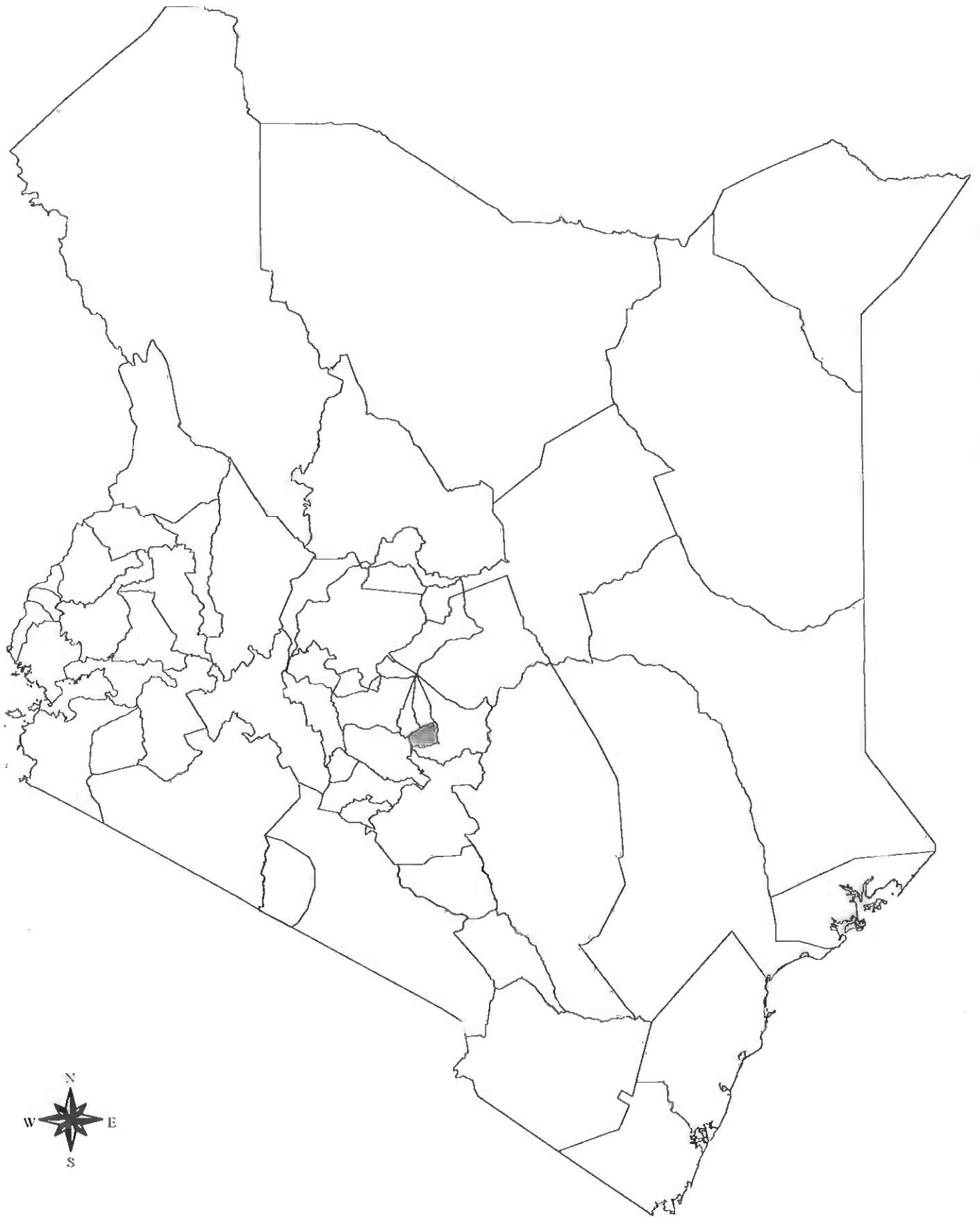
Forestry:

The division has a gazetted forest area known as Rural Afforestation Extension Scheme around Gathigiriri and Murinduko hill slopes where there were originally no trees or bushes. Agroforestry is also practised to supplement forestry activities which include the growing of *Grevillia* and *Eucalyptus* used for fuel, construction and fodder.

Administrative Centres:

Administrative centres refer to the location and distribution of divisional headquarter, different GOK departments, research institutions, Processing plants, Police Posts, Chiefs and assistant chiefs offices in the division. (Fig. 11).

Fig. 1 Location of Mwea Division



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Fig. 2. Settlement Patterns In Mwea Division

