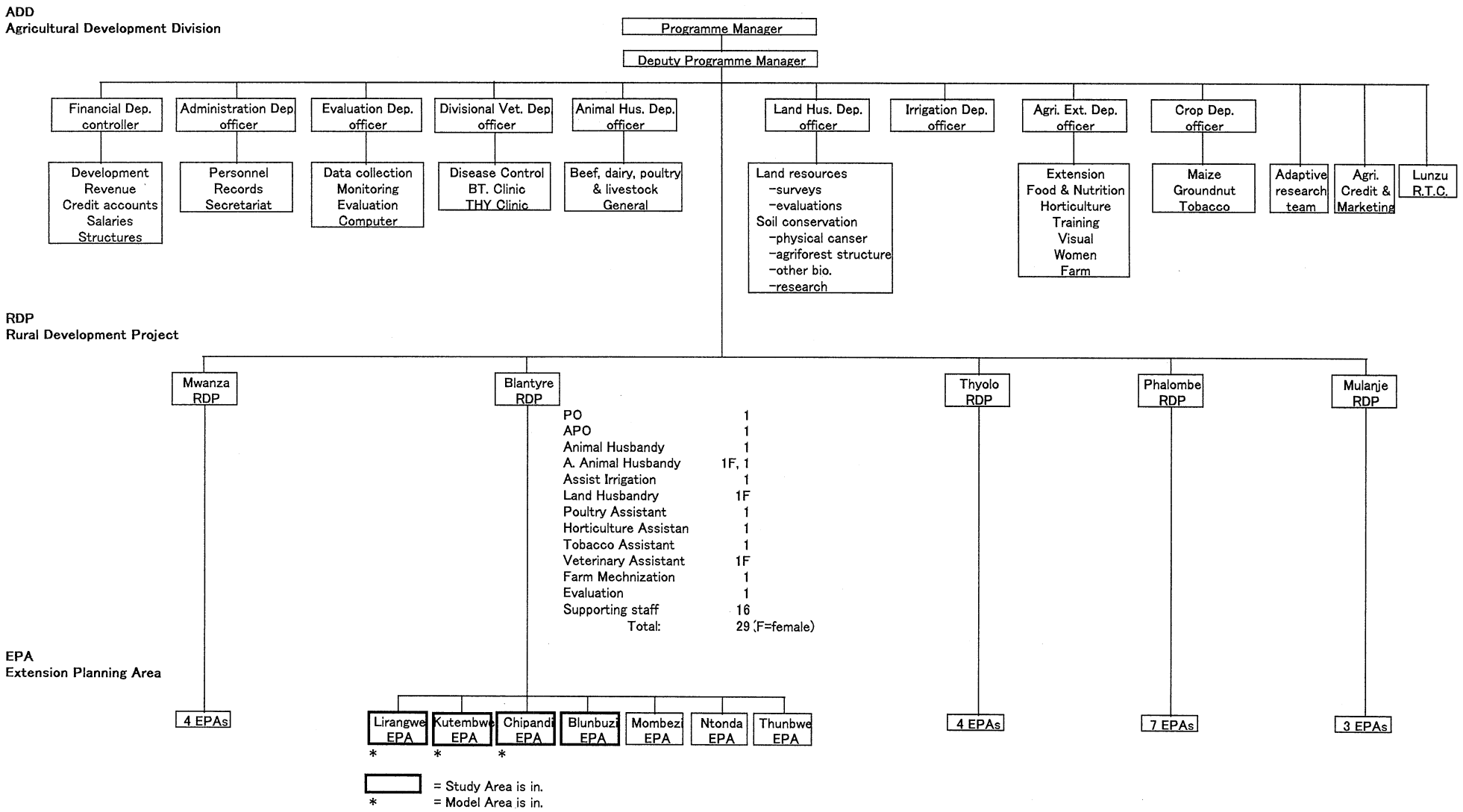
Phase II Stage

II-A

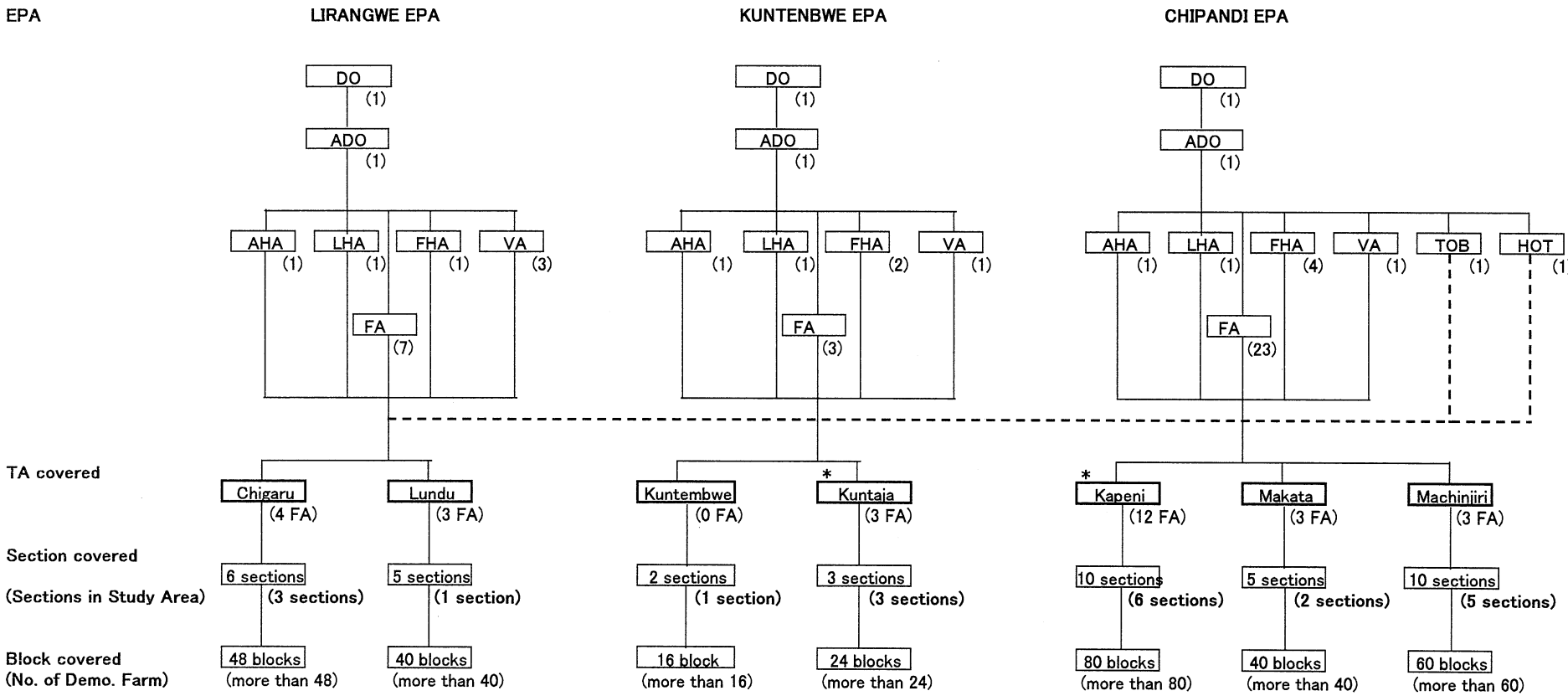
General

II-A. General

ORGANIZATION CHART OF BLANTYRE AGRICULTURAL DEVELOPMENT DIVISION



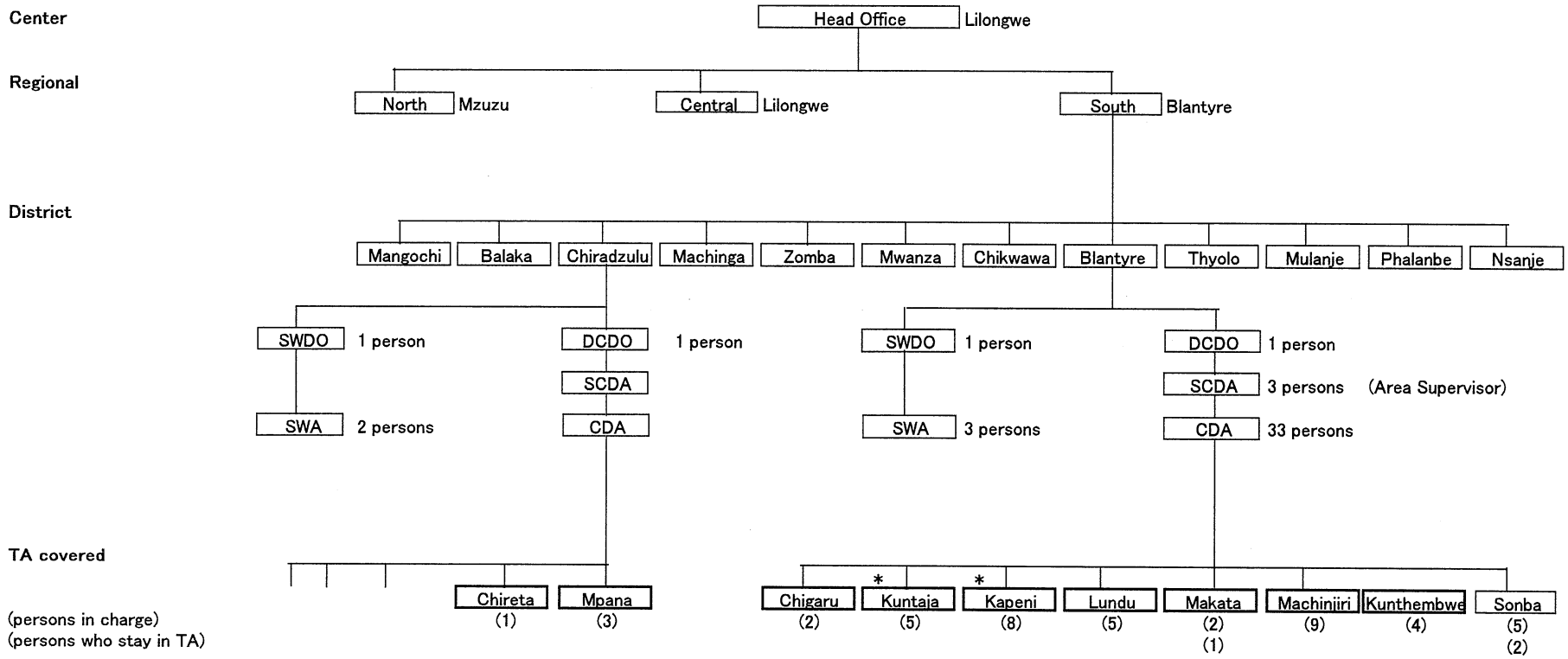
ORGANIZATION CHART OF EPA (LIRANGWE, KUNTEMBWE, CHIPANDI)



= Study area is in. * = Model Area - - - - - = cover whole TA

DO	: Development Officer	HOT	: Horticulture Extension Assistnat	VA	: Veterinary Assistant
ADO	: Assist Development Officer	AHA	: Animal Husbandry Assistnat	FHA	: Farm Home Assistant
TOB	: Tobacco Extension Assistant	LHA	Land Husbandry Assistant	FA	: Field Assistant

ORGANIZATION CHART OF MOGYCS
(MINISTRY OF GENDER, YOUTH AND COMMUNITY SERVICES)

