16. Zanzibar-Inhambane scrub forest (Fq)

16.1. Description

Zanzibar-Inhambane scrub forest forms a quasi-continuous belt that separates the forests of the coastal region (*i.e.* Zanzibar-Inhambane undifferentiated forest [Fp]) from the bushlands of the interior (*i.e.* especially deciduous bushland [Bd]). This forest reaches the Kenyan coast between Malindi and Lamu, where the rainfall is lower than elsewhere, and extends to southern Tanzania. ***Diospyros cornii*** forms a discontinuous upper canopy of 9 to 15 m high. ***Manilkara mochisia*** is an almost constant associate, but is less plentiful. In many places, scrub forest has been degraded and converted into secondary deciduous bushland (White 1983 p. 188). ***Diospyros cornii*** and ***Manilkara mochisia*** are also emergent trees on termite mounds within Zanzibar-Inhambane edaphic grassland (White 1983 p. 189).

The annual rainfall is between 500 and 750 mm (White 1983 p. 188). Besides the dominant ***Diospyros cornii*** and ***Manilkara mochisia***, regional indicator species (characteristic species listed by White (1983) [1983] that were only provided for Zanzibar-Inhambane scrub forest and no other Zanzibar-Inhambane forest types) that were listed as characteristic species for the national maps include ***Adenia globosa, Bivinia jalbertii, Catunaregam nilotica, Croton pseudopulchellus, Diospyros consolatae, Dobera glabra*** (abundant especially where the water-table is near the surface), ***Euclea natalensis, Euclea racemosa, Euphorbia candelabrum*** (rare), ***Euphorbia grandicornis, Grandidiera boivinii, Haplocoelum foliolosum, Haplocoelum inoploeum, Newtonia erlangeri*** (only in northern scrub forests), ***Ochna thomasiana, Sideroxylon inerme, Spirostachys venenifera, Suregada zanzibariensis, Thespesia danis*** and ***Thylachium africanum***.

16.2. VECEA region

Within the VECEA region, Zanzibar-Inhambane scrub forest is only mapped for the coastal areas of Kenya and Tanzania.

Clarke and Robertson (2000) mention that single tree dominance is rarely encountered in Zanzibar-Inhambane scrub forest (they used the synomym of "mixed Eastern African coastal scrub forest") and therefore classified these forests as "mixed scrub forests". The most frequently encountered dominant species that they list are often species that they also listed for mixed dry forest (Fp): ***Afzelia quanzensis, Bombax rhodognaphalon, Brachylaena huillensis, Combretum schumannii, Manilkara sulcata*** and *Pteleopsis myrtifolia*. They seem to suggest that the main floristic difference between "mixed dry forest" and "mixed scrub forest" is the absence of *Grewia* species (such as *Grewia conocarpa*) and *Combretum* species (except ***Combretum schumannii***) in mixed dry forest.

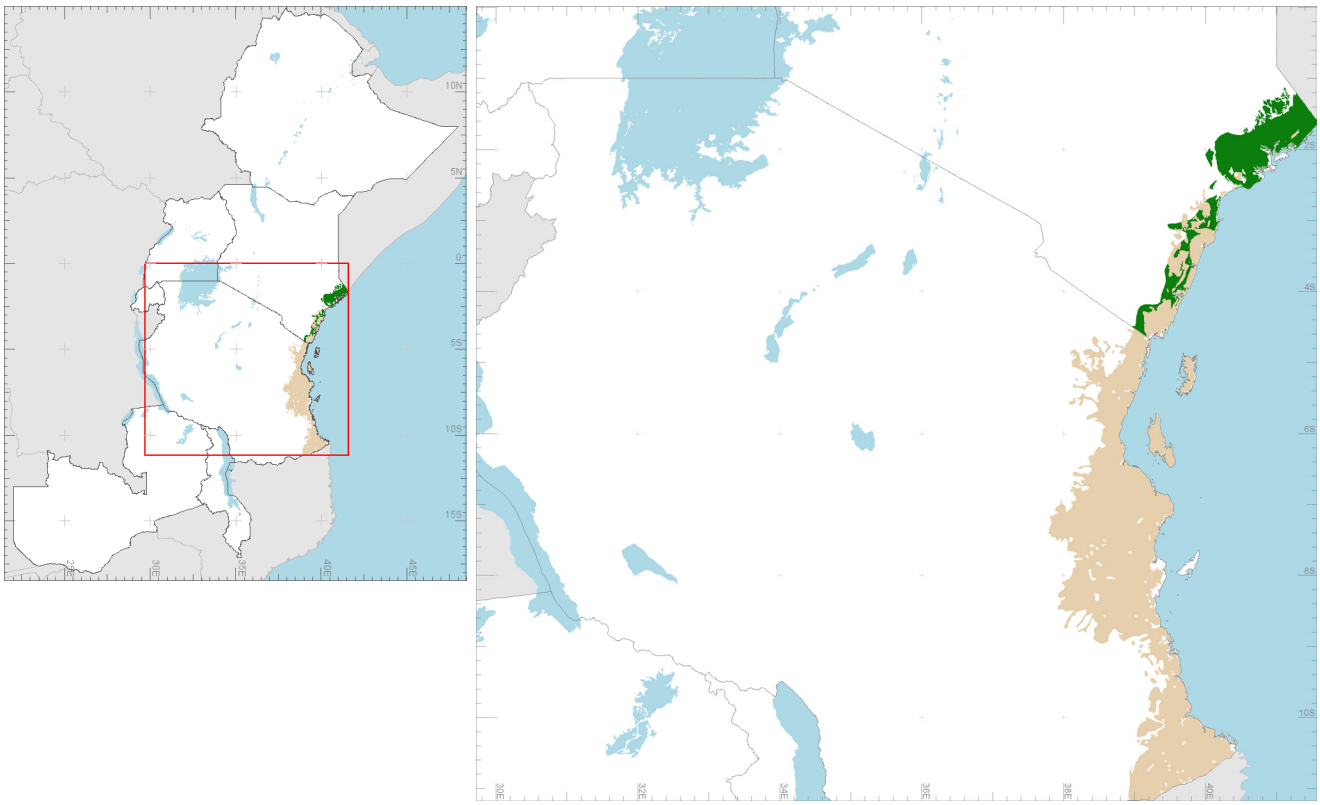
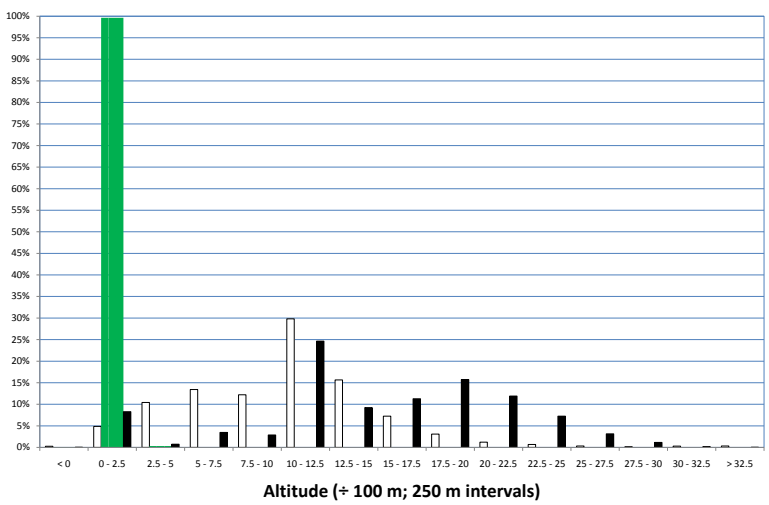


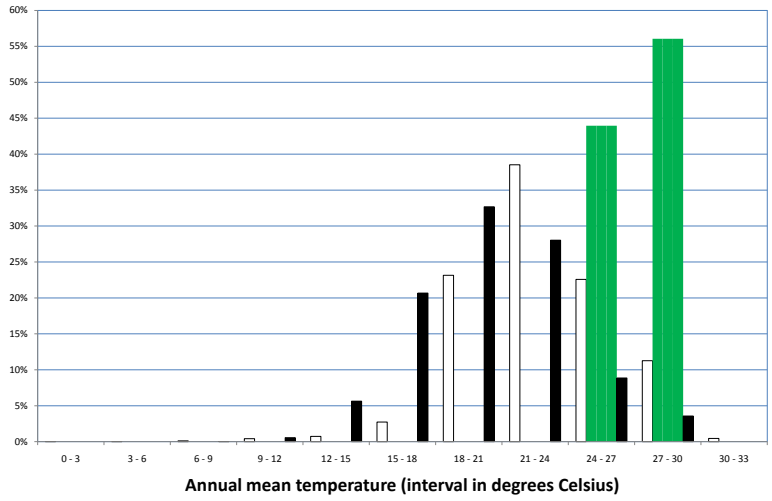
Figure 16.1. Mapped distribution of Zanzibar-Inhambane scrub forest in the VECEA region (Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda and Zambia). Where this vegetation type does not occur in mosaic, it is depicted by green polygons. This vegetation type is mainly mapped as part of vegetation mosaics.

Investigation of environmental distribution of Zanzibar-Inhambane scrub forest in the VECEA region (limits are for areas of the VECEA map where this forest is not mapped as mosaic) shows that most of this forest type occurs below 250 m, making this forest type together with Zanzibar-Inhambane undifferentiated forest (Fp) one of the two forest types that occur at the lowest altitudes in the VECEA region. Annual rainfall of Zanzibar-Inhambane undifferentiated forest is definitely below average (compared to other forests) as most samples receive between 400 and 1200 mm (99.3%) and this is the only forest type where a substantial number of samples received rainfall between 400 and 600 mm (17.4%).

(a)



(b)



(c)

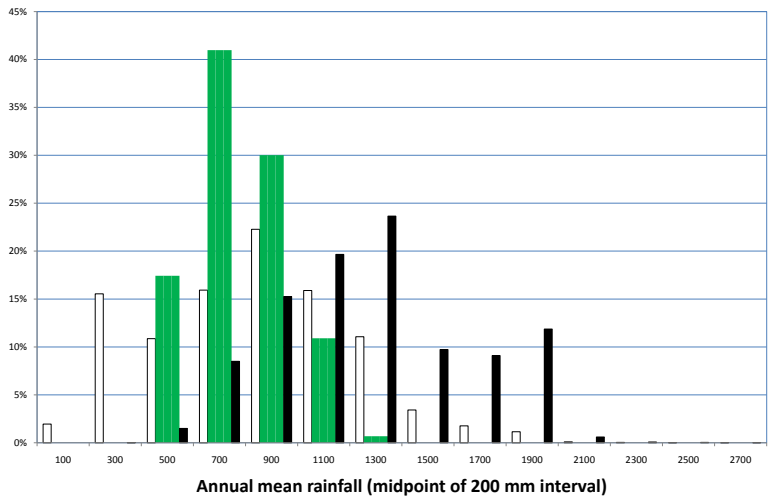


Figure 16.2. Histograms of the distribution of altitude (a), mean annual temperature (b) and mean annual rainfall (c). Bars at the centre of each interval show the percentage of samples within Zanzibar-Inhambane scrub forest (Fq, n = 3,668). Bars on left (open) show the overall percentage of samples (n = 740,047). Bars on the right (black) show the percentages of samples within forests (n =59,013).