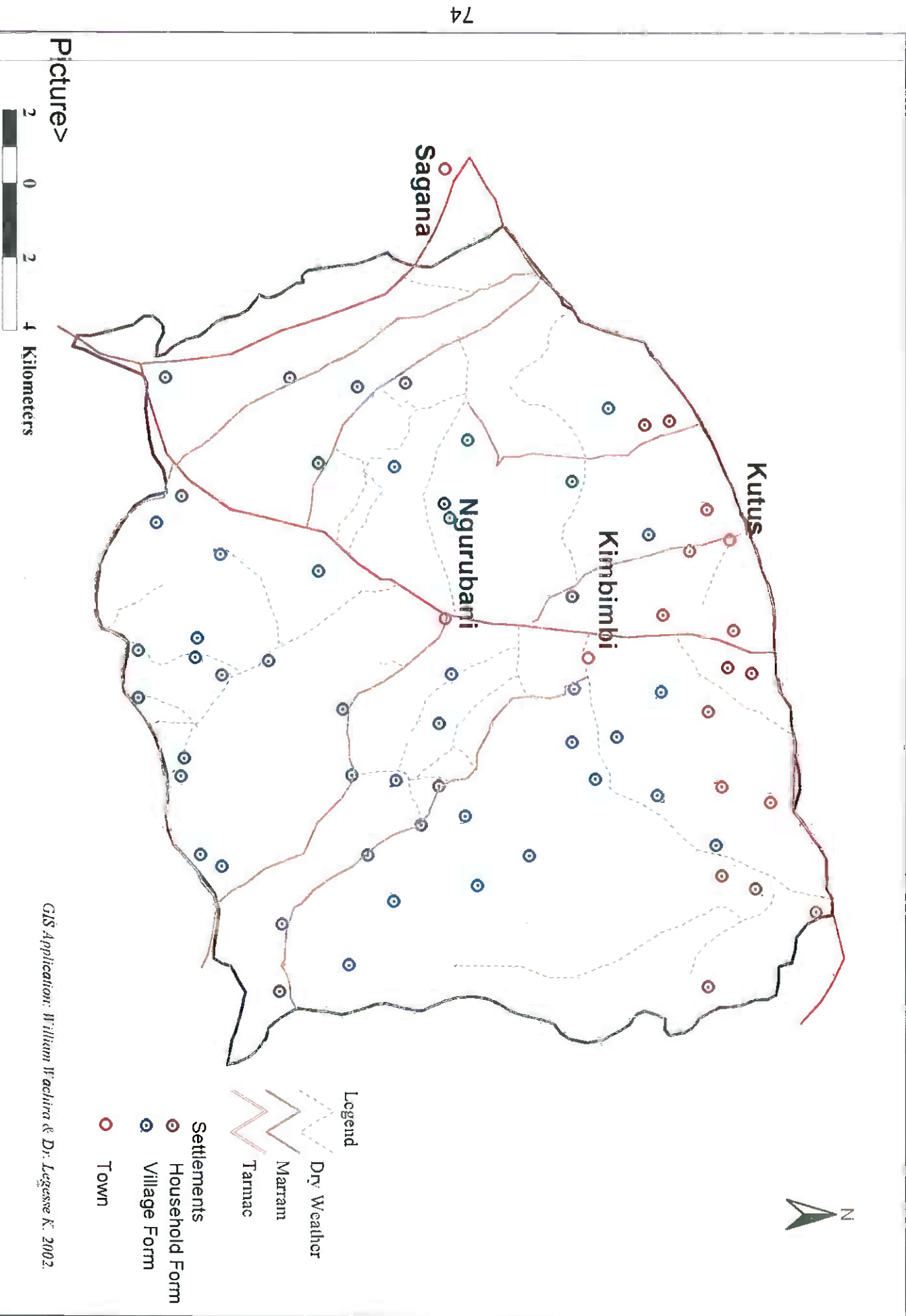


Fig. 3. Water Supply Systems In Mwea Division

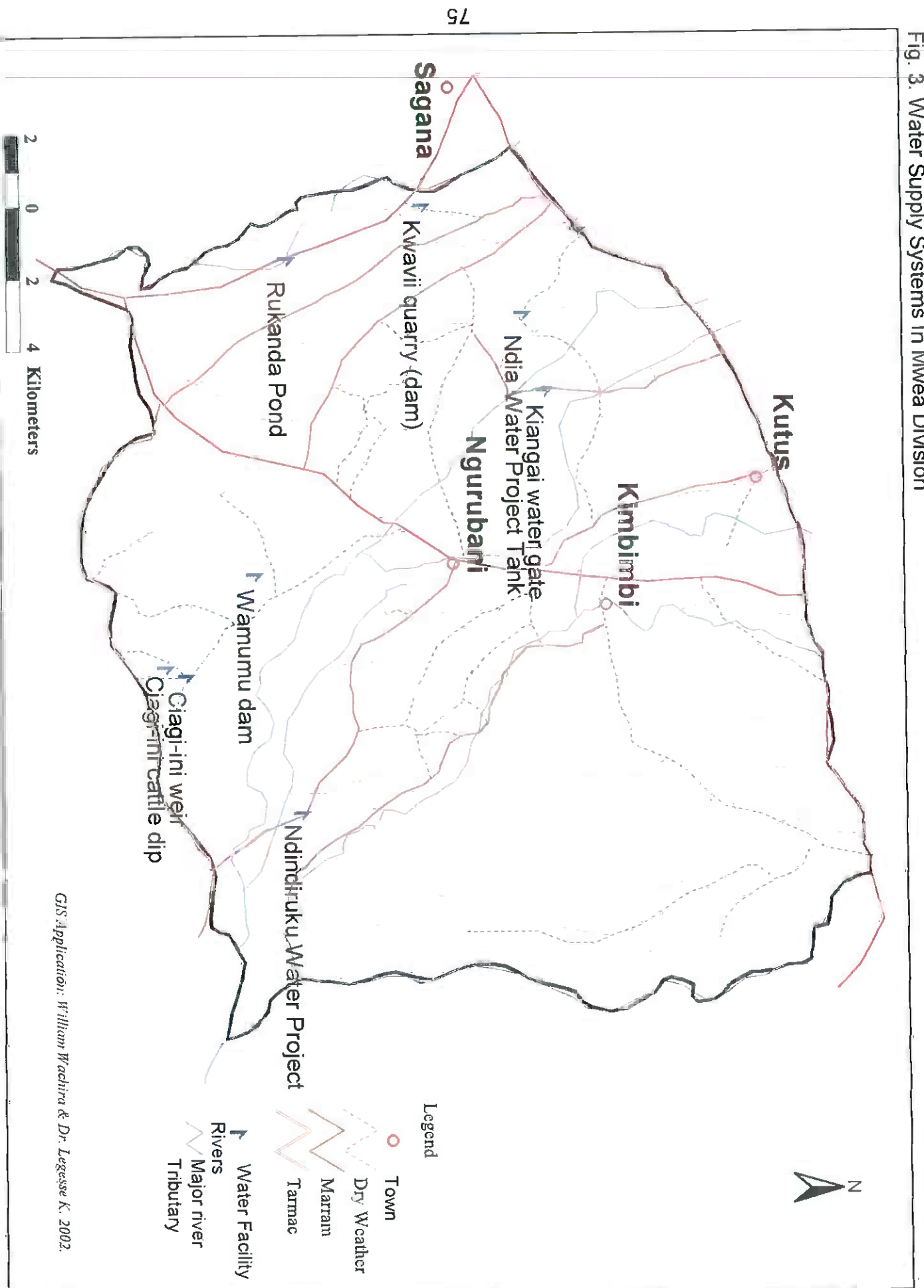


Fig. 4. Energy Supply Systems In Mwea Division

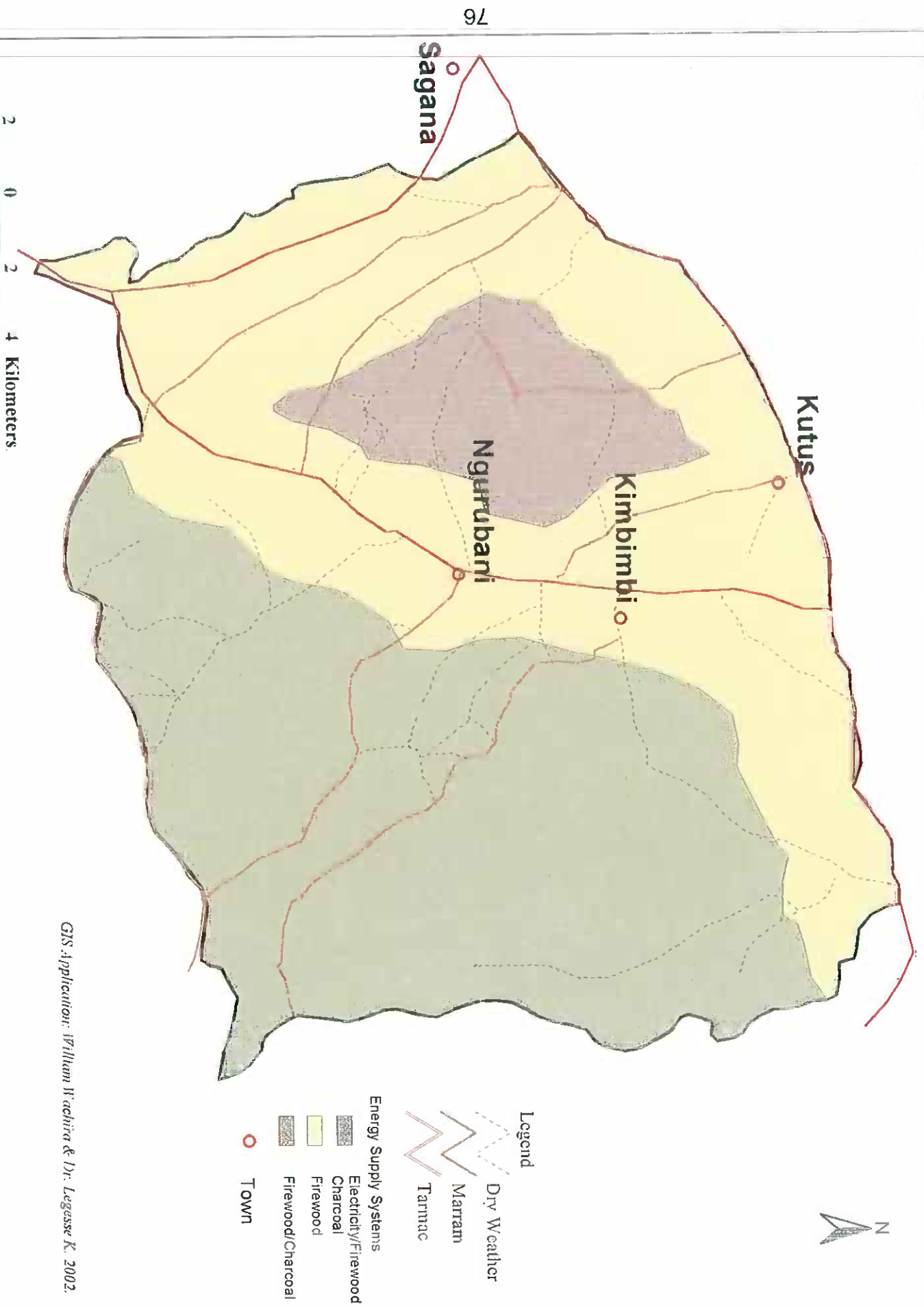
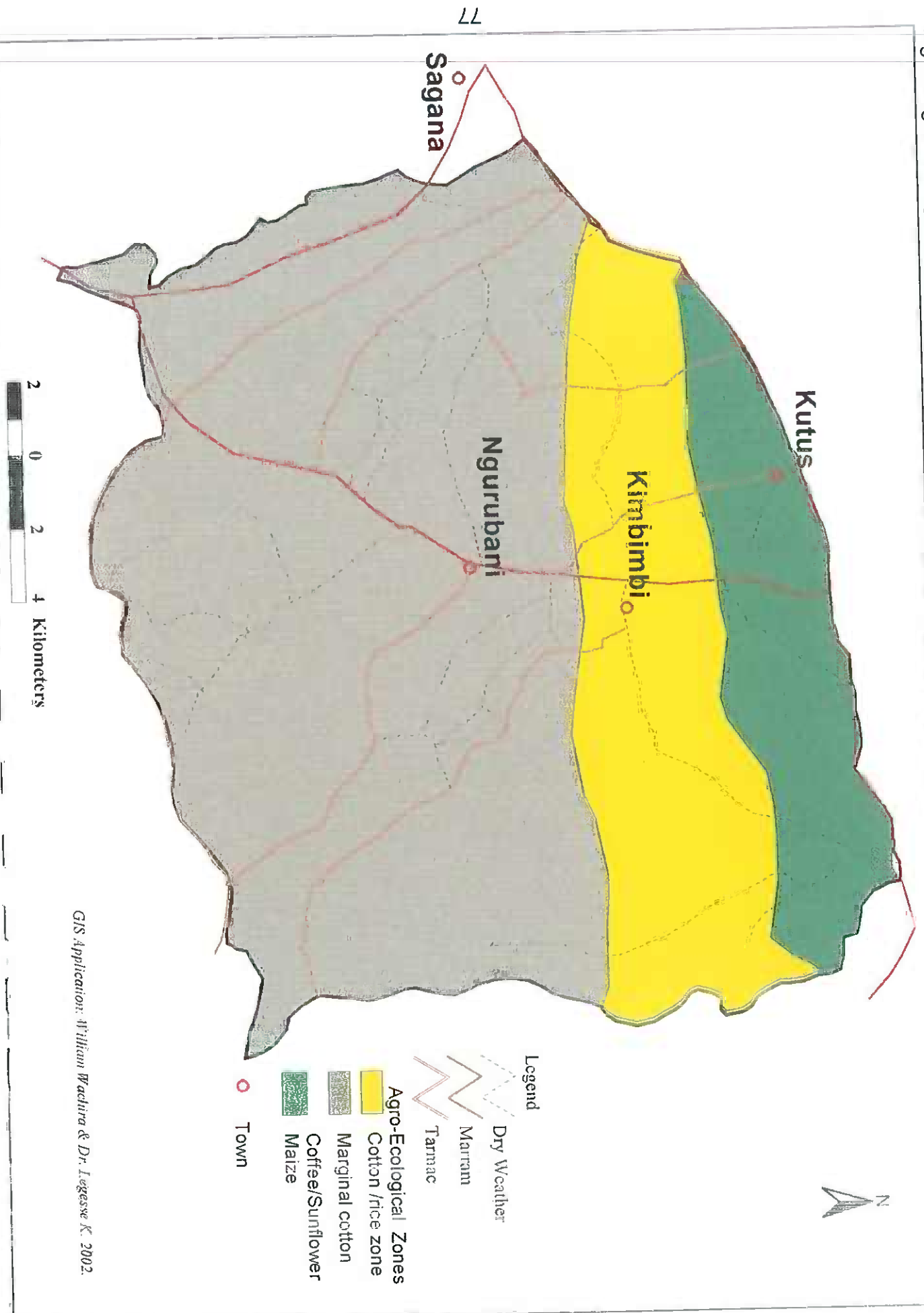


Fig 5. Agro-Ecological Zones In Nwea Division



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Fig. 6. Major Road Network And Market Centres In Mwea Division

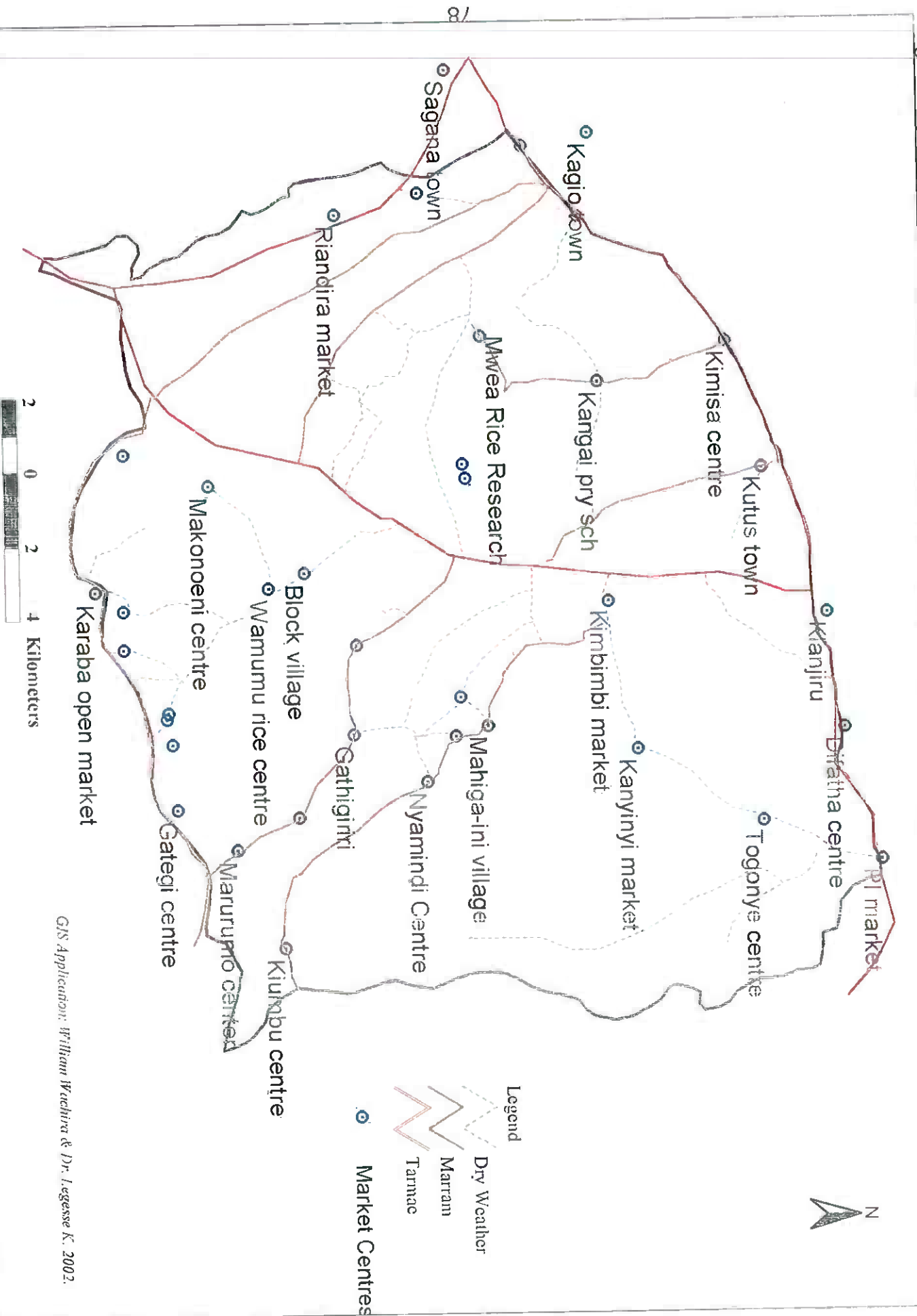
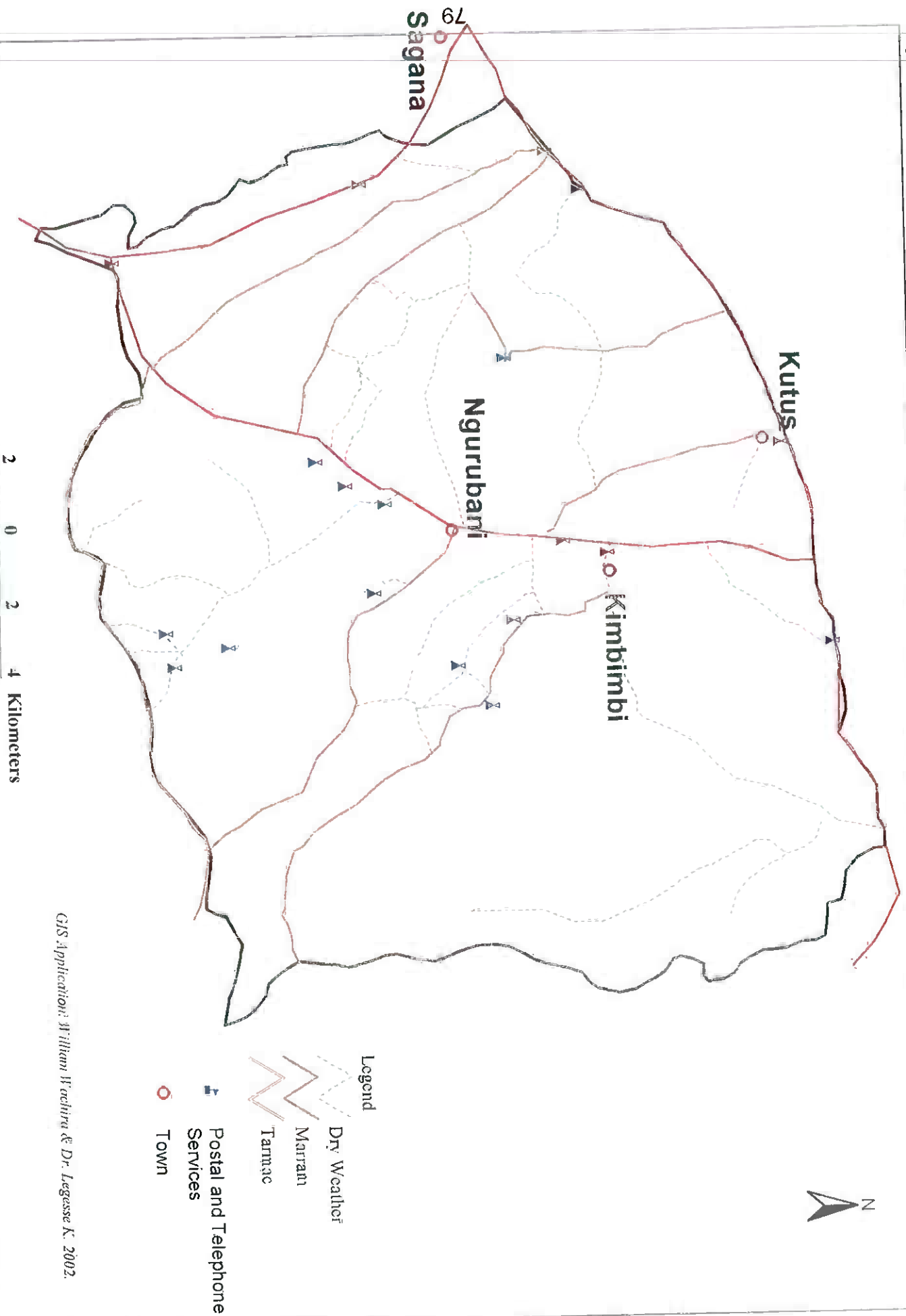