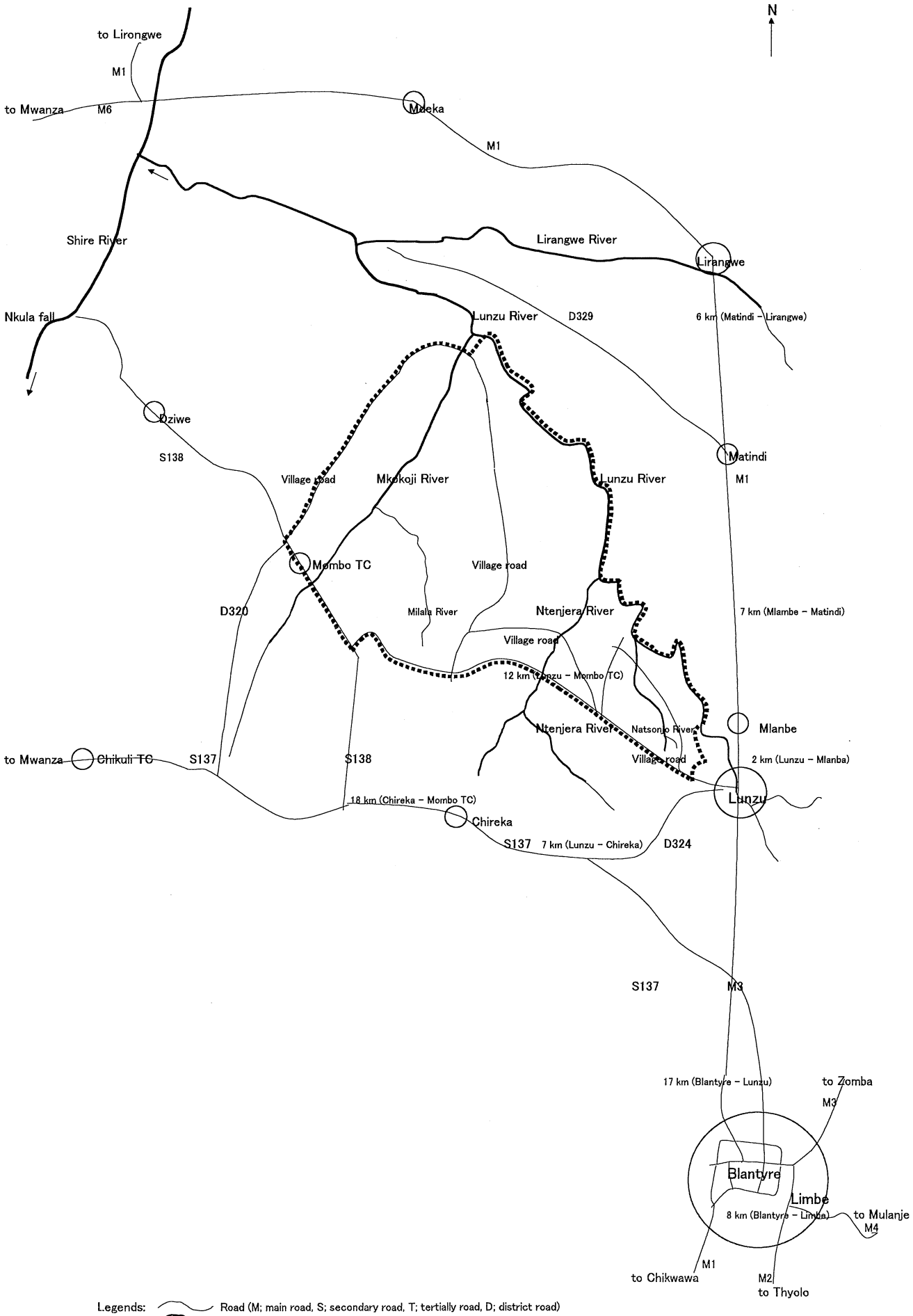


= Study area is in. * = Model Area

DCDO : District Community Development Officer
SCDA : Senior Community Development Officer
CDA : Community Development Officer

SWDO : Social Wellfare Development Officer
SWA : Social wellfare Assistant

Market Area around Model Area



Legends:
- Road (M; main road, S; secondary road, T; tertially road, D; district road)
- River
- Model Area
- Market Area

Blantyre Consumer Price Indices (as of May 1999)

1990=100

Year	Month	Food	Beberages & tobacco	Clothing & footwear	Housing	Household operation	Transport	Miscel laneou	All items	Infration rate
Blantyre High										
1991										
1992										
1993		183.4	205.2	158.2	175.9	174.8	148.5	155.8	167.4	
1994		272.5	303.9	199.5	199.9	219.5	184.6	229.0	221.6	32.3
1995		523.1	537.9	258.7	324.3	398.4	313.6	350.4	380.2	71.6
1996										
1997		799.8	790.1	333.0	495.4	644.9	448.5	445.4	559.7	
1998										
	Jul									
	Aug									
	Sep									
	Oct									
	Nov									
	Dec									
1999	Jan	1553.0	1585.6	476.8	994.4	839.7	835.2	571.6	988.7	
	Feb	1558.2	1585.6	476.8	1009.8	839.7	840.0	666.9	1014.4	
	Mar	1618.5	1585.6	476.8	1029.7	839.7	840.0	1013	1075.3	
	Apr	1615.4	1609.0	480.2	1032.3	839.7	840.0	1013.9	1075.9	
	May	1643.6	1609	480.2	1032.5	839.7	840.0	1013.9	1082.2	
Blantyre Medium										
1991		110.8	113.33	114.22	119.09	102.07	114.17	103.95	112.06	
1992		149.99	147.5	122.0	145.99	125.62	137.42	114.32	140.99	25.8
1993		198.8	206.2	150.9	166.2	165.0	179.4	144.0	179.4	27.2
1994		305.1	299.2	172.3	207.3	223.2	245.1	199.3	253.0	41.0
1995										
1996										
1997		872.6	798.6	331.1	547.7	540.2	649.8	495.3	680.0	
1998		1181.5	1274.8	408.4	636	637.4	1058.8	605	898.4	
	Jul	1119.1	1152.8	383	614.4	608.8	1073.6	560.8	855.5	
	Aug	1060.4	1152.8	383	615.2	608.8	1073.6	560.8	829	
	Sep	1254	1599.5	456	617.8	716.3	1073.6	676.5	952.0	
	Oct	1326.2	1599.5	456	617.8	716.3	1378.6	736.8	1008	
	Nov	1374.2	1762.1	456	857	716.3	1378.6	736.8	1084.1	
	Dec	1499.7	1779.6	586.5	861.9	716.3	1378.6	736.8	1156.4	
1999	Jan	1553.0	1585.6	476.8	994.4	839.7	835.2	571.6	988.7	
	Feb	1558.2	1585.6	476.8	1009.8	839.7	840.0	666.9	1014.4	
	Mar	1618.5	1585.6	476.8	1029.7	839.7	840.0	1013	1075.3	
	Apr	1615.4	1609.0	480.2	1032.3	839.7	840.0	1013.9	1075.9	
	May	1643.6	1609	480.2	1032.5	839.7	840.0	1013.9	1082.2	
Blantyre Low										
1991		110.3	111.42	108.16	120.19	104.19	116.33	104.9	111.4	
1992		151.07	141.8	120.0	150.44	130.79	132.09	121.38	143.51	28.8
1993		204.1	182.0	128.9	156.9	154.3	157.4	159.8	178.8	24.6
1994		315.1	271.7	144.3	224.9	216.3	231.9	216.1	262.7	46.9
1995		656.9	499.4	206.2	386.5	378.7	405.8	390.3	509.7	94.0
1996		874.3	657.4	253.5	464.0	420.8	599.1	458.9	661.0	29.7
1997		889.7	821.8	307.5	519.5	484.5	636.6	516.9	696.3	5.3
1998		1273.8	1447.8	416.9	665	736.8	715.5	646.1	975.0	40.0
	Jul	1154.8	1312.8	431	624.0	692.6	727.4	598	899.7	
	Aug	1061.8	1312.8	431	625.4	692.6	727.4	598	850.3	
	Sep	1220.2	1875	467.7	628.9	899.2	727.4	752.1	968.3	
	Oct	1250.8	1875	467.7	655.2	899.2	731.5	789.5	990.9	
	Nov	1288.3	1962.2	467.7	1018	899.2	731.5	789.5	1076.4	
	Dec	1424.5	1992.3	519	1028.4	899.2	731.5	789.5	1157.7	
1999	Jan	1769.7	1992.3	519	1069.4	930.9	731.5	809.6	1351.9	
	Feb	1872.5	1992.3	519	1106.7	930.9	731.5	848.2	1415	
	Mar	1952.0	1992.3	519	1163.6	930.9	731.5	1215.7	1482.8	
	Apr	1998.9	2093.1	521.2	1172.3	968.8	731.5	1228.6	1514.2	
	May	2175.8	2093.1	521.2	1174.4	968.8	731.5	1228.6	1608.8	