16.3. Species composition

Species assemblages were obtained from the following references:

- Burgess and Clarke (2000 Appendix 2 Table 3). Species listed for "mixed eastern African coastal scrub forest" were coded "x". Species only listed from sources from Mozambique, Pemba and the Selous Game Reserve were excluded.

Characteristic species were determined as:

- Dominant species listed by White (1983) (1983 p. 188) were coded "D".

Within the information on assemblages, coding "f " indicates that there is information that the species potentially occurs in the vegetation type since it occurs in the focal country and in the same forest type in the regional documentation (White 1983).

Table 16. Species composition of Zanzibar-Inhambane scrub forest (Fq)

Species	Regional status	(coast)
Acacia brevispica		x
Acacia bussei	secondary	f
Acacia mellifera	secondary	f
Acacia nilotica	secondary	f
Adenia globosa	indicator	x
Afzelia quanzensis	not characteristic (indicator for Zanzibar-Inhambane undifferentiated forest)	x
Albizia adianthifolia	not characteristic (indicator for moister variants of Zanzibar-Inhambane undifferentiated forest)	x
Albizia anthelmintica	secondary	x
Albizia petersiana	not characteristic (indicator for drier variants of Zanzibar-Inhambane undifferentiated forest)	x
Albizia versicolor		x
Allophylus rubifolius		x
Bivinia jalbertii	indicator	f
Bombax rhodognaphalon	not characteristic (indicator for moister variants of Zanzibar-Inhambane undifferentiated forest)	x
Boscia salicifolia		x
Brachylaena huillensis	not characteristic (indicator for drier variants of Zanzibar-Inhambane undifferentiated forest)	x
Carissa spinarum		x
Catunaregam nilotica	indicator	f
Combretum schumannii	not characteristic (indicator for Zanzibar-Inhambane undifferentiated forest)	x
Cordyla africana	not characteristic (characteristic for Zanzibar-Inhambane lowland rain forest and Zanzibar-Inhambane undifferentiated forest)	x
		x
Dalbergia nitidula		x
Dialium orientale		x
Diospyros consolatae	indicator	x
Diospyros cornii	dominant	D
Diospyros mespiliformis	not characteristic (characteristic for Zanzibar-Inhambane lowland rain forest and Zanzibar-Inhambane undifferentiated forest)	x
Dobera glabra	indicator (abundant especially where the water-table is near the surface)	f
Euclea natalensis	indicator	x
Euclea racemosa	indicator	f
Euphorbia candelabrum	indicator (rare and often absent)	f
Euphorbia grandicornis	indicator (dense communities in the understorey)	f
Euphorbia tirucalli		x
Garcinia livingstonei		x
Grandidiera boivinii	indicator	f
Grewia villosa		x
Haplocoelum foliolosum	indicator	f
Haplocoelum inoploeum	indicator	x
Harrisonia abyssinica		x
Hymenaea verrucosa	not characteristic (indicator for Zanzibar-Inhambane undifferentiated forest)	x

Species	Regional status	(coast)
Hyphaene compressa	secondary (palm species)	f
Lecaniodiscus fraxinifolius		x
Manilkara mochisia	dominant	Dx
Manilkara sansibarensis	not characteristic (indicator for Zanzibar-Inhambane undifferentiated forest)	x
Manilkara sulcata	not characteristic (indicator fordrier variants of Zanzibar-Inhambane undifferentiated forest)	x
Markhamia obtusifolia		x
Milicia excelsa	not characteristic (characteristic for Zanzibar-Inhambane lowland rain forest and Zanzibar-Inhambane undifferentiated forest)	x
Newtonia erlangeri	indicator (only in northern forests)	x
Ochna thomasiana	indicator	f
Olea europaea	(*Olea europaea* ssp. *cuspidata*, synonym: *Olea africana*)	x
Sideroxylon inerme	indicator	f
Sorindeia madagascariensis		x
Spirostachys venenifera	indicator	x
Strychnos henningsii		x
Strychnos innocua		x
Suregada zanzibariensis	indicator	x
Syzygium cordatum		x
Syzygium guineense		x
Terminalia prunioides		x
Terminalia spinosa	indicator of disturbance	f
Thespesia danis	indicator	x
Thylachium africanum	indicator	x
Vitex doniana		x
Vitex payos		x
Zanthoxylum chalybeum		x

17. Somalia-Masai scrub forest (Fs)

17.1. Description

In a few places in East Africa, Somalia-Masai scrub forest (7 - 10 m tall) occurs at relatively low locations (700 - 950 m) where rainfall is too low to support true forest (*e.g.* Afromontane dry transitional forest [Fh]) but rainfall is also higher than that of Somalia-Masai *Acacia-Commiphora* deciduous bushland and thicket (Bd; White 1983 p. 116).

White (1983) describes two Somalia-Masai scrub forests that occur in Tanzania: (i) a scrub forest that occurs on the escarpment above Lake Manyara; and (ii) a similar scrub forest that occurs on the steep northern slopes of the Western Usambara mountains. The dominant species include ***Commiphora baluensis, Commiphora campestris, Commiphora engleri, Commiphora merkeri*** and ***Euphorbia candelabrum*** (which we expect is the undefined "candelabra *Euphorbia*" that White (1983) refers to; White 1983 p. 116 - 117).

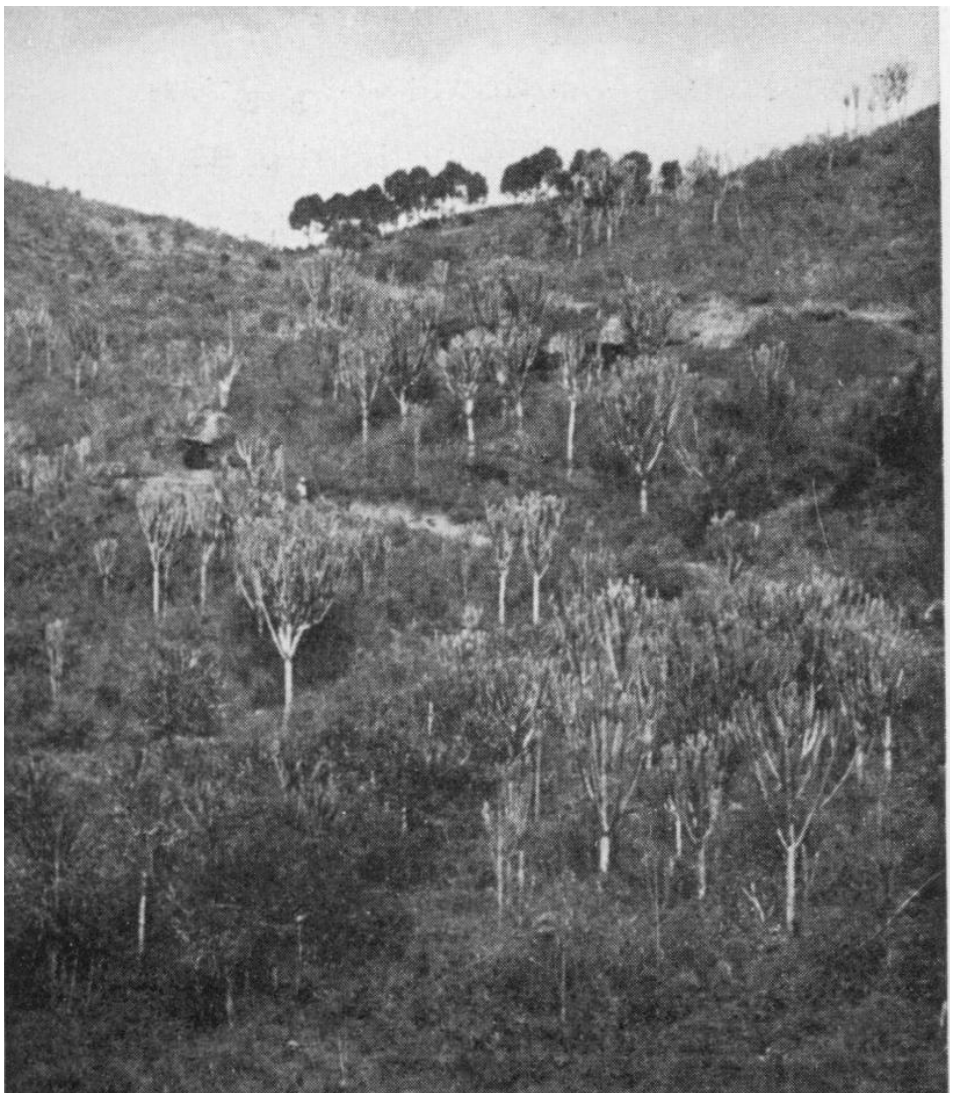


Figure 17.1 The succulent *Euphorbia* thicket is one of the three "specialized thickets of regional extent" on Gillman's (1949) vegetation map. White (1983 p. 116) listed this photograph (Gillman 1949 photograph 8) where Somalia-Masai scrub forest described. Within the VECEA map, we included the succulent *Euphorbia* thicket within the mapping unit of evergreen and semi-evergreen bushland and thicket (Be; see text). Image obtained from URL: *http://www.jstor.org/stable/211155*.

Figure 17.2 The photograph described as "woodland thicket" by Pratt *et al.* 1966 (Photograph 9) was one of the two photographs listed by White (1983 p. 116) for Somalia-Masai scrub forest. Image obtained from URL: *http://www.jstor.org/stable/2401259*.

17.2. VECEA region

Within the VECEA region, Somalia-Masai scrub forest was mapped as evergreen bushland in Tanzania (Be). Reasons for this mapping decision are made immediately below, whereas there was a clear cross-reference between the "Somalia-Masai scrub forest" sensu White (1983 pp. 116 - 117)" and the "succulent *Euphorbia* thicket" that was mapped and described by Gillman (1949) as one of the "thickets of regional extent": White (1983 p. 116) directly referred to Figure 8 (caption "Encroaching *Euphorbia* thicket, outer slopes of high block of Usambara above Mombo") of the Gillman (1949) documentation.

We mapped Somalia-Masai scrub forest as evergreen bushland (Be). Our main aims were to: (i) highlight the similarity of mosaics of scrub forests (fe) and evergreen bushland (Be) that occur in the Lake Victoria region; and (ii) suggest that evergreen bushland occurs outside the greater Serengeti system of Tanzania. By mapping the "*Euphorbia* thickets" as evergreen bushland (Be), we also followed the suggestion by White (1983) that this vegetation type occurs for climatic (rainfall) reasons rather than edaphic (stony soils) reasons.

