

Table 1. Examples of trees found conserved, *in situ*, in farms in PLEC studies at Gyamfiase Adenya since 1994

Local name in Twis	Common English name	Botanical name	Use
Odwen	Camwood	<i>Baphia nitida</i>	M/Fu
Akakapenpen	?	<i>Rauvolfia vomitoria</i>	M/fu
Onyankyren	Sandpaper tree	<i>Ficus exasperata</i>	O
Osen/Yooye	Velvet tamarind	<i>Dialium guineense</i>	F/Fu/O
Ankye	Akee apple	<i>Blighia sapida</i>	F/Fu/O
Abrewa aninsu	?	<i>Hoslundia opposita</i>	M/Fu/O
Osisriw	?	<i>Newbouldia laevis</i>	M/fu
?	Resurrection plant	<i>Bryophyllum pinnatum</i>	M/fu
Pepea	?	<i>Phyllanthus discoideus</i>	Fu
Emire	?	<i>Temnalia ivorensis</i>	T
Ofosow	?	?	Fu
Osese	?	<i>Holarrhena floribunda</i>	F/C
Owudifo akete	?	<i>Anthocleista vogelii</i>	M
Okronoo	Red-flowered silk-cotton tree	<i>Bombax buonopozense</i>	M
Awonwee	?	<i>Olex subscorpioidea</i>	M
Opanpan	?	?	Fu
Nyamedua	Pagoda tree	<i>Altonia boonei</i>	M
Agyama	Christmas bush	<i>Alchornea cordifolia</i>	M
Bronyadua	Brimstone tree	<i>Morinda lucida</i>	M
Adurubrafo	?	<i>Maraya micrantha</i>	M
Odwendwena	?	<i>Lecaniodiscus cupaniodes</i>	O
Atwere	?	?	O
Atuaa	Hog plum	<i>Spondias mombin</i>	M
Kyenkyen	Bark cloth tree	<i>Antiaris toxicaria</i>	F/O
Odum	?	<i>Milicia excelsa</i>	T

F=Food; M= Medicinal; Fu= Fuelwood; T= Timber; C=Carving; O=Other uses; ?= Not K

Table 2. Plants in a home garden agroforestry at Otwetiri in Gyamfiase-Adenya, a PLEC demonstration site in southern sector of Ghana's forest-savanna transition zone.

Crop				Other plant (sapling/tree)			
<i>Local Name in Twi</i>	<i>Common English Name</i>	<i>Botanical Name</i>	<i>Use</i>	<i>Local Name in Twi</i>	<i>Common English Name</i>	<i>Botanical Name</i>	<i>Use</i>
Bankye	Cassava/ Manioc	<i>Manihot esculentus</i>	F	Odwen	Camwood	<i>Baphia nitida</i>	M/ Fu
Aburow	Maize/ Corn	<i>Zea mays</i>	F	Akakapenpen	?	<i>Rauwolfia vomitoria</i>	M/ Fu
Afasew	Wateryam	<i>Dioscorea alata</i>	F	Onyankyren	Sandpaper tree	<i>Ficus exasperata</i>	O
Amankani	Cocoyam	<i>Xanthosoma maffafa</i>	F	Oseno/ Yooye	Velvet tamarind	<i>Dialium guineense</i>	F/O
Brode	Plantain	<i>Musa paradisiaca</i>	F	Ankye	Akee apple	<i>Blighia sapida</i>	F/Fu /O
Brofere	Pawpaw	<i>Carica papaya</i>	F	Abrewa- aninsu	?	<i>Hoslundia opposita</i>	M/ Fu
Abrobe	Pineapple	<i>Ananas comosus</i>	F	Osisriw	?	<i>Newbouldia laevis</i>	M/ Fu
Mmofra ntorewa		<i>Solanum torvum</i>	F/M	?	Resurrection plant	<i>Bryophyllum pinnatum</i>	M/ Fu
Mako	Pepper	<i>Capsicum annum</i>	F				

F= food; M=medicinal; Fu=fuelwood; O=other uses; ?=not known

Source: Gyasi (1999).