Notes: 1. Annual figures are calculated using the average of the monthly indices for the year compared to the average for the previous year.
2. The national index is calculated as a weighted average of the urban and rural indices.

Source: National Statistical Office

Price Indices & Infration Rate in Blantyre

Price Indices

Composite 1990=100	All Items	Food	Beverages and Tobacco	Clothing and Footwear	Housing	Household Operation	Trans-portation	Miscella-niuos
Year/Month Weight	100	34.0	2.5	8.3	19.3	8.9	16.1	10.9
1997								
January	580.4	775.7	728.0	291.5	504.3	594.1	470.0	444.2
February	599.1	829.3	728.0	291.5	506.5	594.1	470.0	444.2
March	608.6	856.3	738.5	291.5	506.9	594.1	470.0	444.2
April	621.5	882.7	794.6	313.5	507.1	599.2	470.8	445.1
May	639.2	906.9	794.6	342.0	518.5	599.2	485.4	467.9
June	637.3	898.7	794.6	342.0	522.9	599.2	485.4	468.6
July	635.0	891.6	794.6	342.0	523.3	599.2	485.4	468.6
August	600.1	785.1	822.2	342.0	523.4	606.8	485.4	468.6
September	605.0	796.5	822.2	344.0	525.5	611.3	485.4	468.6
Octover	606.2	799.5	831.3	344.0	525.3	611.3	485.4	468.6
November	624.0	852.0	831.3	344.0	525.3	611.3	485.4	468.6
December	649.3	923.2	860.1	344.0	525.0	615.1	485.4	468.6
Annual Average	617.1	849.8	795.0	327.7	517.8	602.9	480.3	460.5
1998								
January	694.6	1,046.9	984.1	347.0	525.4	624.8	478.7	469.6
February	720.8	1,104.7	984.1	347.0	524.6	639.2	511.3	471.5
March	740.6	1,134.8	999.0	356.4	525.0	668.3	542.2	477.9
April	756.0	1,078.6	1,025.6	357.0	525.4	678.1	728.6	503.8
May	776.3	1,088.2	1,025.6	390.9	596.3	678.1	728.6	508.9
June	778.5	1,087.6	1,116.1	390.9	597.2	678.1	728.6	508.9
July	780.9	1,093.2	1,129.2	390.9	597.7	678.6	728.6	508.9
August	763.2	1,040.9	1,129.2	390.9	598.2	678.6	728.6	508.9
September	863.7	1,230.0	1,528.6	453.0	599.8	811.9	728.6	591.0
Octover	923.4	1,311.0	1,528.6	453.0	603.5	811.9	903.4	620.4
November	1,003.7	1,348.0	1,659.8	453.0	937.6	811.9	903.4	620.4
December	1,051.7	1,466.7	1,676.6	533.1	940.8	811.9	903.4	620.4
Annual Average	821.1	1,169.2	1,232.2	405.3	631.0	714.3	717.8	534.2
1999								
January	1,135.0	1,689.8	1,676.6	533.1	976.3	814.7	903.4	623.3
February	1,170.1	1,747.2	1,676.6	533.1	1,006.4	814.7	907.5	706.7
March	1,232.4	1,795.5	1,676.6	533.1	1,035.3	814.7	907.5	1,076.6
April	1,238.5	1,804.9	1,714.9	535.6	1,042.3	818.0	907.5	1,077.2
May	1,262.2	1,874.3	1,714.9	535.6	1,043.0	818.0	907.5	1,077.2
June	1,285.9	1,939.0	1,714.9	535.6	1,051.8	818.0	907.5	1,077.2
July	1,290.1	1,918.8	1,742.0	535.6	1056.3	818.0	966.9	1,077.2
August	1,191.3	1,598.5	1,742.0	535.6	1,108.6	818.0	966.9	1077.2
September	1,299.9	1,583.2	1,830.1	535.6	1,316.7	966.8	966.9	1,610.7
Octover	1,332.4	1,602.2	1,830.1	535.6	1,320.6	966.8	1,114.0	1,625.2
November	1,485.9	1,662.9	1,983.6	667.1	1,327.1	966.8	1,432.7	2,227.0
December	1,513.6	1,743.3	1,983.6	667.1	1,329.0	966.8	1,432.7	2,227.0
Annual Average	1,286.4	1,746.6	1,773.8	556.9	1,134.5	866.8	1,026.8	1,290.2
2000								
January	1,598.9	1,928.8	2,005.6	742.0	1,348.3	966.8	1,465.0	2,286.9
February	1,652.4	2,083.8	2,005.6	742.0	1,352.3	966.8	1,465.0	2,286.9
March	1,689.8	2,176.2	2,005.6	742.0	1,369.6	966.8	1,481.3	2,286.9
April	1,677.2	2,122.7	2,073.7	743.3	1,374.6	983.0	1,481.3	2,300.0
May	1,660.8	1,990.5	2,079.0	811.8	1,481.4	975.0	1,464.2	2,351.1
June	1,880.2	1,622.2	2,208.3	813.3	1,519.0	972.8	3,016.6	2,389.8