More information on the scrub forest above Lake Manyara can be obtained from Greenway and Vesey-Fitzgerald (1969). More information on the scrub forest in the gap between the west Usambara and southern Pare mountains can be obtained from Greenway (1973 pp. 56 - 57).

17.3. Species composition

Species assemblages were obtained from the following references:

- White (1983 pp. 116 - 117): Species that were listed were coded "x".

Characteristic species were determined as:

- Species mentioned to be characteristic were coded "C". The unidentified "candelabra *Euphorbia* species" was assumed to be *Euphorbia candelabra.*

Table 17. Species composition of Somalia-Masai scrub forest (Fs)

Species	Regional status (see section 2.3)	Fs (Tanzania)
Acacia tortilis	indicator (norther slopes of the East Usambara Mts, also in deciduous bushland and deciduous wooded grassland)	x
Adansonia digitata	indicator (escarpment above Lake Manyara, also in deciduous bushland)	x
Afzelia quanzensis	indicator (norther slopes of the East Usambara Mts, also in Zanzibar-Inhambane undifferentiated forest)	x
Brachylaena huillensis	indicator (norther slopes of the East Usambara Mts, also in drier variants of Zanzibar-Inhambane undifferentiated forest)	x
Commiphora baluensis	indicator	C
Commiphora campestris	indicator (also in deciduous bushland)	C
Commiphora engleri	indicator	C
Commiphora merkeri	indicator	C
Euphorbia candelabrum	assumed to be the dominant candelabra *Euphorbia*	C
Manilkara sulcata	indicator (norther slopes of the East Usambara Mts, also in drier types of Zanzibar-Inhambane undifferentiated forest)	x
Newtonia hildebrandtii	characteristic (norther slopes of the East Usambara Mts, also in Somalia-Masai riparian forest)	x
Pappea capensis	indicator (norther slopes of the East Usambara Mts)	x

18. Zanzibar-Inhambane scrub forest on coral rag (fc, edaphic forest type)

18.1. Description

White describes evergreen thickets that are the climax vegetation types on shallow soils that overlie coral limestone and that have rainfall between 950 and 1200 mm per year. We decided to equate this vegetation type with the "maritime eastern African coastal scrub forest" described by Clarke and Robertson (2000) who described these forests as scrub forests and thickets (with canopies of 6 - 10 m and occasional emergents of 8 - 15 m) that develop on shallow and easily dessicated soils that overly coral rag (*i.e.* surface limestone derived from recent corals). Both White (1983) and Clarke and Robertson (2000) refer to the same reference of Birch (1963) when describing this vegetation type.

Regional indicator species (characteristic species listed by White (1983) [1983] that were only provided for Zanzibar-Inhambane scrub forest on coral rag and no other Zanzibar-Inhambane forest types, include ***Carpodiptera africana, Diospyros squarrosa, Grewia plagiophylla, Grewia truncata, Harrisonia abyssinica, Lannea schweinfurthii, Ludia mauritiana, Millettia usaramensis, Monanthotaxis fornicata, Pycnocoma littoralis, Sterculia rhynchocarpa, Tabernaemontana elegans, Uvaria leptocladon*** and ***Zanthoxylum chalybeum***.

18.2. VECEA region

Within the VECEA region, Zanzibar-Inhambane scrub forest on coral rag only occurs in the coastal areas of Kenya and Tanzania. We did not map it separately, but as part of the Zanzibar-Inhambane regional mosaic (see Volume 6).

Clarke and Robertson (2000) mention that 106 tree species are recorded in the literature as common or frequent in this vegetation type (the synonym that they used for this vegetation type was "maritime eastern African coastal scrub forest"), although often only in one source of information. The only species that were mentioned in a minimum of three sources of literature included *Adansonia digitata*, *Diospyros consolatae*, *Grewia glandulosa*, ***Lannea schweinfurthii***, *Manilkara sulcata* and *Sideroxylon inerme*.

18.3. Species composition

Species assemblages were obtained from the following references:

- Burgess and Clarke (2000 Appendix 2 Table 4). Species listed for "maritime eastern African coastal scrub forest" were coded "x". Species only listed from sources from Mozambique, Pemba and the Selous Game Reserve were excluded.

Characteristic species were not determined.

Within the information on assemblages, coding "f " indicates that there is information that the species potentially occurs in the vegetation type since it occurs in the focal country and in the same forest type in the regional documentation (White 1983).

Table 18. Species composition of Zanzibar-Inhambane scrub forest on coral rag (fc)

Species	regional status (see section 2.3)	f (coast)
Adansonia digitata		x
Afzelia quanzensis	not characteristic (indicator for Zanzibar-Inhambane undifferentiated forest)	x
Antiaris toxicaria	not characteristic (characteristic for Zanzibar-Inhambane lowland rain forest, Zanzibar-Inhambane transitional rain forest and Zanzibar-Inhambane undifferentiated forest)	x
Bombax rhodognaphalon	not characteristic (indicator for moister variants of Zanzibar-Inhambane undifferentiated forest)	x
Bridelia micrantha		x
Carpodiptera africana	indicator (evergreen thicket on coral limestone)	x
Combretum schumannii	not characteristic (indicator for Zanzibar-Inhambane undifferentiated forest)	x
Dialium orientale		x
Dichrostachys cinerea		x
Diospyros mespiliformis	not characteristic (ndicator for Zanzibar-Inhambane lowland rain forest and Zanzibar-Inhambane undifferentiated forest)	x
Diospyros squarrosa	indicator (evergreen thicket on coral limestone)	f
Dodonaea viscosa		x
Encephalartos hildebrandtii		x
Euclea racemosa	not characteristic (indicator for Zanzibar-Inhambane scrub forest)	x
Euphorbia tirucalli		x
Ficus sur		x
Flacourtia indica		x
Flueggea virosa		x
Grewia plagiophylla	indicator (evergreen thicket on coral limestone)	x
Grewia truncata	indicator (evergreen thicket on coral limestone)	f
Harrisonia abyssinica	indicator (evergreen thicket on coral limestone)	x
Lannea schweinfurthii	indicator (evergreen thicket on coral limestone)	x
Ludia mauritiana	indicator (evergreen thicket on coral limestone)	x
Manilkara sansibarensis	characteristic (evergreen thicket on coral limestone)	x
Manilkara sulcata	not characteristic (indicator for drier variants of Zanzibar-Inhambane undifferentiated forest)	x
Markhamia zanzibarica		x
Millettia usaramensis	indicator (evergreen thicket on coral limestone)	x
Mimusops obtusifolia		x
Monanthotaxis fornicata	indicator (evergreen thicket on coral limestone)	f
Monodora grandidieri		x
Ozoroa insignis		x
Pandanus kirkii	genus occurs in Zanzibar-Inhambane swamp forest	x
Psydrax schimperiana		x
Pterocarpus angolensis		x
Pycnocoma littoralis	indicator (evergreen thicket on coral limestone)	f
Ricinodendron heudelotii	not characteristic (characteristic for Zanzibar-Inhambane lowland rain forest and Zanzibar-Inhambane transitional rain forest [Guineo-Congolian linking species])	x
Salvadora persica		x
Sclerocarya birrea		x

Species	regional status (see section 2.3)	f (coast)
Sideroxylon inerme	not characteristic (indicator for Zanzibar-Inhambane scrub forest)	x
Sorindeia madagascariensis		x
Sterculia africana		x
Sterculia rhynchocarpa	indicator (evergreen thicket on coral limestone)	f
Syzygium cordatum		x
Tabernaemontana elegans	indicator (evergreen thicket on coral limestone)	x
Tamarindus indica	not characteristic (indicator for drier variants of Zanzibar-Inhambane undifferentiated forest)	x
Uvaria leptocladon	indicator (evergreen thicket on coral limestone)	f
Xylopia parviflora	not characteristic (indicator for moister variants of Zanzibar-Inhambane undifferentiated forest)	x
Zanthoxylum chalybeum	indicator (evergreen thicket on coral limestone)	x

19. Lake Victoria *Euphorbia dawei* scrub forest (fe, edaphic forest type)

19.1. Description

Vegetation intermediate between rain forest and evergreen bushland (Be) probably occurred more extensively in the Lake Victoria basin than in other parts of Africa, but only few relicts remain (White 1983 p. 182).

White (1983 p. 182) describes the following types of Lake Victoria scrub forests: (i) *Cynometra-Euphorbia* scrub forest in Burundi and Uganda; (ii) ***Euphorbia dawei*** scrub forest in the basin of Lake Edward; (iii) ***Euphorbia dawei*** scrub forest in the Ruzizi valley and (iv) tall scrub forest in the Ruzizi valley (White 1983 p. 182):

- *Cynometra-Euphorbia* scrub forest in Burundi and Uganda is characterized by 10 m tall ***Cynometra alexandri*** (also a characteristic species of Lake Victoria drier peripheral semi-evergreen Guineo-Congolian rain forest [Fi]) and is usually associated with ***Euphorbia dawei***.
- ***Euphorbia dawei*** scrub forest in the basin of Lake Edward (0º 21' S; 29º 37' E) forms forests have canopies of 12 to 15 m; they occur at 900 to 1000 m altitude in bands up to 3 km wide along the banks of rivers and on the lower slopes of escarpments.
- ***Euphorbia dawei*** forms scrub forests only in a single locality in the Ruzizi valley where ***Euphorbia dawei*** occurs as a 17 to 18 m high emergent above a 10 to 12 m canopy of ***Cynometra alexandri*** and *Tamarindus indica*. This formation is described as the Burundian 'La forêt sclérophylle à *Euphorbia dawei*' forest type by Lewalle (1972 p. 57, see below).
- Tall scrub forest of 15 m high is expected to be the climax community in the Ruzizi valley and consists of an upper canopy of ***Albizia grandibracteata***, *Euphorbia candelabrum*, *Grewia mollis*, ***Strychnos potatorum*** and *Tamarindus indica*. This formation is described as the 'La forêt sclérophylle à *Strychnos potatorum*' forest type by Lewalle (1972 p. 57) and as 'La forêt tropophile à ***Albizia grandibracteata*** et ***Strychnos potatorum*** ' forest type by Germain (1955 p. 41).

We classified *Euphorbia dawei* scrub forest as an edaphic vegetation type based on the suggestion that this vegetation type is especially restricted to rocky slopes, whereas evergreen bushland (Be) would be the climax vegetation type elsewhere (White 1983 p. 183).

Besides the **potentially** dominant ***Cynometra alexandri*** and ***Euphorbia dawei***, regional indicator species (characteristic species listed by White (1983) that were only provided for Lake Victoria ***Euphorbia dawei*** scrub forest and no other Lake Victoria forest types, include ***Cissus quadrangularis*** (liana species), [***Olea europaea* ssp. *cuspidata*,** (synonym: ***Olea africana***; also a indicator for Afromontane dry transitional forest [Fh]) and ***Psydrax parviflora***.

