Family: ***Irvingiaceae***

Taxon: ***Irvingia gabonensis***

Synonym: *Irvingia barteri*
Mangifera gabonensis

Common Name: African wild mango
bush mango
dikabread tree
dikanut
ogbono

Questionaire : current 20090513 **Assessor:** Assessor **Designation:** L
Status: Assessor Approved **Data Entry Person:** Assessor **WRA Score -1**

101	**Is the species highly domesticated?**	**y=-3, n=0**	**n**
102	**Has the species become naturalized where grown?**	**y=1, n=-1**	
103	**Does the species have weedy races?**	**y=1, n=-1**	
201	**Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
202	**Quality of climate match data**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
203	**Broad climate suitability (environmental versatility)**	**y=1, n=0**	**n**
204	**Native or naturalized in regions with tropical or subtropical climates**	**y=1, n=0**	**y**
205	**Does the species have a history of repeated introductions outside its natural range?**	**y=-2, ?=-1, n=0**	**n**
301	**Naturalized beyond native range**	**y = 1*multiplier (see Appendix 2), n= question 205**	**n**
302	**Garden/amenity/disturbance weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
303	**Agricultural/forestry/horticultural weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
304	**Environmental weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	**n**
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	**n**
405	**Toxic to animals**	**y=1, n=0**	**n**
406	**Host for recognized pests and pathogens**	**y=1, n=0**	**n**
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	**n**
408	**Creates a fire hazard in natural ecosystems**	**y=1, n=0**	**n**
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	**y**

410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	**y**
411	**Climbing or smothering growth habit**	**y=1, n=0**	**n**
412	**Forms dense thickets**	**y=1, n=0**	**n**
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**n**
503	**Nitrogen fixing woody plant**	**y=1, n=0**	**n**
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**y=1, n=0**	**n**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	**y**
603	**Hybridizes naturally**	**y=1, n=-1**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	
605	**Requires specialist pollinators**	**y=-1, n=0**	**n**
606	**Reproduction by vegetative fragmentation**	**y=1, n=-1**	**n**
607	**Minimum generative time (years)**	**1 year = 1, 2 or 3 years = 0, 4+ years = -1**	**>3**
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	**n**
702	**Propagules dispersed intentionally by people**	**y=1, n=-1**	**y**
703	**Propagules likely to disperse as a produce contaminant**	**y=1, n=-1**	**n**
704	**Propagules adapted to wind dispersal**	**y=1, n=-1**	**n**
705	**Propagules water dispersed**	**y=1, n=-1**	
706	**Propagules bird dispersed**	**y=1, n=-1**	**n**
707	**Propagules dispersed by other animals (externally)**	**y=1, n=-1**	**y**
708	**Propagules survive passage through the gut**	**y=1, n=-1**	**y**
801	**Prolific seed production (>1000/m2)**	**y=1, n=-1**	**n**
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	**n**
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	**y**
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: L **WRA Score** -1

Supporting Data:

101	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Is the species highly domesticated? No] "Assessment of the variation in tree characters among planted trees in south western Cameroon indicates that farmers have traditionally selected for large fruit and kernel size and easy extractability. ICRAF has started a systematic programme of domestication of Irvingia gabonensis. This programme utilizes the variability by selecting trees with desirable traits and propagating them, while keeping a broad genetic base. A clonal approach aimed at cultivar development has been adopted. An assessment of the variability in fruits and kernel traits was made and trees were selected on the basis of desired fruit characteristics. Studies are in progress for the development of methods of marcotting and grafting Irvingia gabonensis to capture desired traits in domesticating this species."
102	2014. WRA Specialist. Personal Communication.	NA
103	2014. WRA Specialist. Personal Communication.	NA
201	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Species suited to tropical or subtropical climate(s) 2-High] "Irvingia gabonensis is indigenous to the humid forest zone of the Gulf of Guinea from western Nigeria east to the Central African Republic, and south to Cabinda (Angola) and the westernmost part of DR Congo; it also occurs in São Tomé et Príncipe. It is planted in parts of this area, e.g. in south-western Nigeria and southern Cameroon, and also in Côte d'Ivoire, Ghana, Togo and Benin."
202	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Quality of climate match data 2-High]
203	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Broad climate suitability (environmental versatility)? No] "Climatic amplitude (estimates) - Altitude range: 0 - 500 m - Mean annual rainfall: 1500 - 2500 mm - Rainfall regime: uniform - Dry season duration: 2 - 4 months - Mean annual temperature: 24 - 26ºC"
203	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Broad climate suitability (environmental versatility)? No] "The preferred habitat of Irvingia gabonensis is moist lowland tropical forest below 1000 m altitude and with annual rainfall of 1500–3000 mm and mean annual temperatures of 25–32°C."
204	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Native or naturalized in regions with tropical or subtropical climates? Yes] "This species occurs from Guinea-Congolian region, Sierra Leone to Zaire. Mature emergent trees are common in low lying areas (Lawson et al., 1970), however small fertile trees are found on higher land in drier forests. Its frequency is described as rare."
205	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Does the species have a history of repeated introductions outside its natural range? No] "Irvingia gabonensis is cultivated for commercial production in southern Nigeria and southern Cameroon."
301	2012. Imada, C.. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Musem Technical Report 60. Bishop Musem, Honolulu, HI	[Naturalized beyond native range? No evidence]
301	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Naturalized beyond native range? No evidence]
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No evidence]
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No evidence]
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No evidence]