Infration Rates

All Items	Food	Beverages and Tobacco	Clothing and Footwear	Housing	Household Operation	Trans-portation	Miscella-niuos
119.7	135.0	135.2	119.0	104.2	105.2	101.9	105.7
120.3	133.2	135.2	119.0	103.6	107.6	108.8	106.1
121.7	132.5	135.3	122.3	103.6	112.5	115.4	107.6
121.6	122.2	129.1	113.9	103.6	113.2	154.8	113.2
121.4	120.0	129.1	114.3	115.0	113.2	150.1	108.8
122.2	121.0	140.5	114.3	114.2	113.2	150.1	108.6
123.0	122.6	142.1	114.3	114.2	113.3	150.1	108.6
127.2	132.6	137.3	114.3	114.3	111.8	150.1	108.6
142.8	154.4	185.9	131.7	114.1	132.8	150.1	126.1
152.3	164.0	183.9	131.7	114.9	132.8	186.1	132.4
160.8	158.2	199.7	131.7	178.5	132.8	186.1	132.4
162.0	158.9	194.9	155.0	179.2	132.0	186.1	132.4
133.1	137.6	155.0	123.7	121.8	118.5	149.4	116.0
163.4	161.4	170.4	153.6	185.8	130.4	188.7	132.7
162.3	158.2	170.4	153.6	191.8	127.5	177.5	149.9
166.4	158.2	167.8	149.6	197.2	121.9	167.4	225.3
163.8	167.3	167.2	150.0	198.4	120.6	124.6	213.8
162.6	172.2	167.2	137.0	174.9	120.6	124.6	211.7
165.2	178.3	153.7	137.0	176.1	120.6	124.6	211.7
165.2	175.5	154.3	137.0	176.7	120.5	132.7	211.7
156.1	153.6	154.3	137.0	185.3	120.5	132.7	316.5
150.5	128.7	119.7	118.2	219.5	119.1	132.7	275.0
144.3	122.2	119.7	118.2	218.8	119.1	123.3	262.0
148.0	123.4	119.5	147.3	141.5	119.1	158.6	359.0
143.9	118.9	118.3	125.1	141.3	119.1	158.6	359.0
156.7	149.4	144.0	137.4	179.8	121.3	143.0	241.5
140.9	114.1	119.6	139.2	138.1	118.7	162.2	366.9
141.2	119.3	119.6	139.2	134.4	118.7	161.4	323.6
137.1	121.2	119.6	139.2	132.3	118.7	163.2	212.4
135.4	117.6	120.9	138.8	131.9	120.2	163.2	213.5
131.6	106.2	121.2	151.6	142.0	119.2	161.3	218.3
146.2	83.7	128.8	151.8	144.4	118.9	332.4	221.9

II-B

Agroforestry

Annex II-B: Agroforestry

II-B-1: Plan of agroforestry by type of soil and land gradient

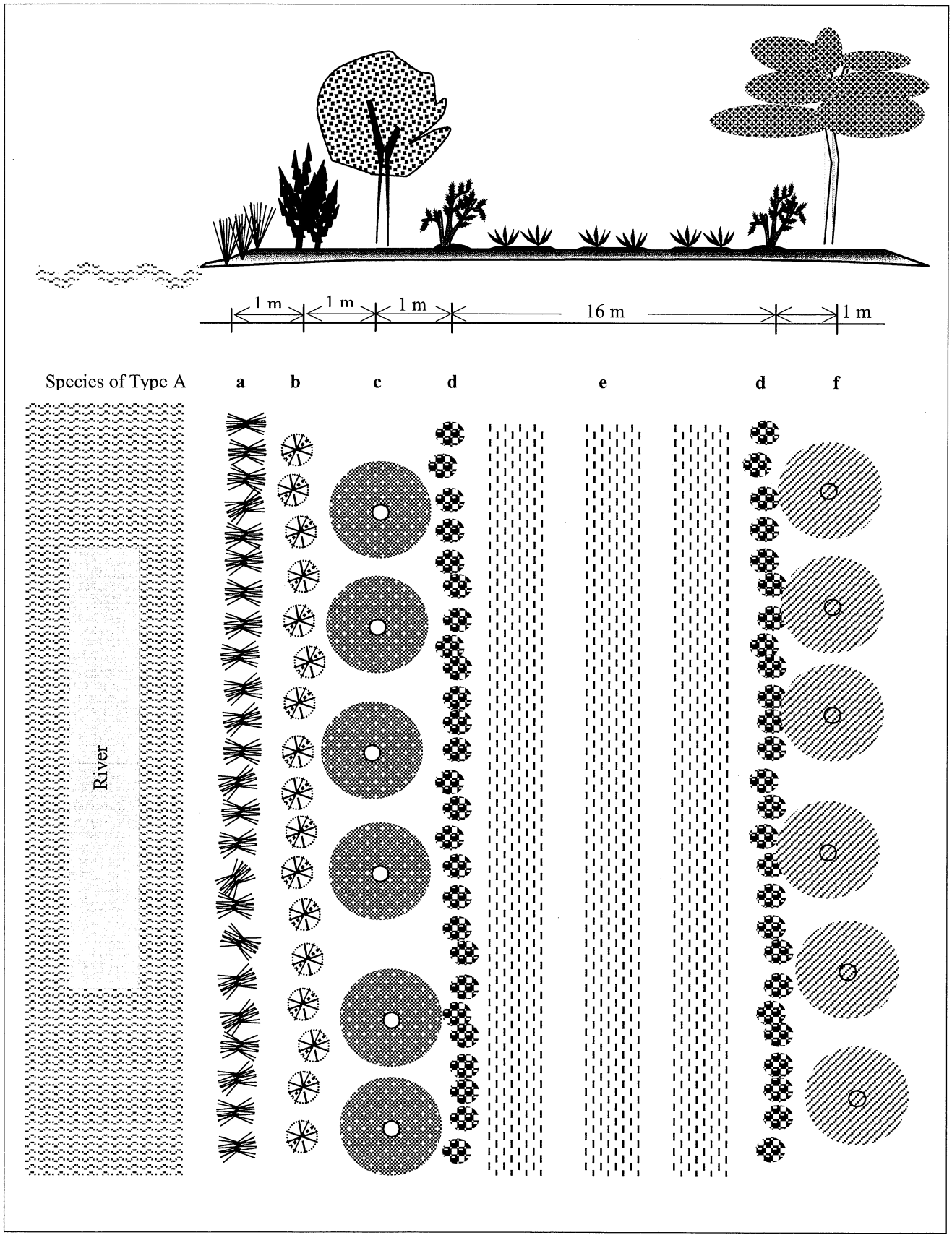
II-B-2: Recommended species for agroforestry in the MA