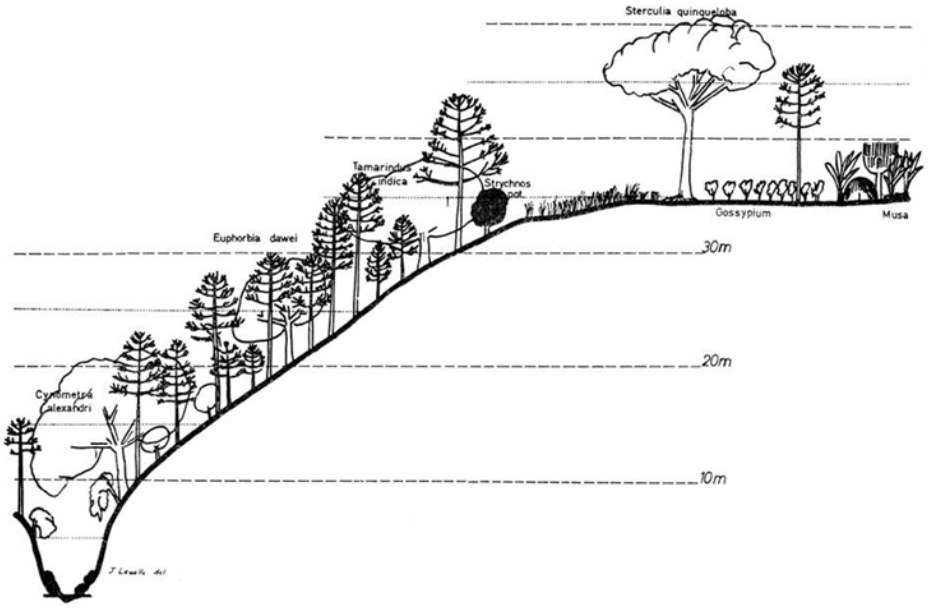


Fig. 15. — Profil-diagramme de la forêt sclérophylle à *Euphorbia dawei*.

Figure 19.1 Profile diagram of Lake Victoria *Euphorbia dawei* scrub forest in Burundi. Lewalle 1972. Image obtained from URL: *http://www.jstor.org/stale/3667406*.

19.2. VECEA region

Within the VECEA region, Lake Victoria *Euphorbia dawei* scrub forest is only described in the main national reference of Rwanda (see also Volume 6). We also expect that this vegetation type occurs in Uganda within areas that are mapped as evergreen bushland (Be, see previous section and below. Possibly this forest type also occurs in areas in Tanzania near the boundary with Rwanda that were mapped as evergreen bushland (Be).

In Rwanda, this vegetation type was originally described as "forêt de thalweg", which we translated as "ravine forest". "Thalweg" is an English loan word from German ("thal": valley, and "weg": way) that refers to ravines, therefore "thalweg forests" are named after the landscape position where they occur. The definition that Bloesch *et al.* (2009 p. 649) give for " forêt de thalweg " is that of a closed and semi-deciduous forest formation that is usually not very tall and that occurs in landscapes with wooded grasslands along ravines with steep slopes.

In Uganda, we expect from the information given in the previous section (19.1) (based on White 1983 p. 182) that especially the ***Euphorbia dawei*** variant or the ***Cynometra alexandri*** and ***Euphorbia dawei*** variants could occur in Uganda.

We expect that ***Cynometra alexandri*** was previously present in Lake Victoria scrub forests in Rwanda, although this species was not included in the woody plant species listed for Rwanda by Bloesch *et al.* (2009), our main reference for information on species composition of Rwandan vegetation types. Lebrun (1956) describes a sclerophyll forest formation with *Croton dichogamus* [19] and ***Euphorbia dawei*** that occurs on hill crests (as remnants) in the Akagera national park (surveyed in 1937 and 1938 by this author), but does not list ***Cynometra alexandri***. Lewalle (1972) describes the sclerophyll ***Euphorbia dawei*** forest formation of Burundi. Despite a thorough search throughout Burundi, Lewalle only found a small remnant of this forest type in a ravine of the Katunguru river (a tributary to the Rusizi river). However, he also mentions that this vegetation type was observed elsewhere in the Akagera national park (citing Lebrun 1955), in the Rwindi-Rutshuru plain south of Lake Edward (citing Lebrun 1947) and on islands on Lake Kivu. The profile diagram (Figure 19.1; Lewalle 1972 p. 68) shows that ***Cynometra alexandri*** occurs near the bottom of the ravine. We hypothesize, therefore, that the remnants that Lebrun observed on hill crests in Akagera part no longer had ***Cynometra alexandri***.

The tall scrub forest of 15 m high mentioned above (with synonym of 'la forêt sclérophylle à *Strychnos potatorum*' forest type by Lewalle [1972 p. 57]) was most likely the original vegetation type of floristic region 1A in Rwanda (the Ruzizi-Bugarama valley with influence from Congolian vegetation; most of this valley lays in Burundi) since this is suggested by White (1983) for the entire Ruzizi valley (1983 p. 182). *Strychnos potatorum* was listed by Bloesch *et al.* (2009) to be endemic to floristic region 1A.

19: *Croton dichogamus* is also a characteristic species of East African evergreen bushland [White 1983 p. 115

19.3. Species composition

Species assemblages were obtained from the following references:

- Rwanda: Bloesch *et al.* (2009). All species that were mentioned to occur in floristic regions 1B (littoral zone of Lake Kivu with influences from the vegetation of Congo) or 1C (south-eastern zone with influences from the vegetation of eastern Africa) and where a reference was made to 'forêt de thalweg' in the description of their ecology were coded "x" (unless they were characteristic species). To these species we added species listed by White (1983 p. 181) to occur at altitudes of 1600 - 1900 m (transitional rain forest) in western Rwanda.

Characteristic species were determined as:

- Rwanda: Characteristic species were coded "C". These only included ***Euphorbia dawei*** (the species that gives the name to the equivalent forest formation in Burundi, see above) and ***Cynometra alexandri*** (a species expected also to be characteristic; see discussion above).

Within the information on assemblages, coding "f " indicates that there is information that the species potentially occurs in the vegetation type since it occurs in the focal country and in the same forest type in the regional documentation (White 1983).

Table 19. Species composition of Lake Victoria *Euphorbia dawei* scrub forest (fe)

Species	Regional status (see section 2.3)	(Rwanda)
Acacia brevispica		x
Albizia adianthifolia		x
Albizia petersiana		x
Blighia unijugata		x
Bridelia micrantha		x
Canthium lactescens		x
Cissus quadrangularis	indicator (liana)	x
Clausena anisata		x
Craibia brownii		x
Croton dichogamus		C
Croton macrostachyus		x
Cynometra alexandri	dominant	f
Dovyalis macrocalyx		x
Elaeodendron buchananii		x
Euclea divinorum		x
Euphorbia dawei	dominant	C
Ficus sur		x
Garcinia buchananii		x
Lannea schimperi		x
Maytenus undata		x
Olea europaea	indicator (*Olea europaea* ssp. *cuspidata*, synonym: *Olea africana*)	x
Pavetta oliveriana		x
Psydrax parviflora	indicator	x
Psydrax schimperiana		x
Pterygota mildbraedii		x
Strychnos lucens		x
Tarenna graveolens		x
Vangueria apiculata		x

20. Riverine forests (fr, edaphic forest type)

20.1. Description

Although White (1983) treated riverine forests separately within the descriptions of regional centres of endemism, we decided not to map floristic variants of riverine forests. Actually, it was in most situations not practical to map riverine forests.

Zambezian riparian forest can be further classified in: (i) evergreen or semi-evergreen riparian forest; and (ii) deciduous riparian forest. Evergreen or semi-evergreen riparian forest of 20 m (or taller) occurs on fringes or perennial streams in areas where annual rainfall exceeds 1000 mm. Riparian forest where most of the tree species are deciduous for at least two months are confined to the banks of major watercourses in areas where annual rainfall is less than 800 mm. The latter riparian forest type has probably always been kept open by movements and browsing of large mammals, which explains the presence of heliophilous ('sun-loving') species of *Acacia* and other genera (White 1983 p. 91). Evergreen riparian forests are among the associated vegetation types that characterize wetter miombo woodland (Wn), whereas deciduous riparian forests are among the associated vegetation types that characterize drier miombo woodland (White 1983 p. 93).

Sudanian riparian forest was further classified in: (i) semi-evergreen riparian forest; and (ii) semi-deciduous riparian forest. The former occurs in the southern (wetter) half of the Sudanian region, whereas the latter occurs in the northern (drier) half of the Sudanian region where it is often degraded to riparian woodland (White 1983 p. 105).

Somalia-Masai riparian forest occurs only on the banks of larger rivers such as the Galana, Kiboko, Tana, Uaso Nyiro and Voi rivers of Kenya (riparian forests also occur in Tanzania; White 1983 p. 117).

Since we think that the riverine occurrence of riverine forests is more characteristic than the species composition of these forests, we refer to section 20.3 for information about characteristic species.

Figure 20.1 Riverine forest along the Rusumo River (Rwanda). Photograph by V. Minani (August 2008).

Figure 20.2 Riverine forest dominated by *Cynometra* and *Baphia* species along the Mpanga River Gorge (Kamwenge, Uganda. Photograph by J. Kalema (January 2009).

20.2. VECEA region

Within the VECEA region, riverine forest occurs in all countries. We refer to Volume 6 for information how we mapped these forests.

Riverine forests were named differently in the various VECEA countries. In Ethiopia, they were described as riverine vegetation (RV). In Kenya, they were described as riverine and ground-water forest. In Malawi, the name that was used was riparian forest and thicket. The Zambia national text referred to riparian forest. The reference from the coastal areas of Kenya and Tanzania originally used the name of "eastern African coastal riverine / groundwater forest".

The limits of riverine forest in Malawi are difficult to define due to the physiographic diversity which causes considerable local variation in climatic gradients. At low to medium altitudes, this forest has been largely destroyed in Malawi. Above 1200 m, Afromontane species become important and their contribution increases with altitude until 1500 to 2200 m where the floristic composition of the riparian forest is similar to that of the surrounding mid-altitude (Fg) or Afromontane (Fa) rain forests. Above these elevations, riverine forest is reduced to a very narrow and species-poor fringe. Most species included in the assemblages for riverine forest can also be found in other forest types, whereas relatively few species are confined to the riverine environment (Cornell Dudley, pers. comm.).

Fanshawe (1971 p. 35) mentions that the composition of riparian forests in Zambia varies from north to south, with a northern evergreen element and a southern semi-deciduous to deciduous element. The northern evergreen element is restricted to the high rainfall belt and the perennial streams of the Muchinga and southern escarpments. The southern element fringes all perennial and seasonal streams in the medium and low rainfall belts (except for the perennial escarpment streams) and mingles with the northern element on the middle reaches of larger rivers in the high rainfall belt.