305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No evidence]
401	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Produces spines, thorns or burrs? No "Trees; papillae present or absent on under surface of leaves; bark light coloured, slash whitish, pale brown at the outside with pale yellow fibres close to the centre which oxidise to blue-black when cut with an iron blade."
402	2004. Clark, L.E./Sunderland, T.C.H. (eds.). The Key Non-Timber Forest Products of Central Africa. State of the Knowledge. Technical Paper No. 122. U.S. Agency for International Development, Washington, D.C.	[Allelopathic? No evidence] "Irvingia spp. have positive effects on the soils in which they grow. For example, they reduce soil bulk density and increase levels of organic carbon and exchangeable potassium and magnesium ions (Kang et al. 1994). This makes them very suitable for use as agroforestry trees in a multi-story crop setup."
402	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Allelopathic? No evidence] "Erosion control: Planted alongside other species to check soil erosion."
403	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Parasitic? No evidence] "Small to large tree up to 40 m tall; bole generally straight, up to 100 cm in diameter, with buttresses up to 3 m high; outer bark smooth to scaly, grey to yellow-grey, inner bark yellow, fibrous; crown spherical or taller than wide, dense."
404	1999. Ayuk, E.T./Duguma, B./Franzel, S./Kengue, J./Mollet, M./Tiki-Manga, T./Zenkeng, P.. Uses, management and economic potential of Irvingia gabonensis in the humid lowlands of Cameroon. Forest Ecology and Management. 113(1): 1-9.	[Unpalatable to grazing animals? No] "Other non-food uses that were identified include firewood (dead branches), timber, poles, stakes and leaves as fodder."
404	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Unpalatable to grazing animals? No] "Fodder: Seeds are used as cattle cake in "Ghana."
405	1999. Ayuk, E.T./Duguma, B./Franzel, S./Kengue, J./Mollet, M./Tiki-Manga, T./Zenkeng, P.. Uses, management and economic potential of Irvingia gabonensis in the humid lowlands of Cameroon. Forest Ecology and Management. 113(1): 1-9.	[Toxic to animals? No evidence] "...leaves as fodder."
405	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Toxic to animals? No evidence] "Fodder: Seeds are used as cattle cake in "Ghana."
406	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Host for recognized pests and pathogens? No] "No diseases or pest of Irvingia gabonensis trees have been recorded."
407	1999. Ayuk, E.T./Duguma, B./Franzel, S./Kengue, J./Mollet, M./Tiki-Manga, T./Zenkeng, P.. Uses, management and economic potential of Irvingia gabonensis in the humid lowlands of Cameroon. Forest Ecology and Management. 113(1): 1-9.	[Causes allergies or is otherwise toxic to humans? No evidence] "Although mentioned only by a small proportion of the farmers in all three divisions, some medicinal value is associated with Irvingia gabonensis for the treatment of hernia, yellow fever, dysentry and diarrhoea and can be used as an antipoison agent."
407	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Causes allergies or is otherwise toxic to humans? No evidence] "Food: Fruit pulp is palatable and can be used for a fruit drink and for jam production. The kernel can be processed into flour by extraction, drying and grinding. The pounded seed is added to meat and various vegetable dishes as a sauce. Margarine and cooking oil can be obtained from the kernels."
408	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Creates a fire hazard in natural ecosystems? No evidence] "The preferred habitat of Irvingia gabonensis is moist lowland tropical forest below 1000 m altitude and with annual rainfall of 1500–3000 mm and mean annual temperatures of 25–32°C." [Occurs in moist forests which are unlikely to be susceptible to wildfires]