II-B-3: Bamboo (Species and similar project in Kenya)

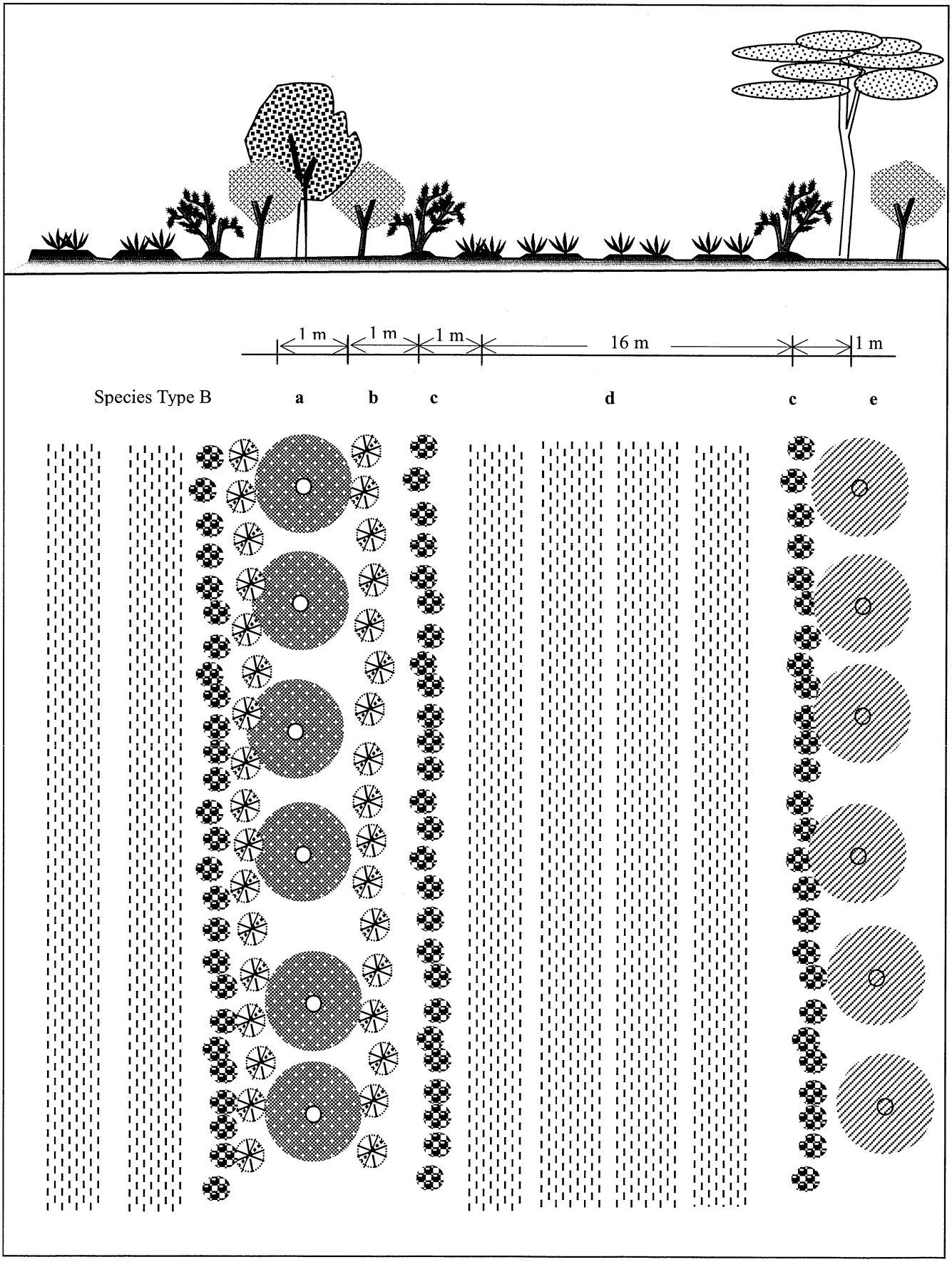
II-B-4: Plan of the AF nursery

II-B-1: Plan of agroforestry by type of soil and land gradient