In Tanzania, the presence of riverine forest can be inferred from the documentation of the original vegetation map that we consulted (but see also the reference of White (1983 p. 117) to the occurrence of Somalia-Masai riparian forest in Tanzania). Gillman (1949 pp. 24-25) indicates that riverine forest (he uses the synonym of "fringing forest") occur as "intrazonals" (defined as vegetation types that occur as a result of rapid alterations of geological, edaphic or anthropogenic conditions under a uniform climate, but that could not be represented on the Tanzanian map) in mapped woodland, wooded grassland, bushland and grassland physiognomic vegetation types.

The presence of riverine forest in Uganda could be inferred from the documentation of the original map as well. Langdale-Brown *et al.* (p. 55) indicate that *Vitex - Phyllanthus - Sapium - Terminalia* woodland is intersected by riparian forests containing *Khaya senegalensis* and *Mitragyna stipulosa*. Langdale-Brown *et al.* (p. 58) also refer to "true riparian forests" containing *Khaya grandifoliola*, *Syzygium guineense*, *Trichilia roka* and *Ficus* spp. that occur within *Vitellaria paradoxa* woodlands (Wb).

20.3. Species composition

Species assemblages were obtained from the following references:

- Ethiopia: Friis *et al.* 2010. Species mentioned in Appendix 3 for "Riverine vegetation" [RV] were coded "x" (unless they were characteristic species).
- Kenya: Species that were expected to occur in riverine forest based on information from Beentje (1994), the Flora of Tropical East Africa and field experience from our Kenyan co-author (F. Gachathi) were coded "x" in column "frK". In a separate column (wrK), species composition is provided for riverine woodland (see Volume 3).
- Malawi: Dowsett & Dowsett (2002), Palgrave (2002) and White *et al.* (2001) supplemented by unpublished data by our Malawian co-author (C. Dudley; he applied the criteria of White *et al.* [2001] of only including species that are strictly adapted to growing on the banks of water courses or that are otherwise influenced by water courses). These species were coded "x" (unless they were characteristic species).
- Rwanda: Bloesch *et al.* (2009). All species that were mentioned to occur in floristic region 1 and where a reference was made to 'galerie forestière' in the description of their ecology were coded "x" (unless they were characteristic species). Species that were only listed for floristic region 1A (Ruzizi-Bugarama plain with influence from the vegetation of Congo) were coded "xr" [20] , those that were only listed for floristic 1B (littoral zone of Lake Kivu with influence from the vegetation of Congo) were coded "xk" [20], those that were only listed for floristic region 1C (south-eastern zone with influence from the vegetation of East Africa) were coded "xe" and those that were only listed for floristic region 1D (depression of the Akagera river at Migongo with influence from the vegetation from the Zambezian region) were coded "xz". [21]
- Tanzania: White (1983 p. 117). The species that were listed to occur in Somalia-Masai riparian forests of Tanzania were coded "C" (these were all assumed to be characteristic species). ***Fernandoa magnifica*** (a characteristic species of the moister variants of Zanzibar-Inhambane undifferentiated forest [Fp]) that was mentioned to be endemic to the East African coast was coded "x".
- Zambia: Fanshawe (1971). Species listed for the species composition table for "riparian forest" provided on pages 36 to 38 were coded "x" (unless they were characteristic species).
- Uganda: see information for riverine thicket (br, Volume 4)
- Coastal areas of Kenya and Tanzania: Burgess and Clarke (2000 Appendix 2 Table 6). Species listed for "eastern African coastal riverine - groundwater forest" were coded "x" (unless they were characteristic species). Species only listed for the Uluguru Mountains or the Selous Game Reserve were excluded.

Characteristic species were determined as:

- Ethiopia: Those species that were mentioned in the description of the vegetation type in the main text were coded as "C".
- Kenya: Beentje (1994). Species for which a reference was made to

20: none of these species were later categorized as "useful tree species". Riverine species that were only recorded for the Lake Kivu floristic region included *Ficus ottoniifolia*, *Ficus pseudomangifera* and *Scolopia rhamniphylla*. Riverine species that were only recorded for the Ruzizi-Bugarama included *Grewia mollis* and *Piper umbellatum*.

21: Prioul (1981) mentions that these riverine forests contain species that occur nowhere else in Rwanda and therefore have an important biodiversity value. The best examples occur in the Rusumo region.

riverine (forest), gallery forest or stream banks in the ecology of the species were coded “C” in column "frK". For characteristic species of riverine woodland (wrK), see Volume 3.

- Malawi: Dominant trees were coded as “D”.
- Rwanda: Characteristic species were coded “C”. These species were selected by our Rwandan colleagues.
- Tanzania: All species were assumed to be characteristic, except ***Fernandoa magnifica*** (endemic to the East African coast, White [1983 p. 117])
- Uganda: see information for riverine thicket (br, Volume 4)
- Zambia: Species listed for the canopy layer were coded “C”. Species listed as characteristic species for the southern semi-deciduous to deciduous elements were coded “Cs”.
- Coastal areas of Kenya and Tanzania: Species listed to be dominant were coded “C”.

Within the information on assemblages, coding "f " indicates that there is information that the species potentially occurs in the vegetation type since it occurs in the focal country and in the same forest type in other countries (see section 2.3).

Table20 Species composition of riverine forests (fr)

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Abutilon angulatum		x			f	f		f	f	
Acacia abyssinica		f	f	f	x	f	f	f		
Acacia asak		x								
Acacia brevispica		f	x			f	f	f		f
Acacia drepanolobium		f	x				f	f		
Acacia elatior	Somalia-Masai riparian forest		C	C458				f		C
Acacia galpinii	Zambezian deciduous riparian forest				C				f	
Acacia gerrardii		f	C		f	f	f	x	f	f
Acacia hockii		f	x		f	f	f	f	f	f
Acacia kirkii	Lake Victoria swamp forest		C			x	f	f	f	
Acacia mellifera		f	x				f	f	f	f
Acacia nigrescens					f		f		Cs	
Acacia oerfota		f	x				f	C		f
Acacia polyacantha	Zambezian deciduous riparian forest	C	C		x	f	f	f	f	f
Acacia robusta	Somalia-Masai and Zambezian deciduous riparian forest	x	C	f			f		f	C
Acacia seyal		f	x	C2a	f		f	f	f	
Acacia sieberiana	Sudanian riparian forest	f	C		x	f	f	f	f	f
Acacia tortilis	Zambezian deciduous riparian forest, along larger seasonal streams in Marsabit district	f	C	C458			f	C	f	f
Acacia xanthophloea	Zambezian deciduous riparian forest		C		x		f			f
Acokanthera oppositifolia			C		f				f	f
Acokanthera schimperi		f	x			f	f	f		f
Afzelia quanzensis			f		x		f	f	f	C
Agauria salicifolia		f	f		x	f	f	f	f	
Albizia glaberrima	Somalia-Masai riparian forest		C	f	x		C	f	x	f
Albizia grandibracteata		x	C			f	f	f		
Albizia malacophylla		x						f		
Albizia petersiana			C		x	f	f	f		f
Albizia saman	(exotic)		C							f
Albizia schimperiana		f	C		f		f	f	f	
Albizia versicolor	Zambezian deciduous riparian forest		f		x	f	f	f	f	x

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Albizia zimmermannii	Somalia-Masai riparian forest		C	f	x		f		f	
Albizia zygia			C				f	f		
Allophylus abyssinicus		x	C		x	f	f	f	f	
Allophylus africanus		x	x		x	x	f	f	x	
Allophylus rubifolius		f	C		f	f	f	f	f	f
Annona senegalensis		f	C		x	f	f	f	f	f
Anthocleista grandiflora			C		x		f	f		C
Antiaris toxicaria		f	f			f	f	f	f	C
Antidesma venosum		x	C		f		f	f	x	C
Aphania senegalensis	riparian forest in the greater Serengeti region	C	C				f	f		C
Apodytes dimidiata	afromontane species in forests on alluvial deposits at the mouth of the Kagera river	x	f		x	xe	f	f	C	f
Baikiaea insignis	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river (dominant)					xe	f	f		
Balanites aegyptiaca		f	C			f	f	f	f	
Balanites wilsoniana			f				f	f		C
Baphia abyssinica		x								
Bauhinia petersiana					f		f		x	
Beilschmiedia ugandensis							f	f	x	
Berchemia discolor		x	C		x		f	f	f	f
Bersama abyssinica		x	C		f	x	f	f	f	f
Blighia unijugata		x	C		f	x	f	f	f	f
Bombax rhodognaphalon			f		x		f			C
Borassus aethiopum	(palm species)	f	C		D		f	f	f	f
Boscia coriacea		x	f				f	f		
Breonadia salicina	Sudanian and Zambezian evergreen or semi-evergreen riparian forest	C	x		C		f	f	C	C
Bridelia brideliifolia					x	x	x	x		
Bridelia micrantha		x	C		x	C	f	f	C	C
Bridelia scleroneura		x	f				f	f		
Burttdavya nyasica					C		f			C
Cadaba farinosa		f	C	C58		f	f	f		f
Caesalpinia volkensii			C				f	f		f

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Calodendrum capense			C		x		f	f		
Calotropis procera		x	C				f	f		f
Canthium lactescens		f	f			x	f	f	f	
Capparis tomentosa		x	C		x	f	f	x	x	f
Carissa spinarum		x	x		f	f	f	x	f	f
Cassipourea ruwensoriensis		f	f			x	f	f		
Celtis africana		C	C		f	f	f	f	f	x
Celtis toka		x						f		
Clausena anisata		f	C		x	x	f	f	x	f
Combretum imberbe	Zambezian deciduous riparian forest				x		f		f	f
Commiphora eminii			f		x		f		f	
Cordia africana		f	C		x	x	f	f	f	
Cordia monoica		x	C				f	f		f
Cordia sinensis		x	C	C258			f	f	f	f
Cordyla africana	Zambezian deciduous riparian forest		f		C		f		f	f
Cornus volkensii			f		x	f	f	f		
Craibia brownii			C			f	f	f		f
Crateva adansonii		x	C				f	f		
Crotalaria agatiflora		f	C		f	f	f	f		
Croton macrostachyus		f	C		f	x	f	f	f	
Croton megalocarpus			C		f		f	f	f	
Cussonia holstii		f	f			x	f	f		
Cussonia spicata			C		f		f	f	f	
Delonix elata		f	f	C58			f	C	f	
Diospyros abyssinica		x	C		f	f	f	f	f	x
Diospyros mespiliformis	Somalia-Masai, Sudanian and Zambezian deciduous riparian forest	C	C	f	C		C	f	C	C
Diospyros scabra		x	x	C58				f		
Dobera glabra	Somalia-Masai riparian forest	f	x	f				f		f
Dodonaea viscosa		f	f		f	f	f	f	x	f
Dombeya buettneri		f				x				