Table 3. Some of the most important plant genetic resources selected as crops by farmers in West Africa

Crop Type	Common	Scientific	Where Cultivated (Country/Countries)
Tubers	Cassava	<i>Manihot esculentus</i>	Throughout West Africa
	Yam	<i>Dioscorea sp</i>	Ghana, Nigeria, Togo, Benin
	Water Yam	<i>Dioscorea sp</i>	Ghana, Nigeria
	Irish potato	<i>Ipomoea batatas</i>	Nigeria, Togo, Senegal, Guinea, Cote d'ivoire, Cameroon
	Sweet potato	<i>Ipomoea sp</i>	Nigeria, Togo, Senegal Guinea, Coted'ivoire, Cameroon, Ghana
	Banana	<i>Musa sp</i>	Ghana, Nigeria, Cameroon
	Plantain	<i>Musa sapientum</i>	Ghana, Nigeria, Cameroon
Corm	Cocoyam /Taro	<i>Colocasia sp./ Xanthosoma mafafa</i>	Ghana, Nigeria, Cameroon
Grain Legumes	Cowpea	<i>Vigna unguiculata</i>	West Africa
	Gorundnuts	<i>Arachis hypogea</i>	West Africa
Non-Legume	Maize/corn	<i>Zea mays</i>	Throughout Africa
Grain Staples	Rice (both dry & wetland)	<i>Oryza sativa</i>	West Africa
	Sorghum	<i>Sorghum bicolor</i>	West Africa
	Millet	<i>Pennisetum americanum</i>	West Africa
Oil Palm	Oil Palm	<i>Elaeis guinensis</i>	Cote d'Ivoire, Ghana, Nigeria
Vegetables & Spices	Pepper	<i>Capsicum sp</i>	West Africa
	Tomatoes	<i>Lycopersicon esculentus</i>	Throughout Africa
	Onions & shallots	<i>Allium ascalonium</i>	Burkina Faso, Cote d'Ivoire, Ghana, Nigeria, Benin
	Okro	<i>Abelmoschus esculentus</i>	Nigeria, Cote d'Ivoire, Benin, Ghana
	Egg plant	<i>Solanum</i>	West Africa
	Garden eggs	<i>melongena</i>	

Table 4. Some common leafy vegetables used in Ghana and Nigeria

Name		Where used (Country/Countries)
Common	Scientific	
Bitter leaf	<i>Vernonia amygdalina</i>	Nigeria
Amaranth	<i>Amaranthus sp</i>	Nigeria, Ghana
	<i>Corchorus olitorius</i>	Nigeria, Ghana (Northern)
	<i>Hibiscus sabderifera</i>	Nigeria, Ghana (Northern)
Kontomire	<i>Xanthosoma mafafa (fresh, young, tender leaves)</i>	Ghana

Table 5. Some lesser-known, lesser-used leafy vegetables available in Ghana

Common Name	Scientific Name
Wild Lettuce	<i>Launea taraxacifolia</i>
Cassava leaves	<i>Manihot esculentus</i>
-	<i>Emilia sonchifolia</i>
-	<i>Ceiba pentandra</i>
Bitter leaf	<i>Vernonia amygdalina</i>
-	<i>Corchorus olitorius</i>
-	<i>Hibiscus congestifolius</i>

Table 6. Known Pollinating agents of cocoa (*Theobroma cacao*) and kola/cola (*Cola nitida*) in some countries of West Africa.

Pollinator (Family/Genus/Species)	Crop	Researcher(s)/Authors(s), Year of publication	Country
<i>Crematogaster (Sphaerocrema, sp. No. 1267)</i>	Cocoa	Posnette (1940)	Gold Coast/(Ghana)
<i>Forcipomyia ashantii</i>	Cocoa		
<i>Forcipomyia inornatipennis</i>	Cocoa		
<i>Forcipomyia clastrieri</i>	Cocoa		
<i>Forcipomyia squamipennis</i>	Cocoa		
Species of other genera			
<i>Culicoides</i>	Cocoa		
<i>Stilobezzia</i>	Cocoa		
<i>Atrichopogon</i>	Cocoa		
Species of Family Halictidae			
<i>Ceratopogonids</i>	Cocoa	Sarfo, 2001-per. Comm., Kaufmann (1973 a, 1973b; 1974a, 1974b, 1974c and Mire (1972), Youdeowei as cited by Kaufmann, loc. cit.)	Gold Coast/(Ghana), Nigeria, Cameroon
<i>Cecidomyiids</i>	Cocoa		
<i>Psyllids</i>	Cocoa		
<i>Torma colae</i>	Kola/cola		
<i>Forcipomyia sp</i>	Kola/cola		

Table 7. Some Integrated Pest Management (IPM) activities practised in Ghana, indicating approximate years of operation.