Fig. 7 Communication Systems In Mwea Division



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Fig. 8. Transport Systems In Mwea Division

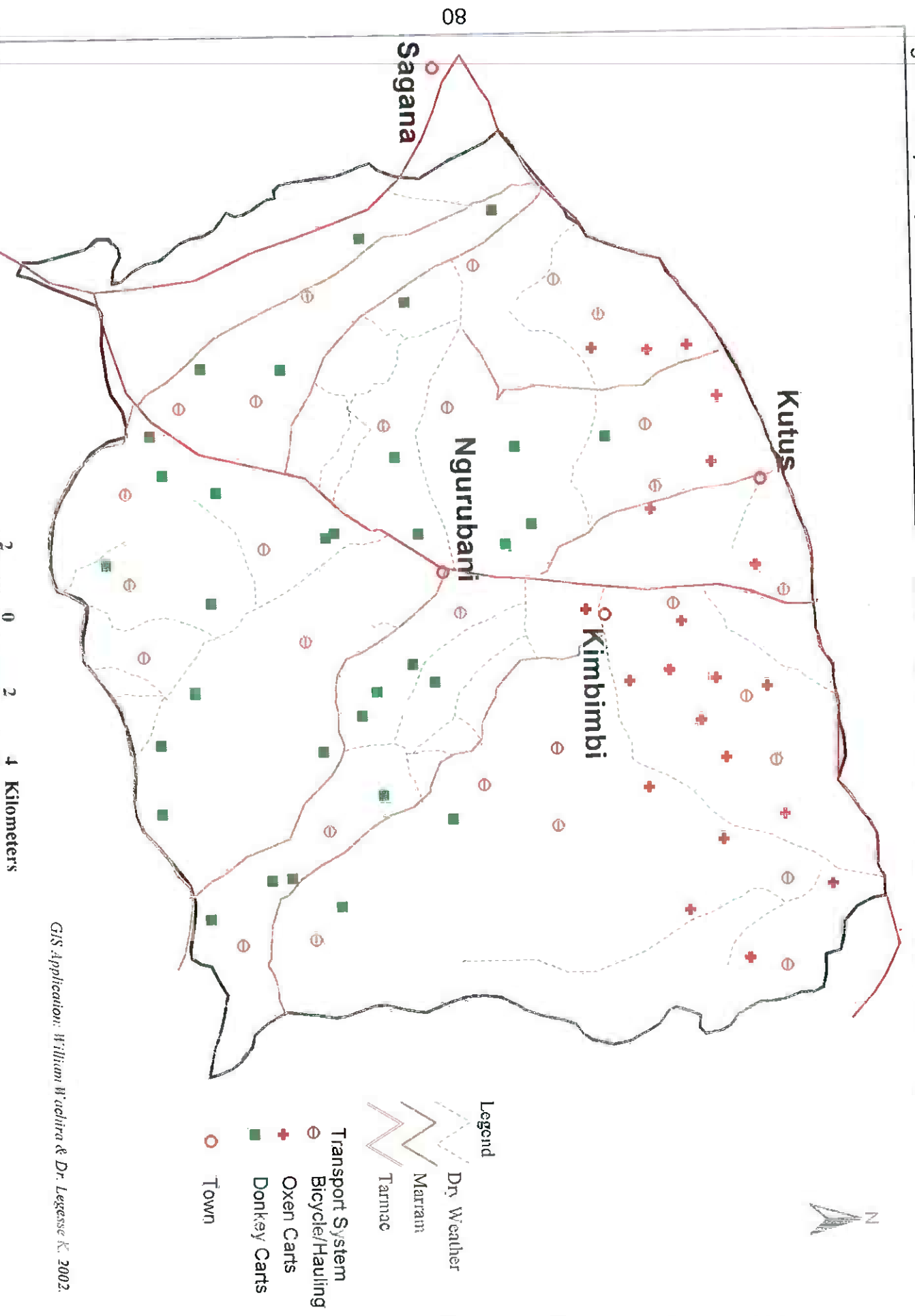


Fig 9. Education Facilities In Mwea Division

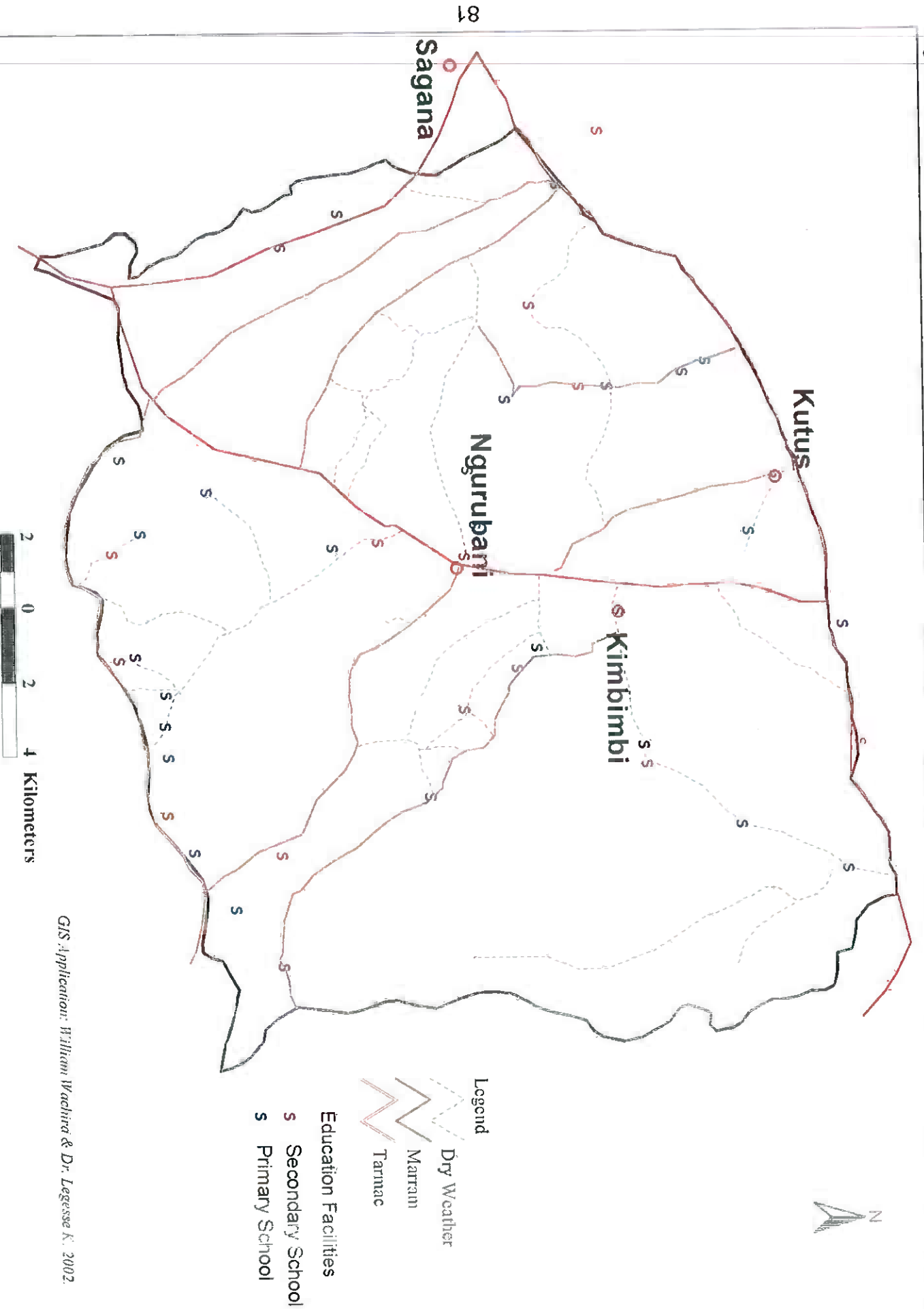
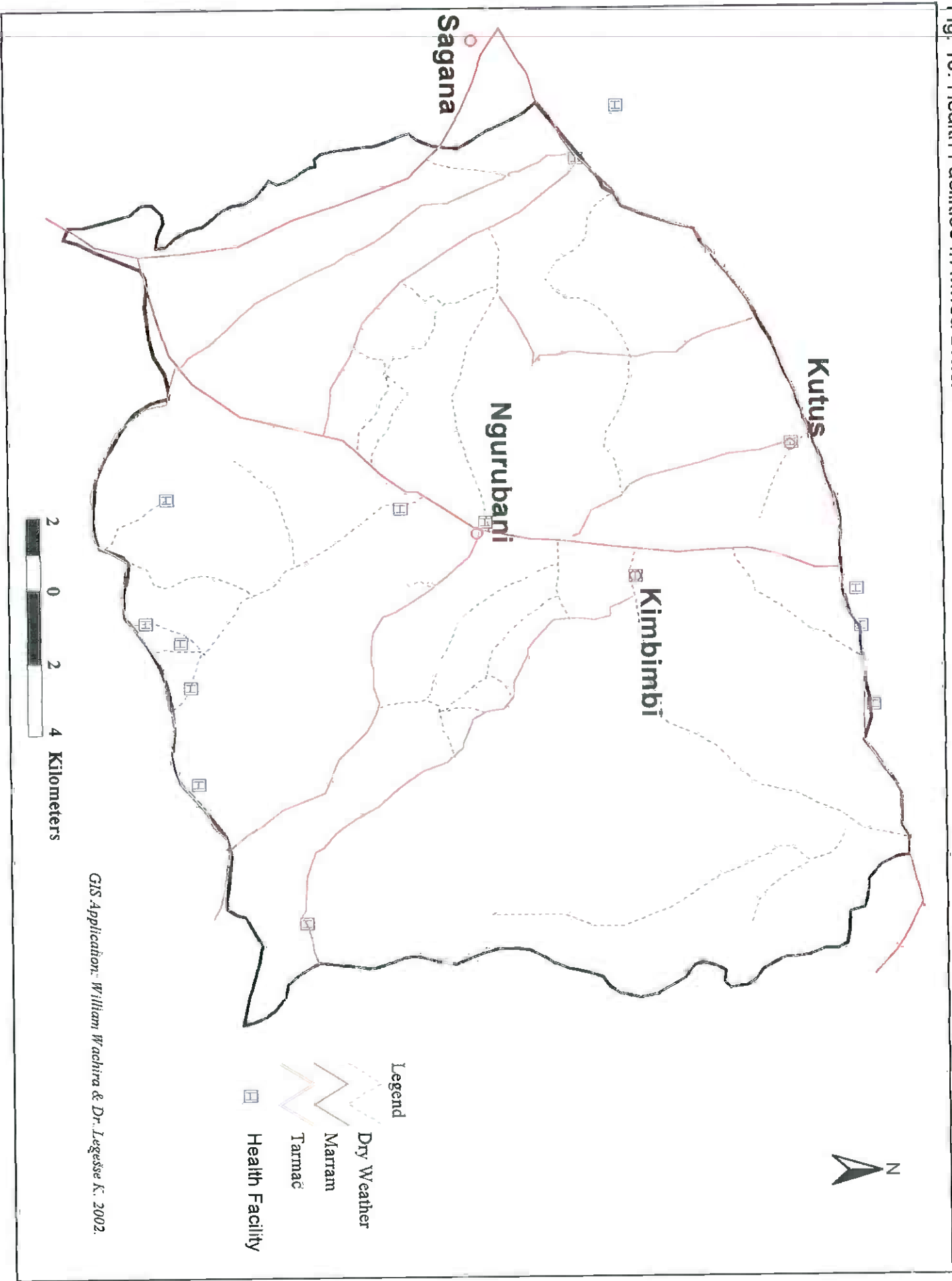
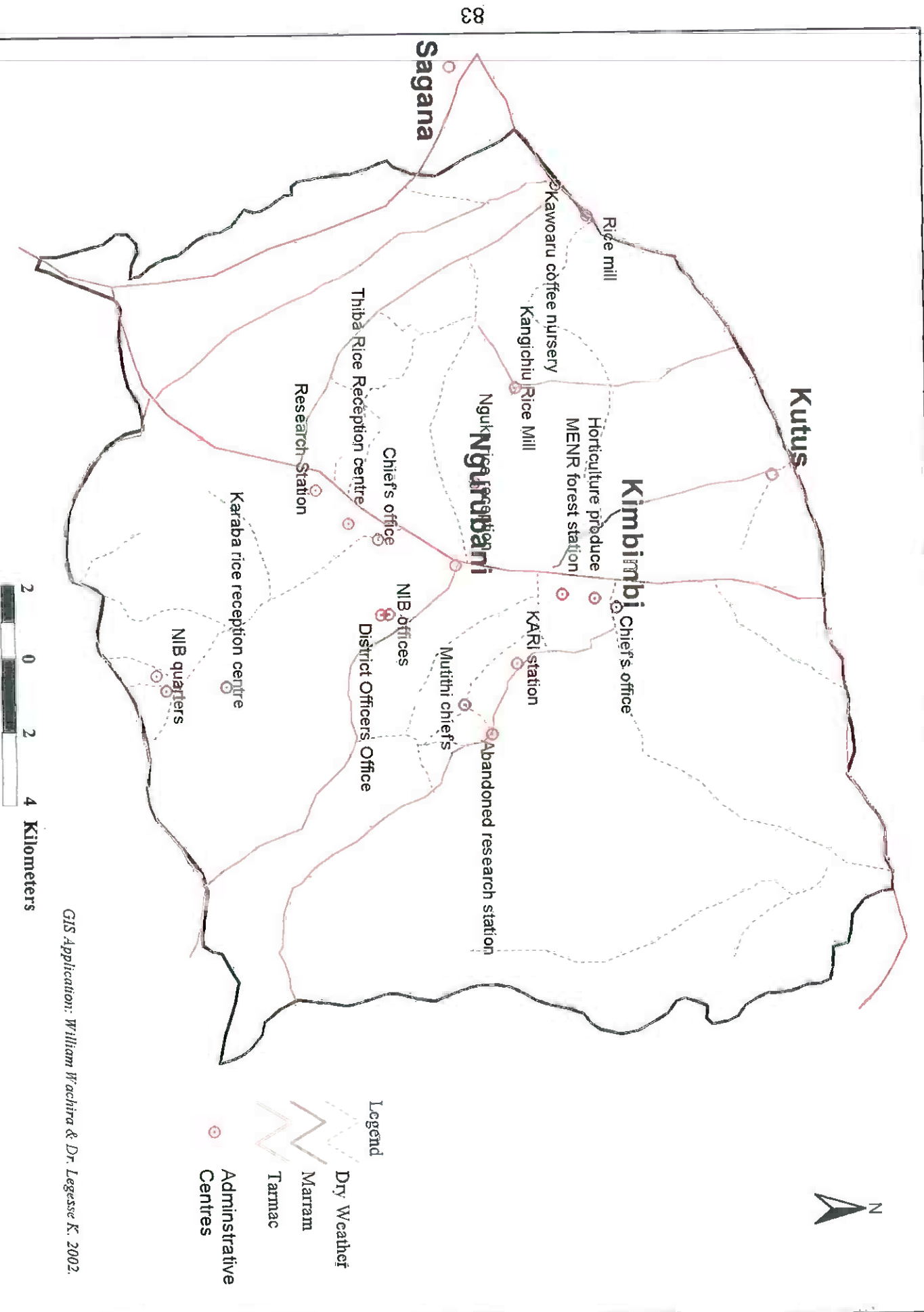