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Dombeya kirkii		f	C		x	x	f	f	f	
Dovyalis abyssinica		x	C		f		f	f		
Dovyalis macrocalyx			C		x	x	f	f	f	f
Dracaena steudneri		f	f		x	xe	f	f	f	
Ehretia cymosa		x	f		f	xe		f		
Ekebergia capensis	riparian forest in the greater Serengeti region	f	C		x	x	f	f	x	f
Elaeodendron buchananii		f	C		x	f	f	f	f	
Embelia schimperi		x	f		x	x	f	f	x	
Ensete ventricosum		x	f		x	xe	f	f	f	
Entada abyssinica		f	C		f	f	f	f	f	
Erythrina excelsa			C				f	f	f	
Erythrophleum suaveolens	Zambezian evergreen or semi-evergreen riparian forest		f		C		f	f	C	C
Erythroxylum fischeri		x	C				f	f		
Euclea divinorum		f	C		x	f	f	f	x	f
Euclea natalensis			C		x		f		f	f
Euclea racemosa		f	f		x	x	f	C	f	f
Eugenia capensis		x	f		f	x	f	f	f	
Fagaropsis angolensis		f	f		f	xz	f	f	f	f
Faidherbia albida	Zambezian deciduous riparian forest	f	C	C58	x		f	x	Cs	f
Faurea saligna			f		x	f	f	f	C	f
Fernandoa magnifica	Somalia-Masai riparian forest (near coast and endemic to coastal forests)		f				x			f
Ficalhoa laurifolia					x	f	f	f	f	
Ficus exasperata		x	f		x	f	f	f	f	f
Ficus ingens	Somalia-Masai riparian forest	f	C	f	f	x	f	f	f	f
Ficus natalensis			C		f	f	f	f	f	f
Ficus ovata		x	C		f	f	f	f	f	
Ficus sur	Zambezian deciduous riparian forest	x	C		x	f	f	f	Cs	x
Ficus sycomorus	Somalia-Masai, Sudanian and Zambezian deciduous riparian forest	C	C	f	x	C	C	f	f	C
Ficus thonningii		x	C		f	x	f	f	f	
Ficus vallis-choudae		x	C		x	x	f	f	f	x
Ficus vasta		x	C				f	x	f	

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Filicium decipiens		x	C		x		f			
Flacourtia indica		x	f		x	f	f	f	x	f
Flueggea virosa		f	C		f	f	f	f	f	f
Garcinia buchananii		x	f		f	f	f	f	f	f
Garcinia livingstonei	Somalia-Masai riparian forest (including greater Serengeti region)	x	C	f	x		f	f	Cs	C
Gardenia ternifolia		f	C			f	f	f		f
Gardenia volkensii		x	C				f	f	x	f
Grewia bicolor		f	x		f		f	f	f	
Grewia similis		f	f			x	f	f		
Grewia villosa		f	f	C2			f	f		f
Harrisonia abyssinica		f	C		x	f	f	f	f	C
Hibiscus diversifolius		x	f		f	f	f	f	f	
Hymenaea verrucosa			f				f			C
Hypericum quartinianum		f	C		f		f	f	f	
Hyphaene compressa	(palm species)	f	C	C4			f			C
Hyphaene coriacea	(palm species)		f	C24			f			f
Hyphaene petersiana	(palm species)				x		f		C	
Hyphaene thebaica	(palm species)	x								
Ilex mitis	afromontane species in forests on alluvial deposits at the mouth of the Kagera river; Zambezian swamp forest	x	C		x	f	f	f	C	
Jatropha curcas			C		f		f	f	f	f
Jatropha multifida			x		f		f		f	
Justicia schimperiana		x	x				f			f
Khaya anthotheca	Somalia-Masai and Zambezian evergreen or semi-evergreen riparian forest		x	f	C		C	f	C	C
Kigelia africana	Somalia-Masai and Zambezian deciduous riparian forest	x	C	f	x	C	C	x	f	C
Kigelia moosa			C				f	f		
Kirkia acuminata					x		f		f	
Landolphia buchananii		x	C		f		f	f	x	
Lannea barteri		x						f		

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Lannea schweinfurthii		f	x		x	f	f	f	f	f
Lawsonia inermis		f	C	x			f	f		C
Lecaniodiscus fraxinifolius	Somalia-Masai (including greater Serengeti region) and Zambezian deciduous riparian forest	x	C	f	x		f	f	f	C
Lepidotrichilia volkensii		x	f		f	f	f	f	f	
Leptadenia hastata		f	C							
Lonchocarpus capassa					x		f		f	f
Maerua decumbens		f	C				f	f		f
Maesa lanceolata		x	f		x	xz	f	f	x	
Maesopsis eminii	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river		C		f	f	f	f	f	
Manilkara mochisia	Zambezian deciduous riparian forest		f		x		f		Cs	f
Markhamia lutea			C			x	f	f		
Markhamia zanzibarica			f		x		f	f	f	f
Maytenus arbutifolia		f	C			f	f	f		
Maytenus senegalensis		f	C		f	f	f	f	x	f
Maytenus undata		f	f		f	x	f	f	f	f
Meyna tetraphylla		x	f				f	f		f
Milicia excelsa		f	f		C	f	f	f		C
Mimusops bagshawei			C			xz	f	f		f
Mimusops kummel		C	C		f		f	f		
Mimusops obtusifolia			f		x		f			C
Mimusops zeyheri	Zambezian deciduous riparian forest				f		f		Cs	
Monodora myristica			C				f	f		
Monopetalanthus richard-siae	Zambezian evergreen or semi-evergreen riparian forest						f		x	
Moringa stenopetala		f	f					C		
Morus mesozygia		f	f		x		f	f	f	
Mussaenda arcuata		x	f				f	f		
Myrianthus holstii			C		f	f	f	f	f	f
Myrsine africana		f	f		f	f	f	f	x	
Newtonia buchananii	Zambezian evergreen or semi-evergreen riparian forest; near streams in Afromontane dry transitional forest		C		C	x	f	f	f	C

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Newtonia hildebrandtii	Somalia-Masai and Zambezian deciduous riparian forest		C	f	x		f		f	
Nuxia congesta		f	f		f	xz	f	f	f	
Nuxia floribunda			f		f	xz	f	f	f	
Olea europaea	(*Olea europaea* ssp. *cuspidata*, synonym: Olea africana)	f	f		x	f	f	f	f	
Olyra latifolia		x	f				f	f		
Oncoba spinosa		x	C		x		f	f	x	
Oreobambos buchwaldii	(bamboo species indigenous to Africa)		C		x		f	f	f	
Oxystigma msoo			C				f			x
Parinari excelsa					x	f	f	f	C	C
Parkia filicoidea	Somalia-Masai and Zambezian evergreen or semi-evergreen riparian forest (Lake Victoria swamp forest)		x	f	C		C	f	f	C
Parkinsonia aculeata			C							
Pavetta oliveriana		x	C			x	f	f		
Phoenix dactylifera	(palm species)		x				f			f
Phoenix reclinata	Lake Victoria swamp forest; Zanzibar-Inhambane swamp forest; palm species	C	C		x	x	f	f	x	C
Phytolacca dodecandra		f	C		f	x	f	f	f	
Piliostigma thonningii		f	f		x	f	f	f	f	C
Pittosporum viridiflorum		f	C		x	xe	f	f	f	
Polyscias fulva			C		f	f	f	f	f	
Populus ilicifolia	Somalia-Masai riparian forest		C	f			f			C
Premna schimperi		x					f	f		
Prunus africana		f	C		x	f	f	f	f	
Pseudospondias microcarpa	Lake Victoria swamp forest; Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river		C			x	f	f	f	
Psychotria mahonii			C		x	f	f	f	f	
Psydrax parviflora		x	f		f	f	f	f	f	
Pterocarpus tinctorius					x		f		f	C
Pterolobium stellatum		f	f		f	f	f	f	x	

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Pterygota mildbraedii						x	f	f	f	
Raphia farinifera	Lake Victoria swamp forest (palm species)		C		x		f	f	C	f
Rauvolfia caffra			C		f		f	f	x	f
Rhamnus prinoides		x	f		f	f	f	f	f	
Rhoicissus revoilii		x	C		f	f	f	f	f	f
Rhoicissus tridentata		f	f		f	x	f	f	f	f
Rhus longipes		x	C		f	f	f	f	x	f
Rhus vulgaris		f	f		f	x	f	f	f	
Ricinodendron heudelotii			f				f	f		x
Ritchiea albersii		f	C			x	f	f	f	
Rothmannia urcelliformis		x	C		f		f	f	f	
Rubus apetalus		f	f		f	xe	f	f	f	
Saba comorensis		x	C		x					
Salvadora persica		x	C	C458	f		f	f	f	f
Sclerocarya birrea		f	C		f		f	f	f	f
Scutia myrtina		x	C		f	x	f	f	x	
Senna didymobotrya		f	C		f	f	f	f	f	
Senna septemtrionalis			C		f	f	f	f	f	
Sesbania macrantha			C		f	f	f	f	f	
Sesbania sesban		x	C		x	f	f	f	f	x
Shirakiopsis elliptica		x	C		C	x	f	f	x	
Sideroxylon inerme			C				f			f
Smilax anceps		f	C			f	f	f	x	
Solanecio mannii		x	C		f	f	f	f	x	
Solanum aculeastrum			C		f	f	f	f		
Sorindeia madagascariensis			C		C		f			C
Spathodea campanulata			C			x	f	f		
Spirostachys venenifera			C				f			C
Steganotaenia araliacea		f	C		f	f	f	f	f	
Sterculia appendiculata			C		C		f			C
Strychnos henningsii		f	C		x		f	f	f	x

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Strychnos lucens					f	f	f		x	
Strychnos mitis	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	x	C		f		f	f		f
Strychnos potatorum	Zambezian deciduous riparian forest				x	f			Cs	
Strychnos spinosa		x	f		x	f	f	f	f	f
Suregada procera	greater Serengeti region	f	C		f		f	f	f	
Synsepalum brevipes			C		x		f	f	x	C
Syzygium cordatum	Lake Victoria swamp forest; Zambezian swamp forest		C		x	f	f	f	C	f
Syzygium guineense	Sudanian riparian forest (*Syzygium guineense* ssp. *guineense*)	C	C		C	xe	f	f	Cs	C
Syzygium owariense	Zambezian swamp forest				C		f	f	f	
Tamarindus indica	Somalia-Masai and Sudanian riparian forest	C	C	C58	x		C	f	x	f
Tamarix aphylla		x	x							
Tamarix nilotica		C	C				f			
Tarenna graveolens		f	C			f	f	f		
Terminalia brownii		f	C				f	x		f
Terminalia prunioides		f	C				f		f	f
Terminalia sambesiaca	Somalia-Masai riparian forest		x	f	C		f		f	C
Terminalia sericea					f		f		x	
Tetradenia riparia		x	f			f			x	
Thespesia garckeana			f		f		f		x	
Trema orientalis		x	C		f	C	f	f	x	f
Trichilia dregeana			C		f		f	f	f	f
Trichilia emetica	Somalia-Masai and Zambezian deciduous riparian forest	C	C	f	C		C	f	Cs	C
Uvaria scheffleri			C				f	f		f
Vangueria apiculata		x	C		f	f	f	f	f	
Vangueria infausta			C		f	f	f	f	f	f
Vangueria madagascariensis		f	C		f		f	f		f
Vepris nobilis		x	C		f	x	f	f	f	f
Vernonia amygdalina		x	C		x	x	f	f	f	