Crop	Pest	Control (Insect/Wasp)	Period
Cassava	Mealy bug	<i>Apoanagnus lopezi</i>	1994-1996
		<i>(Epidinocarsis lopezi)</i>	
Mango	Mealy bug	<i>Rastrococcus invadens</i>	1996-1998
		<i>Gyranosidae tebygi</i>	
		<i>(Anagnus mangicola)</i>	
Cassava	Green mite	<i>Monorychelus tanajoa</i>	1995
		<i>Typhlodrimatus manihot</i>	
Most crops	Grasshopper	<i>Methanhizum anisoplea</i>	1997
		<i>(Fungal pathogen)</i>	
		<i>'Green muscle' –i.e. A Mycoinsecticide commercial product</i>	
Most crops	Termites	<i>I. C. 30 (M. anisoplea) (An isolated myco insecticide)</i>	About to commence as future project
STORAGE PROBLEMS			
Maize storage	Larger Grain Borer (LGB)	<i>Terretriosoma nigresince</i>	
Broad leaved crops	Spiral white fly	<i>Eucarsia guadelop</i>	
		<i>E. hitensis</i>	

Table 8. Floral diversity in some landuse stages and field types in Southern Ghana

Landuse Stage/ Field type	Demonstration site	Species Richness
• Emerging agroforest	Gyamfiase-Adenya	56
• Woodlot (Cassia Siamea)	Gyamfiase-Adenya	44
• Native Forest	Gyamfiase-Adenya	99
• Cassava Monocrop	Gyamfiase-Adenya	56
• Fallow (Shrub-dominated)	Gyamfiase-Adenya	49
• Homegardens	Gyamfiase-Adenya	25
• Homegarden agroforest	Sekesua-Ososton (Adwenso)	85

Enu- Kwesi *et al.*, 2000

Table 10. Properties of some Indigenous Rice Varieties (IRV) around Bawku-Manga in Northern Ghana

IRV	Maturity (Days)	Yield Potential (t/ha)
• Sakera	90	2.5-3.0
• Asamolgu	90	2.5-3.0
• Nagamui	90	2.5-3.0
• Santie	90	2.5-3.0
• Agonsana	90	2.5-3.0
• Peter	90	2.5-3.0
• Abunga	115-120	3.0-3.5
• Agona	115-120	3.0-3.5
• Agongula	115-120	3.0-3.5
• Mr. Moore	115-120	3.0-3.5

After Anane Sekyi, C. and Dittoh, S. (2000)

Table 12. Official documents bearing on biodiversity conservation in West Africa with special reference to Ghana

Title & Country	Publisher/Printer Place & Year of Publication	Objective and/or Comment
1. Seven-Year Plan for National Reconstruction and Development (GHANA)	Office of the Planning Commission/Government printing Department, Accra, 1964	Unsuccessfully sought accelerated agricultural development through special emphasis upon publicly owned large-scale mechanization.
2. Medium Term Agricultural Development Programme (MTADP): An Agenda for sustained Agricultural Growth and Development (GHANA)	Ghana, Republic of,: Ministry of Agriculture, Accra, 1990	Sought accelerated, ecologically harmonious sustainable agricultural modernization and production.
3. National Soil Fertility Management Action Plan (GHANA)	Government of Ghana: Ministry of Food and Agriculture, Accra, 1998	Overall goal is to restore and maintain soil fertility through promotion of sound land management practices necessary for agricultural intensification

4. Crop Protection Policy (GHANA)	Unpublished records of the Ministry of Food and Agriculture, Crops Services Department.	Aimed at “increased agricultural production and improved quality of products through reduction in losses caused by pests and disease”
5. Ghana Environmental Action Plan, I (GHANA)	Environmental Protection Council, Accra, No Date	Declares Ghana’s environmental policy as aimed at “ensuring a sound management of resources and the environment, and to avoid any exploitation of these resources in a manner that might cause irreparable damage to the environment” (p. ix)
6. Forest and Wildlife Policy (GHANA)	Ghana, Republic of: Ministry of Land and Forestry, Accra, 1994	Aimed at “conservation and sustainable development of the nation’s forests and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society’ (p.8)
7. National Land Policy (GHANA)	Ghana, Republic of: Ministry of Lands and Forestry, Accra 1999	Seeks to promote “judicious use of the nation’s land and all its natural resources by all sections of the Ghanaian society in support of various socio-economic activities undertaken in accordance with sustainable management principles and in maintaining viable ecosystem” (p.6)
8. P.N.D.C. L 152: Land Title Registration Law (GHANA)	Provisional National Defense Council/Ghana Publishing Corporation, Accra, 1986	Aims at compulsory land title registration so as to optimize use of land for agriculture and other activities by securing titles to land
9. PNDCL 207: Local Government Law 1988 (GHANA)	PNDC/Ghana Publishing Corporation (Assembly Press), 1989	Seeks optimal utilization of resources for development by decentralization of governance through District Assemblies and other local organs. The Assemblies are advised by various committees, including one on the environment