Fig. 10. Health Facilities In Mwea Division



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Fig. 11. Administrative Centres In Mwea Division



APPENDIX IV

GPS: REFERENCE POINTS FOR MAJOR FACILITIES IN MWEA DIVISION

Administrative centers in Mwea Division

FACILITY N	X__COORD	Y__COORD	ALT in M
1 Chief's office	315773	9924115	1164
2 NIB offices	318169	9924426	1164
3 D.Os office	318187	9924176	1166
4 NIB quarters	320529	9917379	1146
5 Chief's office	320057	9917058	1160
6 abandoned research station	322000	9927654	1160
7 KARI station	319770	9927654	1183
8 MENR forest station	317568	9929911	1209
9 Horticulture produce	317728	9930935	1218
10 rice reception centre	317998	9931621	1240
11 chief's office	321067	9931621	1240
12 Mutithi chiefs	314193	9926780	1191
13 Research station	315260	9922152	1179
14 Thiba Rice Reception centre	320423	9923184	1164
15 Karaba rice reception centre	320423	9919273	1146
16 Tannery	320423	9919273	1146
17 Flour maize meal	320423	9919273	1146
18 KPCU Miller	320423	9919273	1146
19 Kawoaru tea nursery	304526	9929876	1251
20 Rice mill	305520	9930823	1258
21 Kangichiu Rice Mill	310986	9928504	1219
22 Nguka rice reception	313999	9927182	1213

Bridges

FACILITY	X__COORD	Y__COORD	ALTITUDE
1 Marurumo bridge	325313	9919618	1129
2 Bridge	318652	9915475	1165
3 Murubara bridge	328909	9920835	1116
4 Nyamindi/akimbimbi bridge	318909	9932906	1230
5 Thiba bridge	318935	9936652	1296
6 Sagana bridge			
7 Karira bridge	316670	9926673	1195

Towns

FACILITY	X__COORD	Y__COORD	ALTITUDE
1 Marurumo center	325934	9919491	1132
2 Gategi center	324609	9917569	1139
3 Gaturi centre	322511	9917436	1144
4 Kwihota	321677	9917276	1146
5 Kwihota	321480	9917336	1145
6 Parish catholic	319423	9915919	1162
7 Karabu centre	318175	9915919	1172
8 Makonoeni centre	314136	9918730	1166
9 Mutithi centre	314136	9918730	1166
10 Ginnery cotton	319360	9923440	1163
11 Gathingiri	322250	9923312	1135
12 Ndindiruku centre	324916	9921501	1142
13 Kiumbu centre	329126	9920986	1119
14 Nyamindi centre	323792	9925670	1157
15 Kiriko village	322334	9926615	1162
16 Mahiga- ini village	322000	9927654	1160
17 Kimbimbi market	317998	9931621	1240

18 Kimbimbi	317998	9931621	1240
19 Kanyinyi market	322812	9932487	1224
20 Togonye centre	325165	9936518	1287
21 Wumande Togonye coffee	325165	9940319	1287
22 PI market	326472	9939193	1351
23 Difatha centre	322195	9939193	1393
24 Murimi centre	322195	9938680	1393
25 Kianjiru	318457	9936652	1371
26 Kutus town	313728	9935536	1296
27 Kimisa centre	309623	9931185	1299
28 Kagio town	302821	9927603	1267
29 Mwea Rice Research	309371	9926780	1231
30 Mutithi shopping	321067	9921784	1191
31 Block village	316999	9920634	1158
32 Wamumu rice centre	317476	9915011	1153
33 Karaba open market	317557	9916007	1169
34 PI (Ex-police/inspection)	313113	9925655	1180
35 Riandira market	305384	9926612	1185
36 Kwavii centre	304707		1185
37 Sagana town	300722		1217
38 Gakindu gakuru			
39 AI centre	303214	9929044	1240
40 Kagio town	305520	9930823	1258
41 Kimicha	309605	9935536	1302
42 Market centre	310884	9931379	1244
43 Nguka district	303523	9926957	1204
44 Ndorome centre	313989	9927046	1208

Cattle dips FACILITY

	X_COORD	Y_COORD	ALTITUDE
1 Marurumo cattle dip	327343	9919528	1120
2 Ciagini cattle dip	320057	9917058	1160
3 Kiandegwa cattle dip	315435	9916637	1169
4 Kirogo cattle dip	321135	9927654	1174
5 Cattle dip	322612	9932487	1224
6 Kamwangi cattle dip	326162	9938765	1351
7 Kamwangi cattle dip	326162	9938765	1351
8 AHITI dip	315503	9935781	1300
9 Kandongu dip	309371	9927603	1231
10 Ciagini cattle dip	319905	9917005	1148

Health facilities

FACILITY	X_COORD	Y_COORD	ALTITUDE
1 Gategi dispensary	324610	9917569	1138
2 Kwihota clinic	321500	9917346	1146
3 Thome dispensary	320057	9917058	1160
4 Health care	319423	9915919	1162
5 Kiandegwa dispensary	315435	9916637	1169
6 Kiumbu dispensary	329126	9920986	1119
7 Hospital	317998	9931621	1240
8 Difatha dispensary	322195	9939193	1393
9 Private clinic	319659	9938813	1363
10 Clinic	318457	9938680	1371
11 Private hospital	313728	9936652	1296
12 GOK health centre	313728	9936652	1296
13 Njega disp	313728	9936652	1296

6 Kajiji sec	322812	9932487	1224
7 Ndifatha sec	322195	9939193	1393
8 Kagio sec	302821	9931185	1267
9 Polytechnic	308315	9928959	1250
10 Mutithi girls	321067	9926780	1191
11 Sagana sec sch	300722	9926612	1217
12 Sagana technical institute	300722	9926612	1217
13 Kagio sec.sch	305415	9930779	1261
14 Kiangai sec.	310890	9930491	1235
15 Mwea sec. Sch	316235	9926833	1191

Other important facilities and features

FACILITY N	X__COORD	Y__COORD	ALTITUDE
10 Junction Mbere/Marurumo	327072	9919223	1129
11 Marurumo Church Junction	326277	9918782	1140
13 Gategi Bridge point	325189	9918016	1127
42 Airstrip	319360	9923440	1163
44 Street children centre	324564	9922174	1148
47 Community drug store	324916	9921501	1142
54 South Ngariama scheme	326457	9921566	1130
55 Nyamindi Canal	324343	9924464	1146
83 Murunduku hill	325165	9936518	1287
100 Ahiti Ndoba	315503	9935781	1300
106 GPO	313728	9936652	1296
107 kutus saw mill	313728	9936652	1296
109 TI	313728	9936652	1296
115 Kagio Petrol Station	302821	9931185	1267
132 Junction Wamumu/Karatina	317456	9918498	1147
Junction Kiandegwa /Mutithi	317753	9918474	1145
134 Straight Connection	318702	9918956	1144
142 Junction post karaba makutano	312503	9917270	1187
144 Makutano town petrol station	308214	9916659	1165
156 Sagana petrol x2	300722	9926612	1217
159 Ferry (boat)	304455	9922384	1217
161 Railway terminus	300722	9926612	1217
162 Sagana brick	300722	9926612	1217
173 Petrol station x2	305520	9930823	1258
182 Goitoo-ini March	310670	9929414	1277

Other important centers

FACILITY N	X__COORD	Y__COORD	ALTITUDE
1 Marurumo centre	325934	9919491	1132
2 Gategi centre	324609	9917569	1139
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10 Ginnery cotton	319360	9923440	1163
11 Gathigiriri	322250	9923312	1135
12 Ndindiriku centre	324916	9921501	1142
13 Kiumbu centre	329126	9920986	1119
14 Nyamindi centre	323792	9925670	1157

PART V

SITUATIONAL ANALYSIS AND RESOURCE MAPS

FOR

TOWNSHIP/MATAYOS DIVISION

SITUATIONAL ANALYSIS OF TOWNSHIP/MATAYOS DIVISIONS

Location and Area:

Township/Matayos Divisions are located in the Western part of Busia District, Western Province. Township division borders Uganda to the west and Matayos to the east. The two divisions have a total land area of 184km². (Fig. 1).

Topography:

Township/Matayos Divisions have various topographic features which include plains few hills and swamps. The topography is generally gently undulating with irregular water channels. Altitude varies from 1170m to 1260m above sea level with the exception of very limited hilltops which have higher altitudes.

Climate:

There are two distinctive rainy seasons in the divisions. The long rains from March to May and the short rains from August to October. Dry spells usually last from December to July. Mean annual temperature vary from 18⁰c to 30⁰ c.