Species	regional status (see section 2.3)	rE (Ethiopia)	frK (Kenya subtype)	wrK (Kenya subtype)	rM (Malawi)	frR (Rwanda)	frT (Tanzania)	brU (Uganda)	frZ (Zambia)	frC (Coast)
Vernonia myriantha		x	f		x	f	f	f	f	
Vitex doniana	Sudanian riparian forest	f	f		x	f	f	f	x	f
Warburgia ugandensis	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	f	C		f		f	f		
Woodfordia uniflora		x	C					f		
Xanthocercis zambesiaca	Zambezian deciduous riparian forest				x				f	
Xeroderris stuhlmannii			f		f		f		f	f
Ximenia americana		x	f		f	f	f	f	f	f
Xylopia parviflora		f	f		x		f	f	f	C
Zanha golungensis		x	f		f	xz	f	f	f	f
Zanthoxylum chalybeum		f	x		f	f	f	f	f	f
Zanthoxylum gilletii		x	f			xe	f	f		
Zanthoxylum usambarense		f	x			f	f			f
Ziziphus abyssinica		f	f		x	f	f	x	f	f
Ziziphus mauritiana		x	C		f		f	f	x	f
Ziziphus mucronata		x	C		f	f	f	x	x	f
Ziziphus pubescens		x	C		x		f	f	f	f
Ziziphus spina-christi		f	C				f	f		f

21. Swamp forest (fs, edaphic forest type)

21.1. Description

In analogy with riverine forests (fr), we decided not to map floristic variants of riverine forests although White (1983) treated riverine forests separately within the descriptions of regional centres of endemism. Actually, it was in most situations not practical to map swamp forests.

In the wetter parts of the Zambezian region (with rainfall above 1000 mm), permanent swamp forest occurs around springs at the sources of tributary streams. Swamp forests also occurs along watercourses (*i.e.* also as subtype of riverine forest [fr]) where water movement is locally sluggish. In the latter situation, swamp forests merge into other types of riparian forest in which the water table is at some distance below the surface for at least part of the year (White 1983 p. 91).

Although White (1983) lists a heading within the description of the Sudanian region as "Sudanian swamp forest and riparian forest", he does not give a specific description of Sudanian swamp forest (White 1983 pp. 103 - 104).

Swamp forests dominated by species that are widespread in tropical Africa occur extensively on the shores of Lake Victoria and elsewhere in the Lake Victoria region. On alluvial deposits of the Kagera river (on the western shore of Lake Victoria), a unique swamp forest occurs that is composed almost in equal proportions of lowland (especially Guineo-Congolian) and Afromontane species and that is dominated by *Baikiaea insignis* (a Guineo-Congolian species) and by *Podocarpus usambarensis* var. *dawei* (an Afromontane species; White 1983 p. 181).

Fresh-water swamp forest is of restricted occurrence in the Zanzibar-Inhambane region. *Barringtonia racemosa*, a species associated with mangroves (M), often occurs in swamp forests immediately behind the mangrove zone and extends upstream for considerable distances (White 1983 p. 188).
Since we think that the occurrence of swamp forests in swampy areas is more characteristic than the species composition of these forests, we refer to section 20.3 for information about characteristic species.

21.2. VECEA region

Within the VECEA region, swamp forest occurs in all countries.
For Ethiopia, swamp forest was mapped together with freshwater marshes and swamps, floodplains and lake shore vegetation (Friis *et al.* 2010 p. 146]).

In Kenya, no distinction was made between riverine forest (fr) and swamp forest ('ground water forest').

In Malawi, this forest type is poorly represented and the patches where this forest type occur were also too small to be mapped (C. Dudley, pers.

comm.). White *et al.* (2001) only give a brief mention of a small montane swamp forest in northern Malawi.

In Rwanda, this forest was named "forêt marécageuse".

In Tanzania, Lovett (1990) listed two swamp forest types: Guineo-Congolian swamp forest and Zanzibar-Inhambane swamp forest. However, in the Gillman vegetation map we could also spot some swamp forests south of the Malagarasi depression that occurred in the Zambezian floristic region. Since the Zambezian floristic region extends into Tanzania, it is very likely that Zambezian swamp forests do exist in Tanzania.

In Uganda, forested swamps can be divided into permanent swamps (where the water level never falls far below the surface) and seasonal swamps (where soils dry up and crack deeply during the dry season (Langdale-Brown *et al.* 1964 pp. 74 - 75):

(i) Permanent swamp forests were not mapped in Uganda; they can be further subdivided in types dominated by *Hallea stipulosa*, *Macaranga schweinfurthii*, *Syzygium cordatum* (dominant in montane swamps) and *Xylopia aethiopica*.

(ii) Seasonal swamp forests occur throughout Lake Victoria drier peripheral Guineo-Congolian rain forest (Fi), but only two seasonal swamp forests were sufficiently extensive to be mapped: *Croton* [seasonal] swamp forest (original mapping unit Y1) and *Baikiaea - Podocarpus* seasonal swamp forest (original mapping unit Y2;).

In Zambia, Fanshawe (1971 p. 32) made the distinction between estuarine swamp (flooded all year), seepage swamp (where the water table is at or just above ground level all year) and seasonal swamp (flooded during the rainy season and with the water table near ground level for the rest of the year).

21.3. Species composition

Species composition was obtained from the following references:

- Ethiopia: Friis *et al.* 2010 only mentioned species in the main description; these were listed as characteristic species "C".
- Kenya: Beentje (1994). Species for which a reference was made to swamp (forest) or ground water forest in the ecology of the species were coded "C".
- Malawi: Chapman and White (1970) and White *et al.* (2001). Species mentioned in for "Montane swamp forest" were coded "x" (unless they were characteristic species).
- Rwanda: Bloesch *et al.* (2009). All species that were mentioned to occur in floristic region 1 and where a reference was made to 'forêt marécageuse' in the description of their ecology were coded "x" (unless they were characteristic species). 'Forêt marécageuse' occurs in areas that are periodically flooded.
- Tanzania. CARLDS (1952). Species listed to occur in groundwater forest were coded "C".
- Uganda: Langdale-Brown *et al.* (1964) and Howard & Davenport

[1996]. All species mentioned in the appendix to occur in "*Rauvolfia-Croton* swamp forest" (Y1) were coded "x" in column "fsrU" (unless they were characteristic species). In a separate column (fsbU), all species mentioned in the appendix to occur in "*Baikiae-Podocarpus* seasonal swamp forest" (Y2) were coded "x". Species listed to occur in Sango Bay forest (indicated on page 107 to only contain forest type "Y2") in the Uganda Forest Department Biodiversity Database (Howard & Davenport [1996]) were coded "xb".

- Zambia: Fanshawe (1971). Species listed for the species composition table for "swamp forest" provided on pages 33 to 34 were coded "x" (unless they were characteristic species).
- Coastal areas of Kenya and Tanzania: Burgess and Clarke (2000 Appendix 2 Table 7). Species listed for "eastern African coastal swamp forest" were coded "x". Species only listed for Zanzibar or the Selous Game Reserve were excluded.

Characteristic species were determined as:

- Ethiopia: species mentioned in the main description of the vegetation type were coded "C".
- Kenya: All species were assumed to be characteristic.
- Malawi: Species identified to be present as large trees (20 - 30 m) were coded as "C" Dominant trees were coded as "D". Dominant large trees were coded as "DL".
- Rwanda: Species that were listed to occur in more than one of the floristic regions of 1A, 1B, 1C or 1 D were considered to be characteristic.
- Tanzania: All species were assumed to be characteristic species.
- Uganda: Species listed as large trees in the appendix were coded "C", unless they were identified as dominant species (coded "D").
- Zambia: Species listed for the canopy layer were coded "C". Species listed as characteristic species for estuarine swamp were coded "Ce", those characteristic for seepage swamp were coded "Cp" and those for seasonal swamp were coded "Cs".
- Coastal areas of Kenya and Tanzania: Characteristic species were not determined.

Within the information on assemblages, coding "f " indicates that there is information that the species potentially occurs in the vegetation type since it occurs in the focal country and in the same forest type in other countries (see section 2.3).

Table 21. Species composition of swamp forest (fs)

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Acacia kirkii	Lake Victoria swamp forest		f		f	f	f	C	f	
Acrostichum aureum	Zanzibari-Inhambane swamp forest (fern species)					f				x
Albizia glaberrima	Somalia-Masai riparian forest		f	f		f	xb	f	f	f
Albizia grandibracteata		f	f		f	f	x	f		
Albizia gummifera			f	f	f	f	xb	f		f
Albizia zygia			f			f	xb	f		
Alchornea hirtella			f	f	f	f	x	f	x	
Alstonia boonei							xb	f		
Anthocleista grandiflora			C	x		f	f	f		x
Anthocleista schweinfurthii	Lake Victoria swamp forest	f			f	f	xb	f	C	
Antiaris toxicaria			f		f	f	xb	f	f	f
Antidesma venosum		C	f	f		f	f	f	f	f
Apodytes dimidiata	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	f	f	f	f	f	xb	f	f	f
Aporrhiza nitida	Zambezian swamp forest			f					x	
Baikiaea insignis	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river (dominant)				f	f	D	f		
Balanites wilsoniana			f			f	xb	f		f
Barringtonia racemosa	Zanzibar-Inhambane swamp forest, also mangrove associated species		f			f				x
Beilschmiedia ugandensis			f			f	x	f	C	
Bersama abyssinica			f	f	f	f	xb	f	f	f
Blighia unijugata		f	f	f	C	f	xb	C	f	f
Bridelia brideliifolia				f	f	f	xb	f		
Bridelia micrantha		f	f	f	f	f	xb	f	x	f
Canarium schweinfurthii	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river	f				f	xb	f	f	
Carapa procera					f	f	xb	f		
Cassipourea malosana			f	f		f	xb	f	f	
Cassipourea ruwensoriensis			f		f	f	xb	f		