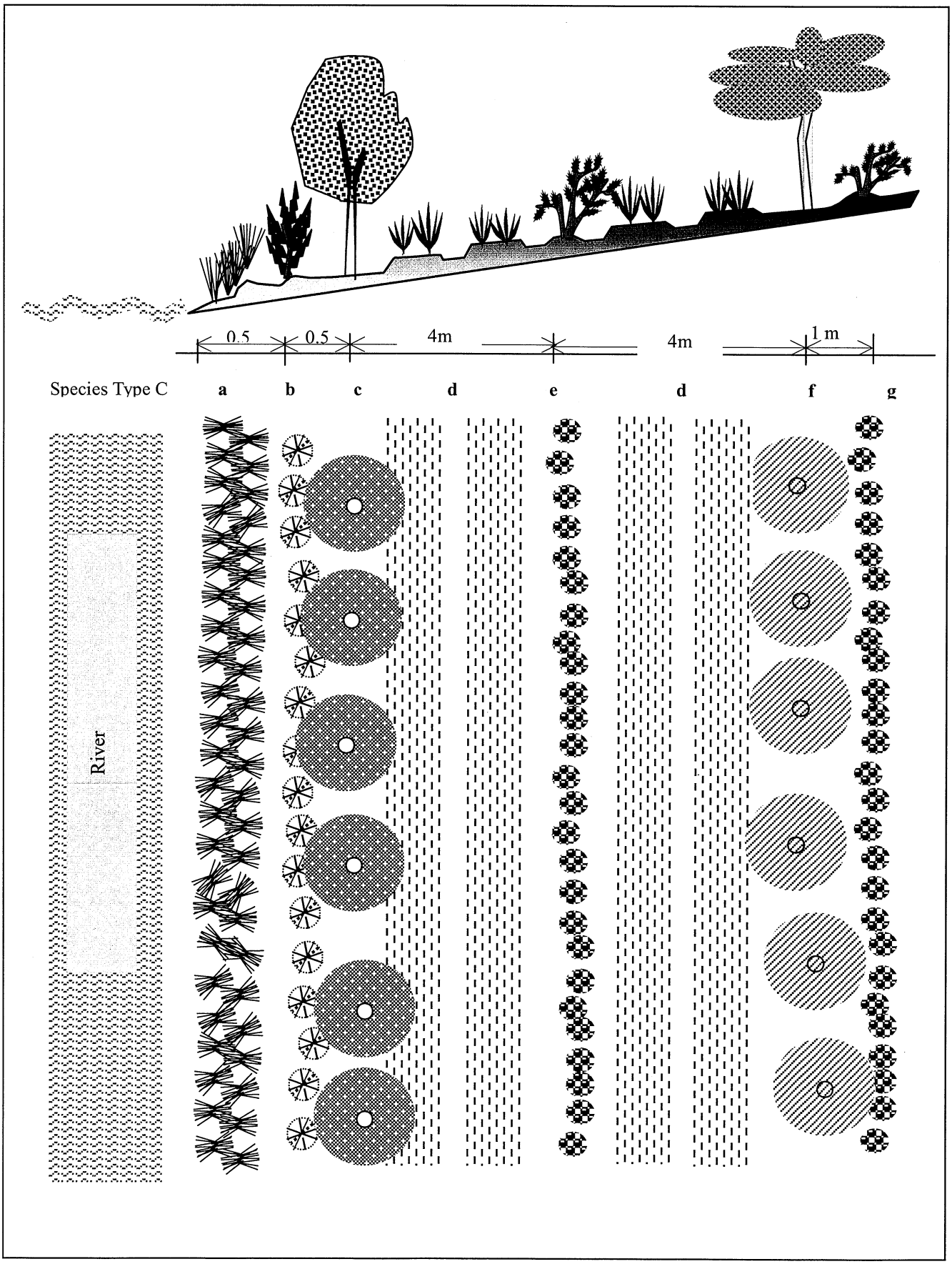
Agroforestry Type A: Sandy Loam, Less than 4 degree



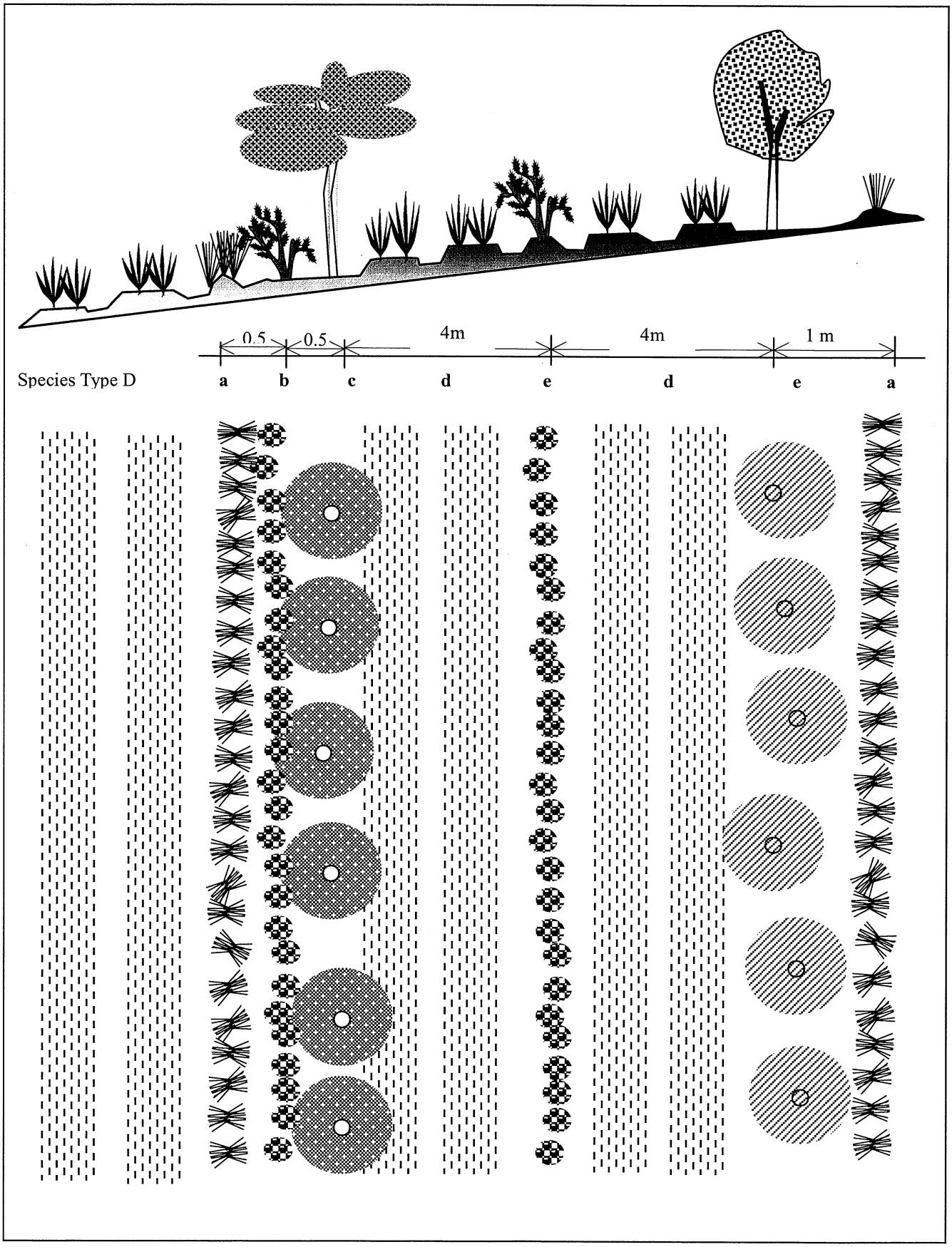
Agroforestry Type B: Loamy Sand, Less than 4 degree