Geological formation:

Different soils are distributed all over the divisions; ferrisols, vertisols and acrisols. Soils in uplands are moderately deep clays and are well drained with variable fertility while low laying soils are generally poorly drained clays and sandy or sandy clays

Population Size:

According to population projection of 2002, Township and Matayos Divisions have a total population of 87,884. The total number of household in the division was estimated to be 17,809 by 1999. Population distribution is evenly on individual household pattern (Fig. 2).

Water resource:

There are different water points: rivers, streams, springs, water tanks, wells and boreholes within the division. There are also some piped water schemes operated by Busia County Council, different institutions and by community self-help groups. (Fig. 3)

Energy supply:

Some households, schools, institutions and trading centres in the division have electric connections mainly in township Division. Most of the Township and Matayos divisions, which is about 96%, use firewood and charcoal as a major source of energy. Kerosene, gas and biogas are also used to a limited degree. (Fig. 4)

Agricultural activities:

Agriculture is the main economic activity in the division with sugarcane as the main cash crop. Small scale agriculture farming employs the majority of the population. The small farms range from 2ha to 10ha. Maize has the largest acreage under crops. Sorghum, finger millet, beans, cotton and different vegetables and fruits are also grown. The agro-ecological zones are distinctive (Fig.5).

Livestock production:

There are different livestock production activities in the divisions ranging from cattle to pigs and rabbits.

Division	cattle	sheep	goats	donkeys	pigs	Rabbits
Matayos	11363	4705	6526	178	5618	2352
Township	10087	4862	8697	531	5466	3699
total	22458	9567	15223	709	11084	6051

Communication network:

The divisions have fairly well distributed road network covering the whole divisions. There are a total of 21km of tarmac, 27km of gravel and 23km of earth roads in the divisions. Most of the roads are seasonal. Boda boda is dominating mainly the Township and is also very common in Matayos division. Most of the centres have no post and telecommunication services. (Fig.6,7, & 8).

Educational facilities:

There are more than 38 primary schools and 2 secondary schools in the divisions scattered evenly over the divisions with some private training institutes (Fig. 9).

Health facilities:

There are different health facilities in the divisions: Two hospitals in Township, one health centre in Matayos and few dispensaries scattered here and there in all the divisions (Fig.10.).

Forestry:

Forestry resources are mainly on farms through agro-forestry activities for domestic use. There are few bushy patches on hill tops and along swamps, depressions, road sides and farm edges.

Minerals:

The divisions have some potential for mineral exploitation. Some of the minerals like the iron ore has been exploited by the local community to make traditional ornaments such as bangles, weapons and farm implements. If properly utilized they can create micro-employment opportunities for the local people.

Administrative Centres:

Administrative centres refer to the location and distribution of divisional headquarter is, different GOK departments, research institutions, Processing plants, Police stations, chiefs and assistant chiefs' offices in the divisions. (Fig.11).

Fig. 1 Location of Township/Matayos Divisions

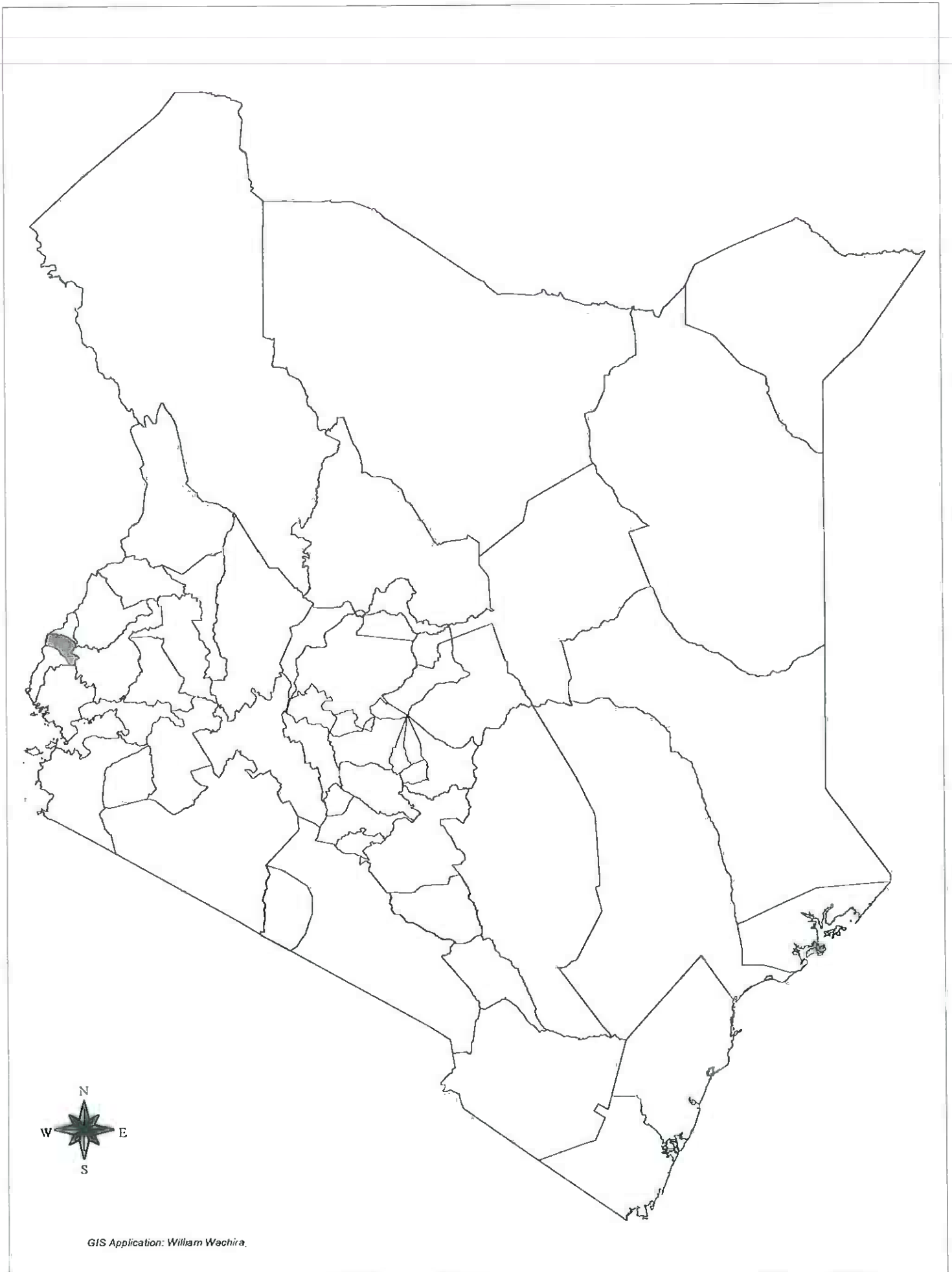


Fig. 2 Settlement Patterns In Township/Matayos Divisions

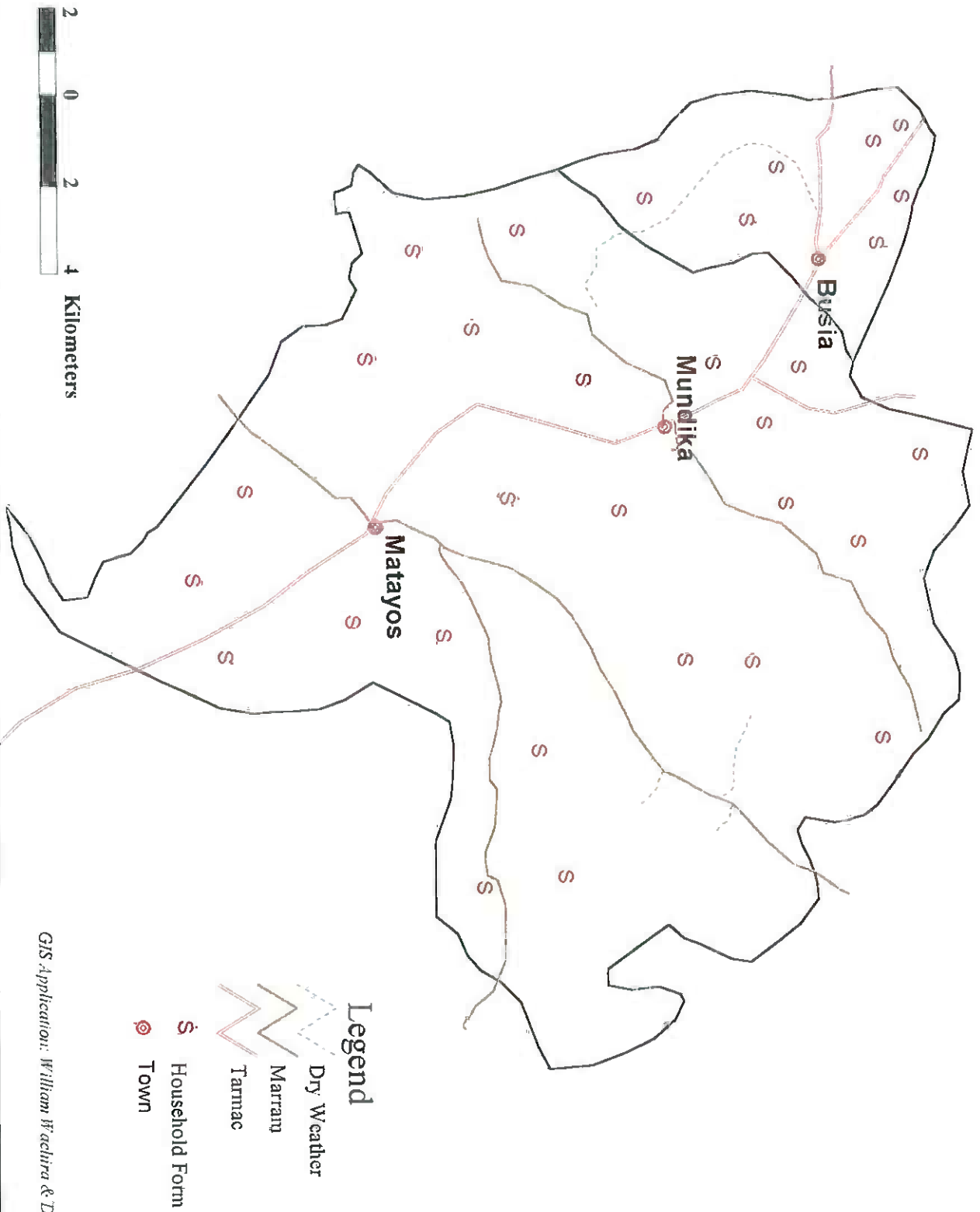


Fig. 3. Water Supply Systems In Township/Matayos Divisions

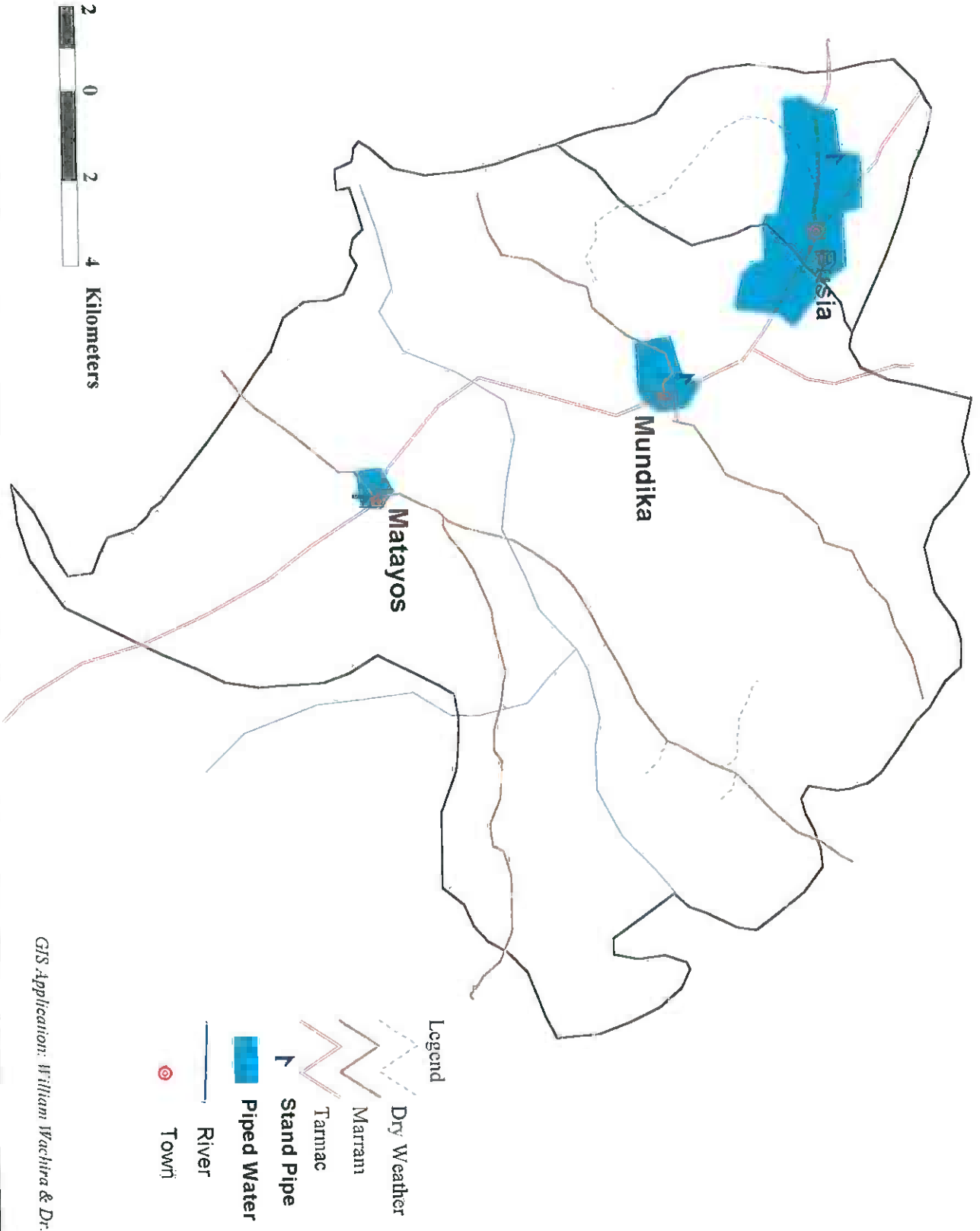


Fig. 4. Energy Supply Systems In Township/Matayos Divisions.