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Celtis africana		f		f	C	f	f	f	f	f
Celtis gomphophylla		f	f	f	f	C	f	C	f	f
Chrysophyllum albidum			f	f			xb	f		
Clausena anisata		f	f	f	f	f	xb	f	x	f
Combretum imberbe	Zambezian deciduous riparian forest			f		f			f	f
Cordia africana		f	f	f	C	f	xb	f	f	
Cordia millenii			f			f	xb	f		
Cordyla africana	Zambezian deciduous riparian forest		C			C			f	f
Craterispermum laurinum	Zambezian swamp forest		f						x	
Croton macrostachyus		f	f	f	f	f	xb	D	f	
Croton megalocarpus	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river		f	f	f	f	xb	f	f	
Croton sylvaticus			f	f		f	xb	f	f	f
Diospyros abyssinica			f	f	f	f	xb	f	f	f
Diospyros mespiliformis	Somalia-Masai, Sudanian and Zambezian deciduous riparian forest	f	C	f		f	f	f	f	f
Dombeya rotundifolia		f	f	f	C		f	f	f	
Dombeya torrida		f	f	f	x	f	f	f		
Dovyalis abyssinica			f	f		f	xb	f		
Dovyalis macrocalyx			f	f	f	f	xb	f	f	f
Dracaena camerooniana	Zambezian swamp forest								x	
Dracaena fragrans		f	f	f	x	f	f	f		
Dracaena steudneri			f	f	f	f	xb	f	f	
Ehretia cymosa			f	f	f		xb	f		
Ekebergia capensis	riparian forest in the greater Serengeti region	f	f	f	C	f	xb	f	x	f
Elaeis guineensis	Zanzibar-Inhambane swamp forest (palm species)		f	f		f	f	f		x
Entandrophragma angolense			f			f	xb	f		
Entandrophragma excelsum				f	f	f	xb	f	f	
Erythrina abyssinica		f	f	f	x	f	xb	f	f	f
Erythrina excelsa	Lake Victoria swamp forest		f			f	xb	f	f	
Erythrophleum suaveolens	Zambezian evergreen or semi-evergreen riparian forest		f	f		C	f	f	f	f

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Erythroxylum fischeri			C			f	xb	f		
Euclea divinorum		f	f	f	C	f	f	f	f	f
Fagaropsis angolensis			f	f	f	f	xb	f	f	f
Faidherbia albida		f	C	f	f	f	f	f	f	f
Ficalhoa laurifolia				f	f	f	f	f	C	
Ficus mucuso			f			f	xb	f		
Ficus natalensis			C	f	f	f	xb	f	f	f
Ficus sur	Zambezian deciduous riparian forest	f	C	f	f	f	xb	f	Cs	x
Ficus sycomorus	Somalia-Masai, Sudanian and Zambezian deciduous riparian forest	f	x	f	x	f	xb	f	f	x
Ficus thonningii			f	f	f	f	xb	f	f	
Ficus trichopoda	Lake Victoria swamp forest; Zambezian swamp forest			x	C	f	f	f	Ce	
Ficus vallis-choudae		f	f	f	C	f	f	f	f	f
Flueggea virosa		f	f	f	f	f	xb	x	f	f
Funtumia africana			C	f		f	xb	f		f
Funtumia elastica							xb	f		
Garcinia smeathmannii	Zambezian swamp forest			f		f			x	
Gardenia imperialis	Zambezian swamp forest			f		f	f	f	x	
Guarea cedrata							xb	f		
Hallea stipulosa	Lake Victoria swamp forest; Zambezian swamp forest			x		x	f	f	Cep	
Harungana madagascariensis			f	f	f	f	xb	f	f	f
Hibiscus tiliaceus	Zanzibar-Inhambane swamp forest, also mangrove associated species		x			f				x
Hyphaene compressa	(palm species)	f	f			f				x
Ilex mitis	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river; Zambezian swamp forest	f	f	f	f	f	C	f	Cps	
Khaya anthotheca	Somalia-Masai and Zambezian evergreen or semi-evergreen riparian forest		f	f		C	f	f	f	f
Kigelia africana	Somalia-Masai and Zambezian deciduous riparian forest		f	f	f	f	xb	C	f	f

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Klainedoxa gabonensis	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river					f	x	f	f	
Landolphia buchananii			f	f		f	f	f	x	
Lannea schweinfurthii			f	f	C	f	f	f	f	f
Lannea welwitschii			f			f	xb	f		f
Lecaniodiscus fraxinifolius	Somalia-Masai (including greater Serengeti region) and Zambezian deciduous riparian forest		f	f		f	xb	f	f	f
Lepidotrichilia volkensii			f	f	f	f	xb	f	f	
Lonchocarpus capassa				f		f			f	f
Lovoa trichilioides					f	f	xb	f		
Macaranga capensis			f	f	f	f	xb	f	f	f
Macaranga monandra	Lake Victoria swamp forest					f	x	f		
Macaranga schweinfurthii	Lake Victoria swamp forest		C		x	f	xb	f	f	
Macaranga spinosa	Lake Victoria swamp forest					C				
Maesa lanceolata		f	f	f	f	f	xb	f	x	
Maesopsis eminii	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river		f		f	f	x	f	f	
Margaritaria discoidea			f	f		f	xb	f	f	f
Markhamia lutea			f		f	f	xb	f		
Maytenus acuminata			f	f	f	f	xb	f	f	
Maytenus undata			f	f	f	f	xb	f	f	f
Mimusops bagshawei			f		f	f	xb	f		f
Monodora myristica			f			f	xb	f		
Musanga cecropioides	Lake Victoria swamp forest					x	f	f		
Neoboutonia macrocalyx			f	f	f	f	xb	f	f	
Newtonia buchananii	Zambezian evergreen or semi-evergreen riparian forest; near streams in Afromontane dry transitional forest		C	f	f	f	f	f	f	f
Olea capensis		f	f	f	f	f	x	f	f	
Olea europaea	(*Olea europaea* ssp. *cuspidata,* synonym: *Olea africana)*		f	f	f	f	xb	f	f	f
Oncoba spinosa			f	f		f	xb	f	f	
Oreobambos buchwaldii	(bamboo species indigenous to Africa)		f	f		f	xb	f	f	
Parinari excelsa				f	f	f	x	f	C	f

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Parkia filicoidea	Lake Victoria swamp forest (also Somalia-Masai and Zambezian evergreen or semi-evergreen riparian forest)		C	f		f	x	f	f	f
Peddiea fischeri			f		f	f	x	f	x	
Phoenix reclinata	Lake Victoria swamp forest; Zanzibar-Inhambane swamp forest; (palm species)	C	f	x	f	f	f	C	x	x
Pittosporum viridiflorum		f	f	f	f	f	f	f	x	
Pleiocarpa pycnantha			f		f	f	xb	f	f	f
Podocarpus falcatus	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	f	f	f	f	f	f	f		
Podocarpus latifolius	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river		f	f	x	f	D	f	f	
Podocarpus usambarensis	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river (dominant [*Podocarpus usambarensis* var. *dawei*])		f			f	D	f		
Polyscias fulva			f	f	f	f	xb	f	f	
Pouteria altissima			f		f	f	xb	f	f	
Prunus africana			f	f	f	f	xb	f	f	
Pseudospondias microcarpa	Lake Victoria swamp forest; Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river		C		f	f	x	f	f	
Psychotria mahonii			C	f	f	f	xb	f	f	
Psychotria peduncularis	Zambezian swamp forest		f	f	x	f	f	f	x	
Psydrax parviflora			f	f	f	f	xb	f	f	
Pterocarpus tinctorius				f		C			f	f
Pterygota mildbraedii					f	f	xb	f	f	
Pycnanthus angolensis	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river					f	xb	f	f	
Rapanea melanophloeos		f	f	f	f	f	f	f	x	f
Raphia farinifera	Lake Victoria swamp forest (palm species)		C	x		f	xb	f	Ce	x
Rauvolfia caffra			f	f		f	xb	D	Cs	f
Rauvolfia vomitoria						f	xb	f		
Rhus natalensis			f	f	f	f	xb	f	f	f
Rhus vulgaris			f	f	f	f	xb	f	f	

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Ritchiea albersii		f	f		C	f	xb	f	f	
Rothmannia urcelliformis		f	f	f		f	xb	x	f	
Schrebera arborea							x	C		
Scutia myrtina		f	f	f	C	f	x	f	x	
Senna didymobotrya			f	f	f	f	xb	f	f	
Shirakiopsis elliptica		f	f	f	C	f	xb	f	C	
Smilax anceps			f		f	f	f	f	x	
Sorindeia madagascariensis			C	f		f				x
Spathodea campanulata			f		f	f	xb	f		
Spondianthus preussii	Lake Victoria swamp forest					f	C	f		
Sterculia tragacantha					f	f			C	
Strombosia scheffleri	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river		f	f	f	f	xb	f		f
Strychnos mitis	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	f	f	f		f	xb	f		f
Symphonia globulifera	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river				f	f	x	f	f	
Synsepalum brevipes			f	f		f	xb	f	f	f
Syzygium cordatum	Lake Victoria swamp forest; Zambezian swamp forest		f	D	C	f	f	x	Ceps	f
Syzygium guineense	Sudanian riparian forest (*Syzygium guineense* ssp. *guineense*)	C	f	f	x	f	xb	f	f	f
Syzygium owariense	Zambezian swamp forest			D		f	f	f	Cep	
Tabernaemontana pachysiphon			f	f		f	xb	f	f	f
Terminalia sambesiaca	Somalia-Masai riparian forest		f	f		C			f	f
Tetrapleura tetraptera	Guineo-congolian species in forests on alluvial deposits at the mouth of the Kagera river		f				x	f		f
Treculia africana				f		f	xb	f	f	f
Trema orientalis		f	f	f	f	f	x	f	f	f
Trichilia dregeana			f	f		f	xb	f	f	f
Trichocladus ellipticus	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	f	f	f	f	f	x	f	f	
Trilepisium madagascariense			f	f		f	xb	f	f	f
Typhonodorum lindleyanum	Zanzibar-Inhambane swamp forest					f				x

Species	Regional status (see section 2.3)	fsE (Ethiopia)	(Kenya)	(Malawi)	(Rwanda)	(Tanzania)	fsbU (Uganda subtype)	fsrU (Uganda subtype)	(Zambia)	(coast)
Uapaca guineensis	Lake Victoria swamp forest; Zambezian swamp forest			f		f			Cep	f
Vangueria apiculata			f	f	f	f	xb	f	f	
Vangueria madagascariensis		f	C	f		f	f	f		f
Vepris nobilis		f	f	f	C	f	xb	f	f	f
Vernonia amygdalina			f	f	f	f	xb	f	f	
Vitex doniana	Sudanian riparian forest	f	f	f	f	f	f	f	f	x
Vitex ferruginea			f			f	xb	f	f	f
Voacanga thouarsii	Lake Victoria swamp forest; Zanzibar-Inhambane swamp forest		C	f		x	f	f	x	x
Warburgia ugandensis	Afromontane species in forests on alluvial deposits at the mouth of the Kagera river	f	f	f		f	xb	f		
Xylopia aethiopica	Zambezian swamp forest		f			f	xb	f	Cep	f
Xylopia rubescens	Zambezian swamp forest					f	f	f	Cp	
Xymalos monospora			f	f	f	f	xb	f		f
Zanha golungensis			f	f	f	f	xb	f	f	f
Zanthoxylum gilletii			f		f	f	xb	f		
Zanthoxylum rubescens			f			f	xb	f		
Zanthoxylum usambarense		f	f		x	f				f
Ziziphus pubescens		f	C	f		f	f	f	f	f

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