Agroforestry Type C Sandy Loam, Land gradient 4 to 8 degree



Agroforestry Type D Loamy Sand, Land gradient 4 to 8 degree



II-B-2: Recommended species for agroforestry in the MA

Recommended agroforestry species

Agroforestry type	Design position 1)	Preferred species group I	Alternative species II
Agroforestry type A: Sandy Loam 0 to 4 degrees slope	a	*Vetiveria zizaniodes*	*Pennisetum purpureum*
	b	*Leucaena leucocephala*	*Sesbania sesban*
	c	*Senna siamea*	*Senna spectabilis*
	d	*Gliricidia sepium*	*Calliandra calothyrsus*
	e	Crops such as maize	crops
	d	*Gliricidia sepium*	*Calliandra calothyrsus*
	f	*Senna spectabilis*	*Gliricidia sepium*
Agroforestry type B: Loamy Sand 0 to 4 Degrees slope	a	*Senna spectabilis*	*Tephrosia vogelii*
	b	*Faidherbia albida*	*Acacia polyacantha*
	c	*Gliricidia sepium*	*Senna siamea*
	d	Crops	Crops
	c	*Gliricidia sepium*	*Ziziphus mauratiana*
	e	*Melia azedarach*	*Uaparca kirkiana*
Agroforestry type C: Sandy loam 4 to 8 Degrees slope	a	*Vetiveria zizanioides*	*Pennisetum purpureum*
	b	*Leucana leucocephala*	*Sesbania sesban*
	c	*Senna siamea*	*Senna spectabilis*
	d	Crops	Crops
	e	*Gliricidia sepium*	*Senna siamea*
	d	Crops	Crops
	f	*Senna spectabilis*	*Senna siamea*
	g	*Gliricidia sepium*	*Senna siamea*
Agroforestry type D: Loamy Sand 4 to 8 Degrees slope	a	*Vetiveria zizanioides*	*Syzigium cordatum*
	b	*Gliricidia sepium*	*Senna siamea*
	c	*Faidherbia albida*	*Acacia polyacantha*
	d	Crops	Crops
	b	*Gliricidia sepium*	*Ziziphus mauritiana*
	d	Crops	Crops
	e	*Senna siamea*	*Senna spectabilis*
	a	*Vetiveria zizanioides*	*Pennisetum purpureum*

Note 1: See 4 traces about agroforestry types at Annex II-B-1

2: Above tree species are selected from a point of view of improvement soil fertility

3: Type A and C are located at river side or dimba, and type B and D are found at rainfed field.

II-B-3: Bamboo (Species and similar project in Kenya)

Other bamboo species, which have been planted in Kenya by KEFRI, are as outlined in table below.

Botanical Name	Form of introduction	Origin
Arundinaria alpina	Offsets and wildings	Kenya
B. vulgaris var striata	Cuttings	Asia
B. bambos (B.arundinacea)	Seed	Thailand and India
B.nutans	offsets	India
B.thornicornis	offsets	Asia
B.tulda	Seed	Thailand and Indonesia
Cephalostachyum pergracile	Seed	Thailand and Indonesia
Dendrocalamus brandisii	Seed	Thailand
D. membranaceus	Seed	Thailand
D. aspera	Offsets	India
P.nigra var. henonis	Offsets	Asia
Shibataea ruscifolia (syn.S.kumasasa)	Offsets	Asia
Thyrsostachys siamensis	Seed	Thailand

Bamboo project in Kenya

Kenya Forestry Research Institute has been conducting trial planting of various varieties of bamboo species in Kenya. The project was started when it was realized that utilization of indigenous bamboo species, *Arundinaria alpina* was not only unsustainable, but was also leading to environmental degradation. Additionally, the Kenyan indigenous bamboo has a narrow range of ecological zones where it can be grown, usually between 2,400 and 3,400 meters above sea level. These are the areas reserved for watershed conservation and hence not available for biomass exploitation.

With the assistance of International Development Research Centre of Canada, KEFRI started importing bamboo material from many countries for planting in nurseries and in the field. Bamboo resource being used has thus come form Asia, India, Japan, Kenya Thailand and Zimbabwe. Planting has been in high potential zones, medium potential zones and Arid and semi-arid zones.

The project activities at Kwale and Kilifi Districts of Coast Province are relevant to Model Area in Malawi in terms of soils and climate. The project is also undertaken in areas where poverty is among highest in Kenya. The area has a narrow high potential coastal strip, but about 10 km inland, the area becomes semi-arid with rainfall averages of about 750 mm, very much like that of Model Area in Malawi where rainfall ranges from 650mm to 850mm. At the research stations of Jilore and Gede the following bamboo tree species have been planted.

Bambusa bambos, B arundinacea, B. tulda, Dendrocalamus brandisii, D aspera, D hamiltonii, D strictus, D membranaceus, Oxytenathera abyssinica, Thyrsostachys siamensis. These species have done well in the drier parts of coast province and have also been planted along riverbanks. They have produced large quantity of biomass for firewood and construction material. One lesson learnt by the project is that bamboo can be used for rehabilitation of dry degraded area. The shrub also grows very fast. Within two years growth is dramatic.

Bamboo provides important raw material for horticultural flower farming, handicraft, fencing material , tooth picks, basket making for tea industry and match sticks.

Contact Person:

Dr. Benard Kigomo
Kenya Forestry Research Institute
P.O. Box 20412 Nairobi Kenya

II-B-4: Plan of the AF nursery