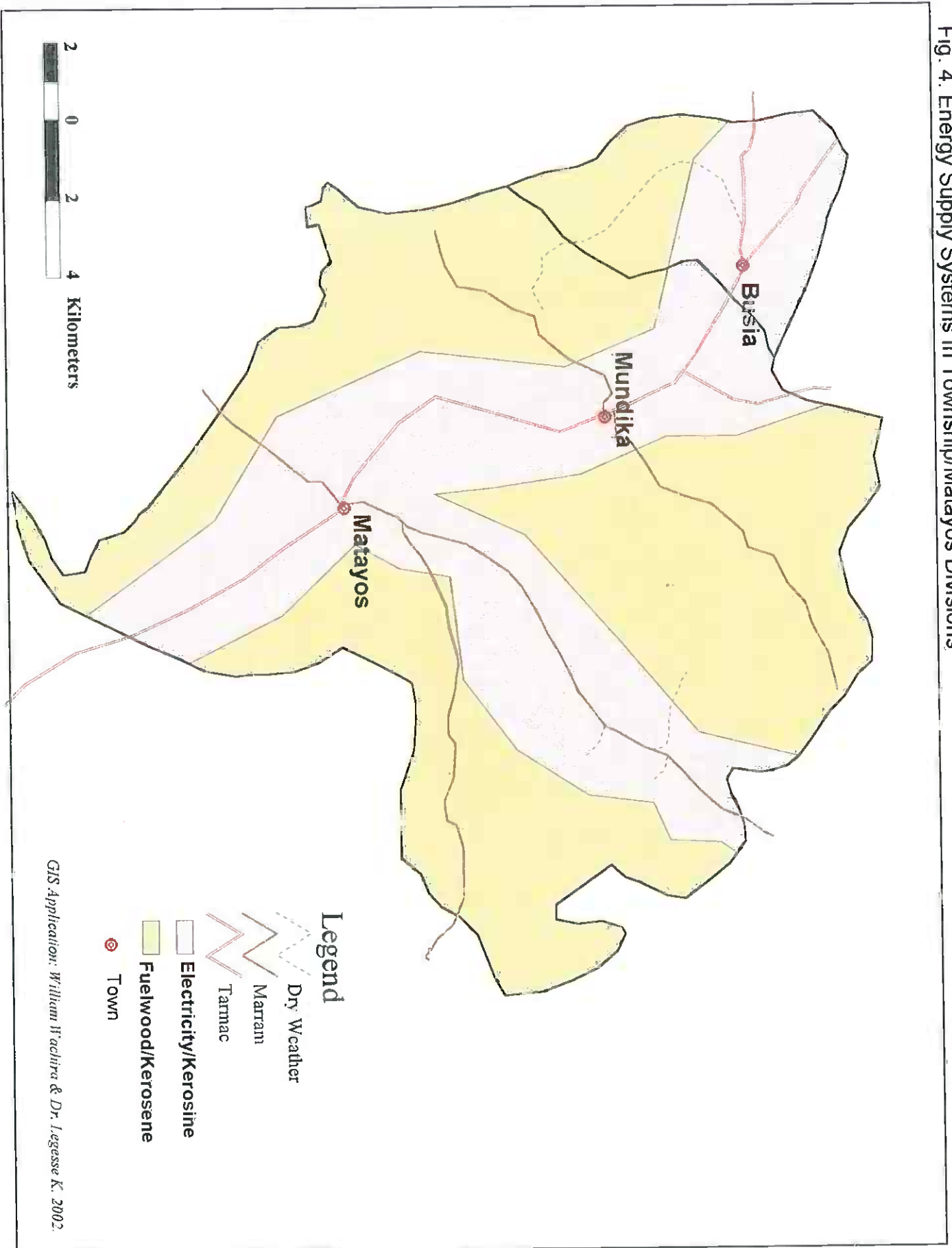
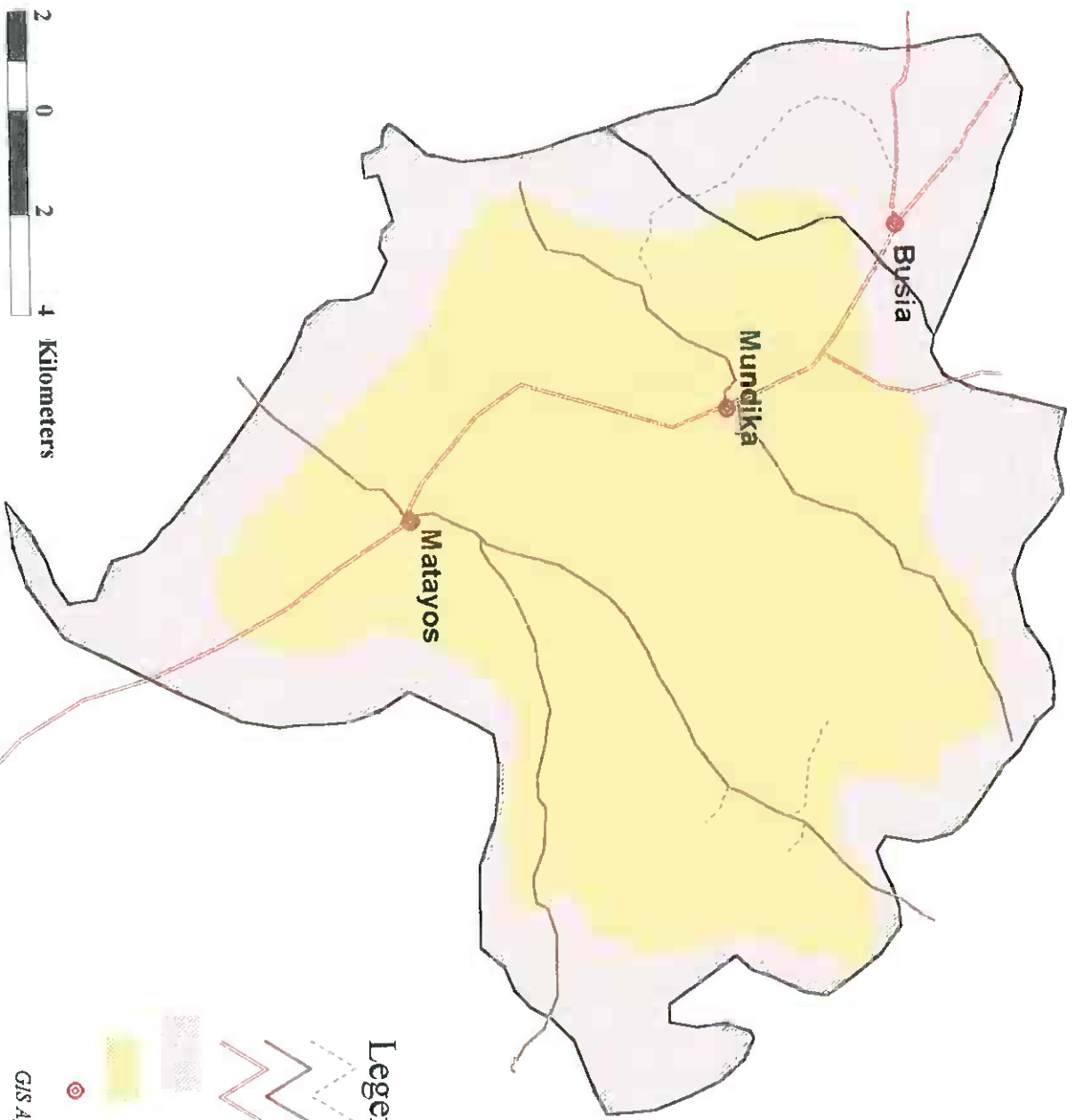


Fig. 5. Agro-Ecological Zones In Township/Matayos Divisions



Legend







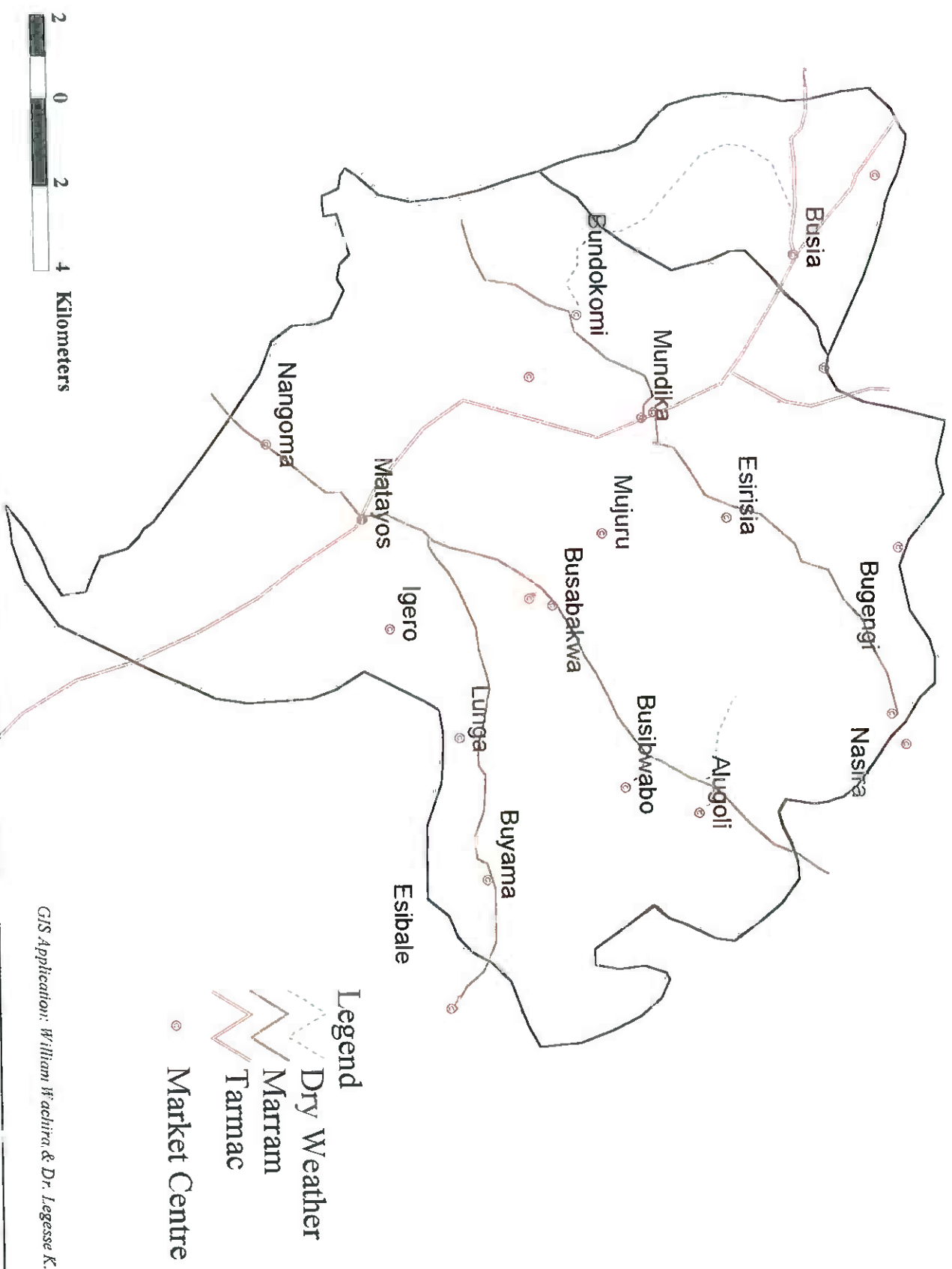
-  Dry Weather
-  Marram
-  Tarmac
-  Maize/Beans/Sorghum Finger Millet
-  Sugar Cane
-  Town

Fig. 6. Major Road Network And Market Centres In Township/Matayos Divisions



GIS Application: William Wachira & Dr. Legesse K. 2002.