10. Pesticide Control and Management Act, 1996: Act 528 (GHANA)	Government printer, Assemblies Press, Accra	Seeks to control pesticides usage
11. Environmental Assessment Regulations, 1999: L. 1.1652 (GHANA)	Government Printer, Assembly Press, Accra	Seeks to regulate environmental impact of major economic project
12. Biodiversity Strategy and Action Plan (Draft for comment. Not to be quoted)	Ministry of Environment, Science and Technology, Accra 1998	Ghana's evolving biodiversity policy
13. Land Use Decree (NIGERIA)	Nigeria, Federal Republic of Lagos, 1978	Vests all land in the government for the use and common benefit of all Nigerians. It represents an attempt to redistribute property in land so as to achieve a wider measure of social justice, and seeks to tackle the economic ills associated with extreme fragmentation of farmland
14. National reports on the Convention on Biological Diversity to the Conference of Parties by BENIN, CAPE VERDE, GAMBIA, MALI and SENEGAL	Downloaded from the internet website, http://216.95.224.234/agro/national_reports.html	National reports relating to the Convention on Biological Diversity
15. Information from various secondary sources	-	-

Table 9. Kinds, Varieties and Land races of Yams grown in the three (3) WAPLEC Demonstration sites of Southern and Northern Ghana.

Species Types		Demonstration Sites and Number of Varieties			
Common Name	Scientific Name	Southern Ghana			Northern Ghana
		Amanase- Whanabenya	Gyamfiase- Adenya	Sekesua Osonson	Bongnayili- Dugu-Song
▪ White Yam (<i>Kooko ase bayere</i>)	<i>Dioscorea rotundata</i>	17	23	24	-
	<i>Dioscorea rotundata</i> + <i>Dioscorea cayenensis</i>	-	-	-	24
▪ Water Yam	<i>D. alata</i>	10	14	13	-
▪ Yellow Yam	<i>D. cayenensis</i>	3	4	5	-
▪ Bitter Yam	<i>D. dumetorum</i>	2	3	6	-
▪ Chinese Yam	<i>D. esculenta</i>	1	1	1	-
▪ Aerial Yam	<i>D. bulbifera</i>	1	1	1	-

¹Blay E. and ²Kranjac-Berisavljevic G. and Gandaa B. Z. 2000

Table 11. Plant species richness and utility value of species of different landuse stages and field types in the Gyamfiase-Adenya Demonstration Site in Southern Ghana.

<i>Landuse Stage/Fieldtype</i>	<i>Species Richness and Utility Value (%)</i>							
	Total (Absolute Value)	Crop Range	Medicinal	Non-Crop Fuelwood	Timber	Fodder	Craft	Comm.
▪ Annual Cropping (monoculture)	37	9-13	67-71	28-46	1-3	0	1	0
▪ Annual Cropping (mixed)	37	15-29	56-63	36-43	1-3	3	10	4
▪ Homegarden (agroforest)	25	25-29	68-69	25-42	6	0	4	0
▪ Home garden	49	10-13	45-92	25	2	4	3	8
▪ Agroforest (non-home garden)	31	21	63	69	11	0	7	13
▪ Fallow								
– Grass-dominated	-	-	-	-	-	-	-	-
– Shrub-dominated	49	10	45	26	2	6	8	4
– Tree-dominated	38	7	63	50	9	-	1	1
▪ Orchards/Plantations								
– Oil-palm	51	8	46	28	3	2	2	8
– Citrus	59	10	59	27	3	2	3	0
– Cocoa	57	10	33	21	2	1	4	4
▪ Native Forest	70	21	52	38	12	8	9	5
▪ Edges (Scarce)	36	-	-	-	-	-	-	-
▪ Plant nurseries	16	69	0	6	3	0	0	41