Fig. 7. Communication Systems In Township/Matayos Divisions

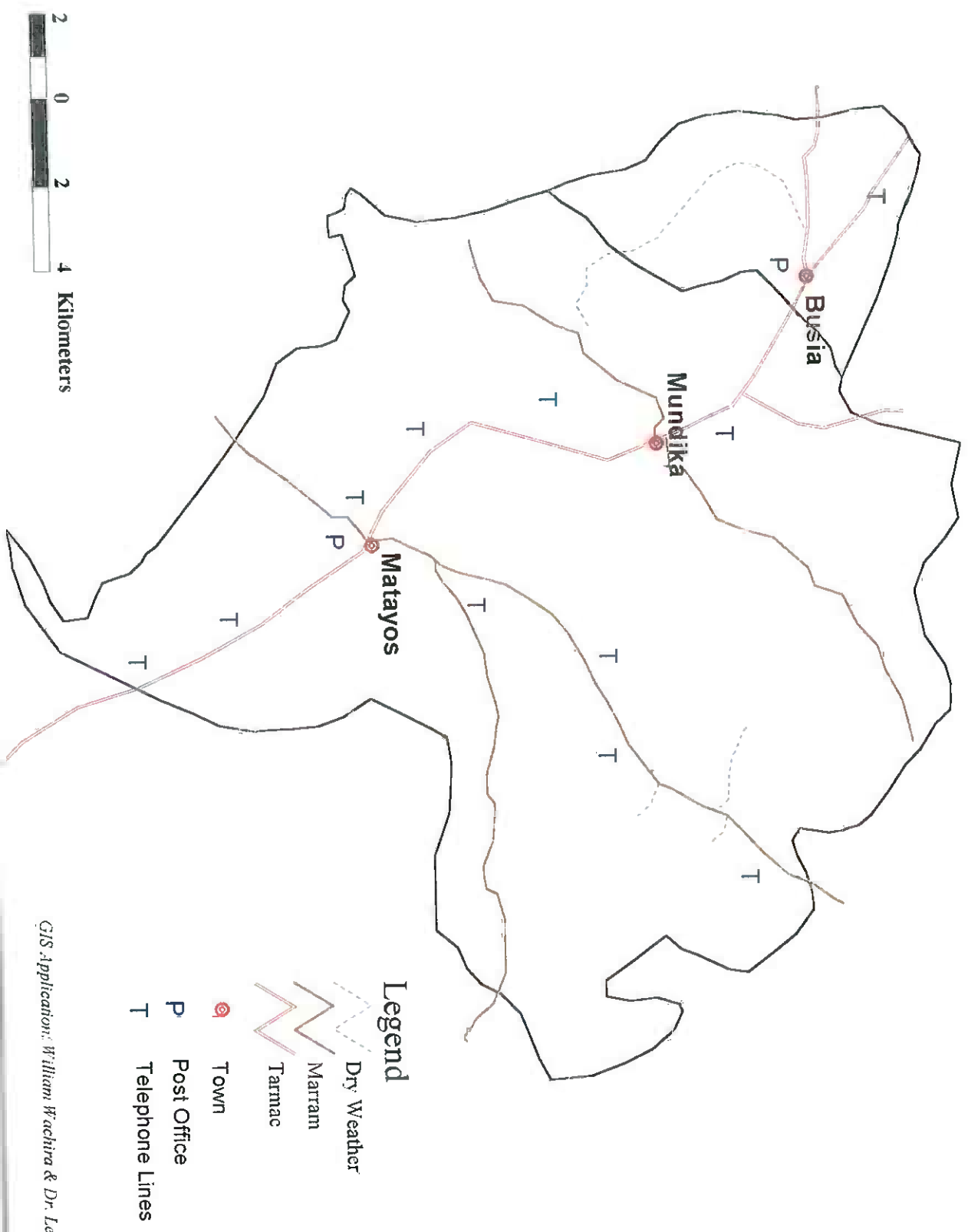
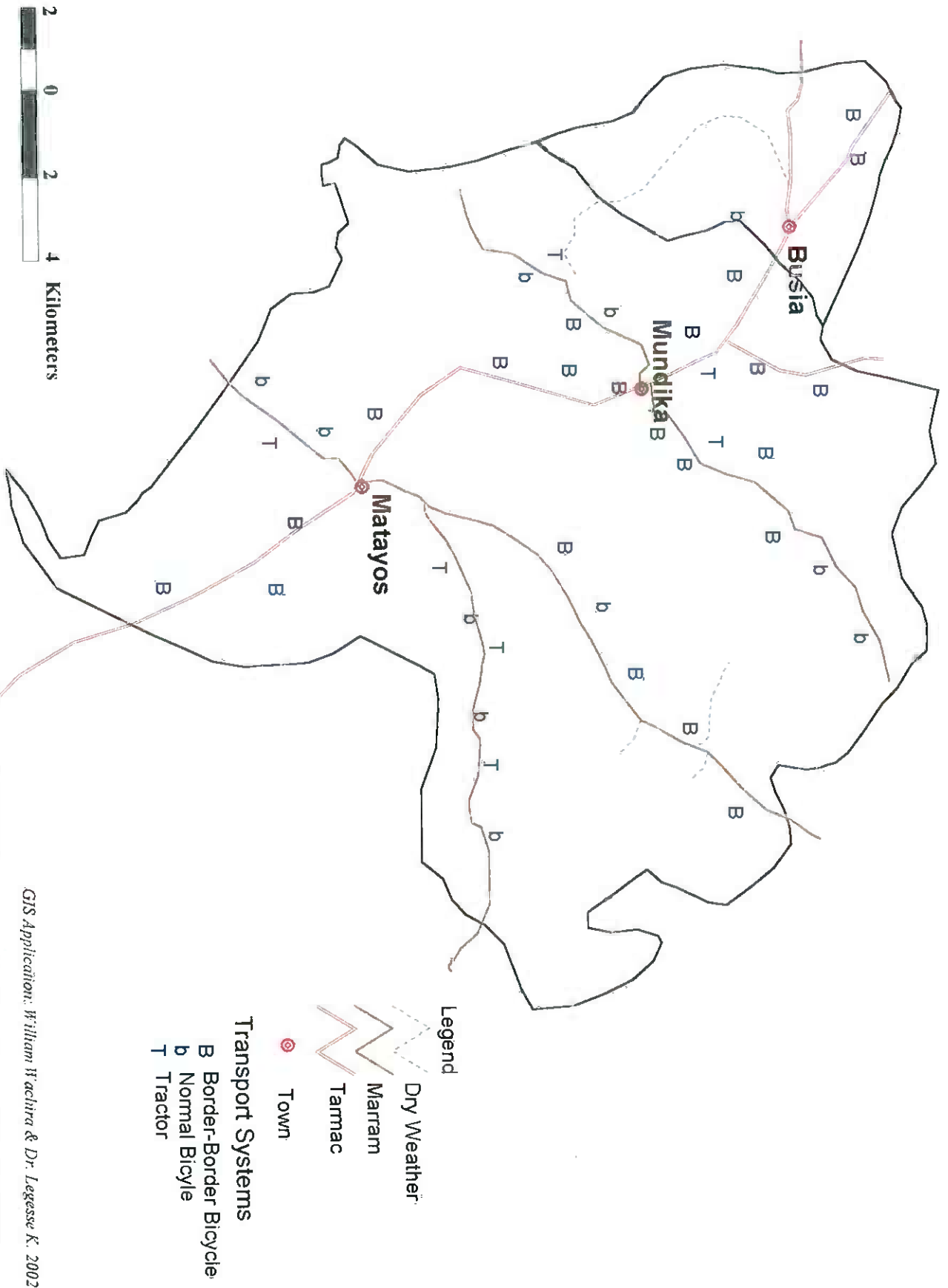


Fig. 8. Transport Systems In Township/Matayos Divisions



- Legend**
- Dry Weather
 - Marram
 - Tarmac
 - ⊙ Town
- Transport Systems**
- B Border-Border Bicycle
 - b Normal Bicycle
 - T Tractor

Fig. 9. Education Facilities In Township/Matayos Divisions

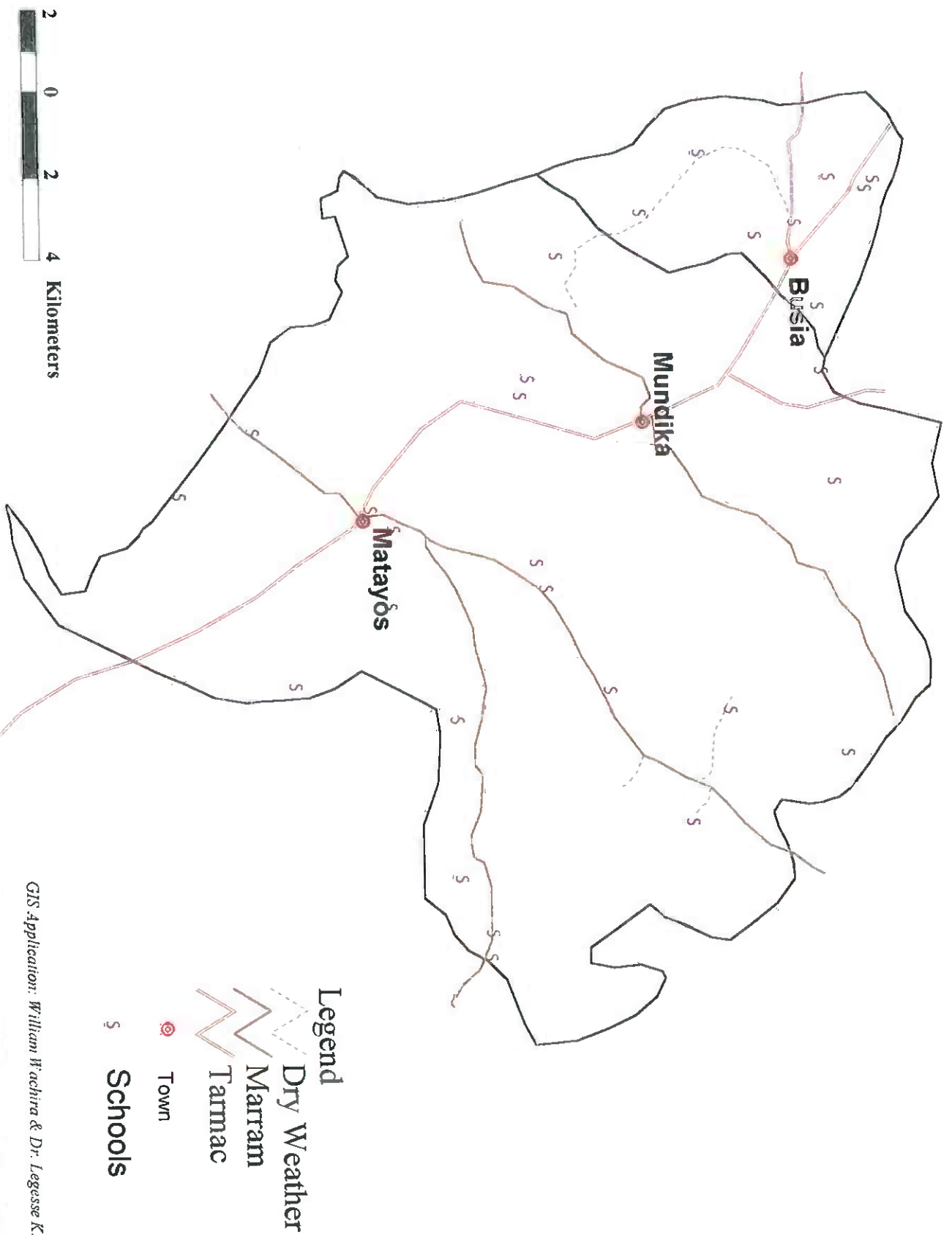


Fig. 10. Health Facilities In Township/Matayos Divisions

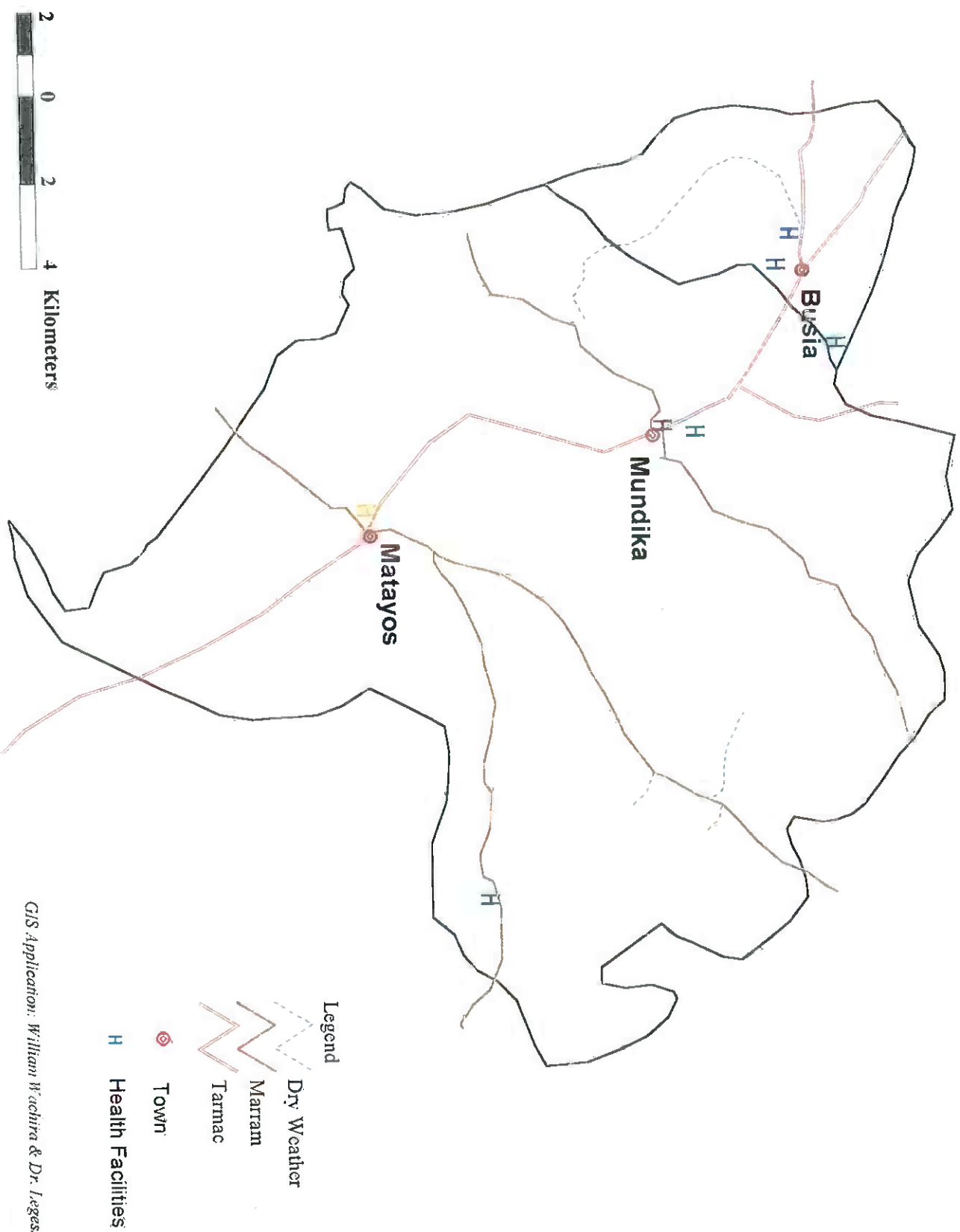
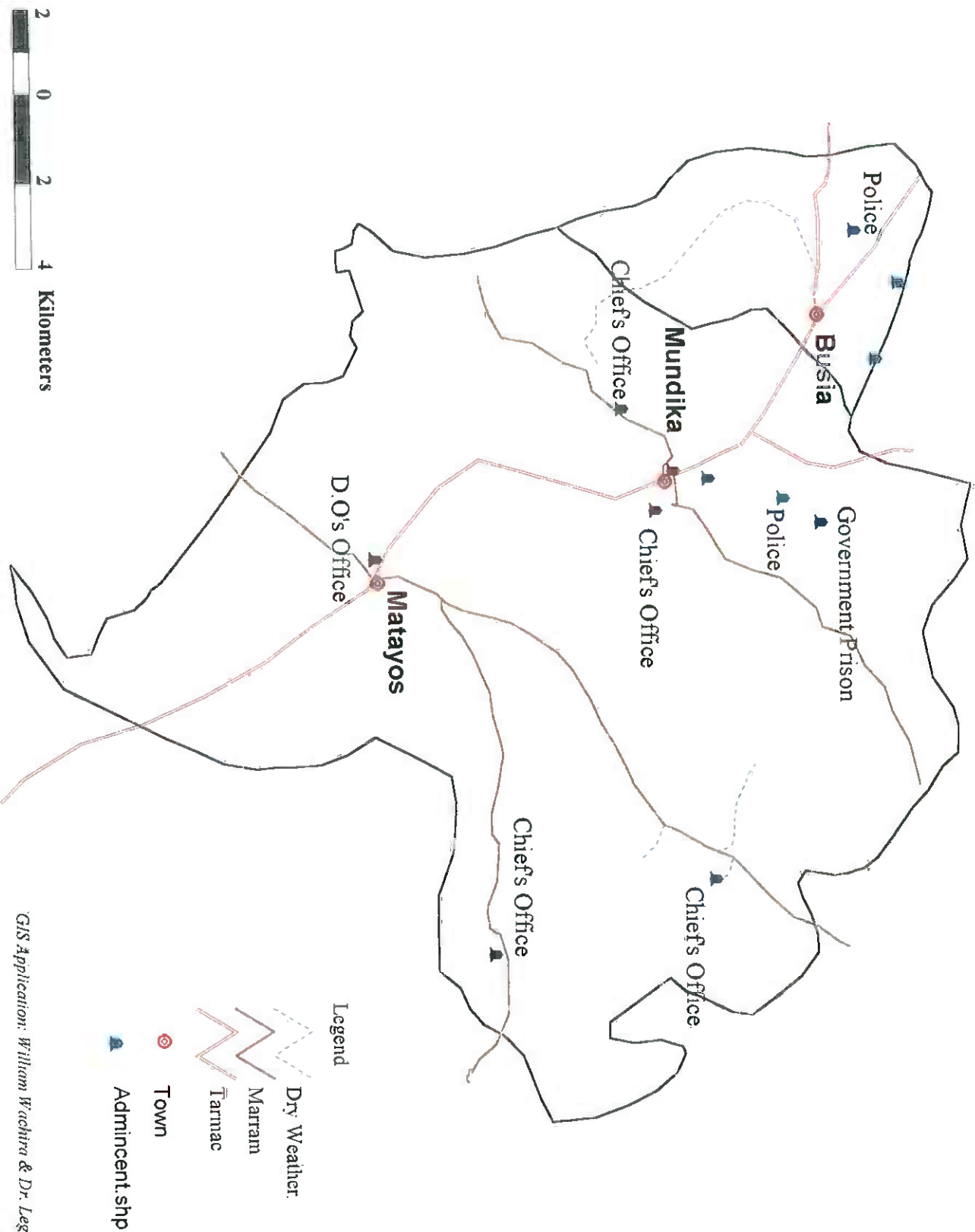


Fig. 11. Administrative Centres In Township/Matayos Divisions



APPENDIX V

GPS REF: POINTS FOR MAJOR FACILITIES IN TOWNSHIP/MATAYOS DIVISION

ID	FACILITY	X-COORD	Y-COORD	ALT (M)
1	Primary School	622695	10051370	1234
2	Satellite Academy	626757	10049802	1219
3	Mundika Pry. School	627536	10047152	1240
4	Esikulu Pry. School	626987	10043928	1211
5	Busende Pry. School	629168	10041194	1199
6	Matayos Pry. School	630515	10039757	1262
7	Bugengi Pry. School	628792	10050267	1220
8	Esirisia Pry. School	629387	10047636	1215
9	Mujuru Pry. School	630484	10045207	1209
10	Busabakwa Pry. School	631098	10044258	1188
11	Crasher Pry. School	633133	10045463	1204
12	Alungoli Pry. School	635778	10047294	1218
13	Nasira Pry. School	633696	10047948	1236
14	Nasira Pry. School	634383	10050314	1245
15	Igero Pry. School	631789	10041090	1226
16	Lunga Pry. School	633780	10042462	1207
17	Buyama Pry. School	636937	10042427	1239
18	Nasewa Pry. School	638080	10043283	1247
19	Siewe Pry. School	638509	10043006	1263
20	Luliba Pry. School	632954	10039396	1216
21	Muyafwa Pry. School	629087	10036954	1275
22	Mundaya Pry. School	629102	10036482	1274
23	Nangoma Pry. School	627793	10038395	1260
24	Budokomi Pry. School	624853	10044587	1212
87	Bwamani Pry. School	622107	10047702	1190
90	Bulanda Pry. School	622831	10050056	1234
94	Mayenje Pry. School	623176	10046383	1204
100	Mabaie Pry. School	623835	10048630	1213
101	Primary School	623576	10049455	1221
106	St. Teresa's Girls P	622970	10050824	1243
110	Burumba Pry. School	625211	10049887	1232

ID	FACILITY	X_COORD	Y_COORD	ALT
1	Busia Sec. School	622695	51370	1234
2	Busia Catholic School	622695	51370	1234
3	Mundika Sec. School	627536	47152	1240
4	Girls Sec. School	630600	39800	1247
5	Nasira Sec. School	634383	50314	1245

ID	FACILITY	X_COORD	Y_COORD	ALT
1	Post Office	625295	50593	1226
2	Petrol Station	624081	51072	1231
3	Border Point	622480	51649	1237
4	Cattle Crush (Tsetse)	632586	41857	1222
5	Nangoma Quarries	628690	38952	1241
6	Brick Making	624853	44587	1212
7	Airstrip	625731	50597	1225

8	Brick site	625538	49798	1215
9	Brick site	625302	49667	1214
10	KIE	622856	50880	1227
11	Slaughter house	623357	50493	1228
12	Sewer	623577	50061	1220
13	Research Site	624460	47197	1194
14	Fish Pond	622500	47200	1194
15	Molasses	621534	47741	1197

ID	FACILITY	X-COORD	Y-COORD	ALT
1	Post Office	625295	50593	1226
2	Petrol Station	624081	51072	1231
3	Border Point	622480	51649	1237
4	Cattle Crush (Tsetse	632586	41857	1222
5	Nangoma Quarries	628690	38952	1241
6	Brick Making	624853	44587	1212

ID	FACILITY	X_COORD	Y_COORD	ALT
1	Busia District Hospital	622680	51362	1234
2	Busia Health (Private) TANA	625295	50593	1226
3	Mundika Parish H. Q. Cathol	627536	47152	1240
4	Matayos Health Center	630515	39757	1247
5	Nasewa Clinic	637540	42827	1239

ID	FACILITY	X_COORD	Y_COORD	ALT
1	Busia Town	623748	51018	1246
2	Administration Center	625295	50593	1226
3	Border Point	622480	51649	1237
4	Mundika Center	627514	46171	1230
5	Matayos Center	629634	40660	1209
6	Bugengi Center	630529	51507	1221
7	Nambale Center	631781	52038	1234
8	Esirisia Shopping Cen	629528	47957	1209
9	Mujuru Center	629883	45306	1208
10	Busabakwa Center	631252	44335	1181
11	Busibakwa Center	633512	45778	1206
12	Alungoli Center	635778	47294	1218
13	Nasira Center	634383	50314	1245
14	Igero Center	631789	41090	1226
15	Lunga Center	633780	42462	1207
16	Buyama Center	636937	42427	1239
17	Eshibare Center	640470	42302	1274
18	Nangoma Center	627600	38715	1222
19	Budokomi Center	625340	45008	1209

ID	FACILITY	X_COORD	Y_COORD	ALT
1	Boreholes	624081	51072	1231
2	Treatment Work (Water)	627065	43115	1195
3	Mundika Intake	627427	42706	1173
4	Busabakwa Water Point	631098	44258	1188
5	Ebusibakhwa Water Poin	633133	45463	1204
6	Nasira Water Point	633696	47948	1236
7	Buloma Water Point	634371	49151	1237

8	Borehole	638509	43006	1263
9	Water Tank	628690	38952	1241
10	Borehole	627793	38395	1260

ID	FACILITY	X_COORD	Y_COORD	ALT
1	Police Station	625295	50593	1226
2	Administration Centers	625295	50593	1226
3	Farmer's Training Center	624081	51072	1231
4	Police Post (Korinda)	627783	48780	1229
5	Mundika Parish H. Q. Cath	627536	47152	1240
6	Mundika Cheif	627514	46171	1230
7	D. O's Office	629634	40660	1209
8	Busia G. K. Prison	628369	49564	1228
9	Cheif's Office	635778	47294	1218
10	Bukhayo Cheif's Office	628133	46082	1215
11	Cheif's Office	637540	42827	1239

ID	FACILITY	X_COORD	Y_COORD	ALT
1	River Sio Bridg	627427	42706	1173
2	Bridge	630994	44313	1179
3	Bridge	629142	45468	1199
4	Bridge	633410	42283	1198
5	Muyafwa Bridge	630014	38493	1202

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