409	2000. Theuerkauf, J./Waitkuwait, W.E./Guiro, Y./Ellenberg, H./Porembski, S.. Diet of forest elephants and their role in seed dispersal in the Bossematié Forest Reserve, Ivory Coast. Mammalia. 64(4): 447-460.	[Is a shade tolerant plant at some stage of its life cycle? Yes] "TABLE 1. – Frequency of food plants in the diet and frequency of germination in elephant droppings of the Bossematié Forest Reserve" [Irvingia gabonensis - Light requirements = shade]
409	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Is a shade tolerant plant at some stage of its life cycle? Presumably Yes] "The dika nut tree is a species of dense moist forest."
410	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Tolerates a wide range of soil conditions? Yes] "Soil descriptors - Soil texture: light; medium; heavy - Soil drainage: free - Soil reaction: acid; neutral; alkaline"
410	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Tolerates a wide range of soil conditions ? Yes] "Soil type: Does not have any particular soil preference; grows well in well-drained, acidic soils."
411	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Climbing or smothering growth habit? No] "Tree to 40 m tall; buttresses to 3 m high; bole straight and unbranched for 20-30 m;"
412	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Forms dense thickets? No evidence] "I. gabonensis occurs in the wild in lowland forest; 2-3 trees occur together and in some areas it is reported to be gregarious. The dika nut tree is a species of dense moist forest."
501	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Aquatic? No] "The preferred habitat of Irvingia gabonensis is moist lowland tropical forest below 1000 m altitude…"
502	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Grass? No] Irvingiaceae
503	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Nitrogen fixing woody plant? No] Irvingiaceae
504	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Small to large tree up to 40 m tall; bole generally straight, up to 100 cm in diameter, with buttresses up to 3 m high; outer bark smooth to scaly, grey to yellow-grey, inner bark yellow, fibrous; crown spherical or taller than wide, dense. Leaves alternate, simple and entire; stipules up to 4 cm long, unequal, forming a cone protecting the bud, caducous, leaving an annular scar on the branches; petiole up to 5 mm long; blade elliptical, 4.5–8 cm × 2–4 cm, base cuneate, apex acute or indistinctly acuminate, thinly leathery, pinnately veined. Inflorescence an axillary panicle up to 9 cm long. Flowers bisexual, regular, 5-merous, small; pedicel up to 5 mm long; sepals free, 1–1.5 mm long; petals free, 3–4 mm long, yellowish white; stamens 10, inserted below disk, free, equal, filaments 4–5 mm long; disk 1.5 mm in diameter, bright yellow, nectariferous; ovary superior, 2 celled, style 1–2 mm long. Fruit an ellipsoid to cylindrical drupe, occasionally nearly spherical, slightly laterally compressed, 4–6.5 cm × 4–6.5 cm × 3.5–6 cm, smooth, green when ripe; pulp bright orange, soft, juicy, sweet to slightly bitter, with a few weak fibres, stone woody, 1-seeded. Seed 2.5–4 cm × 1.5–2.5 cm × c. 1 cm. Seedling with epigeal germination."
601	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Evidence of substantial reproductive failure in native habitat? No] "In Central African Rep. some trees were observed to not produce fruit every year. One tree flowered but apparently did not fruit. Local people say that in some years fruit are very scarce over areas of 5-20 km diam. but that adjacent areas may have a good fruit crop." … "Distribution: This is a widespread species which is probably commoner than the herbarium records suggest."
601	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Evidence of substantial reproductive failure in native habitat? No] "Irvingia gabonensis is fairly widespread. It does not seem to be in danger of genetic erosion. It is classified in the IUCN Red List as a lower risk species, but being close to the qualification 'vulnerable'"

602	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Produces viable seed? Yes] "Irvingia gabonensis is mainly propagated by seed." … "Germination of Irvingia gabonensis seeds takes more than 14 days and they should first be extracted from the fruit and dried for at least 2 days. A germination rate of 80% can be reached in this way."
603	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Hybridizes naturally? Unknown. "Hardly" hybridize?] "Some authorities consider Irvingia wombolu merely a variety of Irvingia gabonensis. Because of the long history of protection and cultivation, others consider them cultivars of a single species. However, DNA analyses indicate that the 2 taxa are clearly genetically distinct and do not (or hardly) hybridize, even where sympatric."
604	2004. Clark, L.E./Sunderland, T.C.H. (eds.). The Key Non-Timber Forest Products of Central Africa. State of the Knowledge. Technical Paper No. 122. U.S. Agency for International Development, Washington, D.C.	[Self-compatible or apomictic? Possibly No] "Ladipo et al. (1996) state that very little is known about the mating systems and gene flow of Irvingia spp., except that I. gabonensis is known to have hermaphroditic flowers. They also report uncertainty about the level of outbreeding in this species, but a recent study indicates that 100% outbreeding occurs, implying that I. gabonensis is highly heterozygous."
604	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Self-compatible or apomictic?] "The flowers are pollinated by a variety of insects and self-pollination is rare."
605	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Requires specialist pollinators? No] "The flowers are pollinated by a variety of insects and self-pollination is rare."
605	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Requires specialist pollinators? No] "I. gabonensis is hermaphroditic, with flowers being pollinated by Coleoptera, Diptera, Hymenoptera and Lepidoptera."
606	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Reproduction by vegetative fragmentation? No] "Irvingia gabonensis is mainly propagated by seed." … "Methods of vegetative propagation through rooting of leafy stem cuttings under mist have been developed, and micropropagation, grafting and marcotting experiments are in progress."
607	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Minimum generative time (years)? 4+] "In the wild trees start fruiting when 10–15 years old, but planted trees may first fruit after 4 years."
701	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "Fruit an ellipsoid to cylindrical drupe, occasionally nearly spherical, slightly laterally compressed, 4–6.5 cm × 4–6.5 cm × 3.5–6 cm, smooth, green when ripe; pulp bright orange, soft, juicy, sweet to slightly bitter, with a few weak fibres, stone woody, 1-seeded. Seed 2.5–4 cm × 1.5–2.5 cm × c. 1 cm." [Fruit and seeds relatively large and unlikely to be inadvertently dispersed]
702	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Propagules dispersed intentionally by people? Yes] "Although in most areas Irvingia gabonensis occurs in wild stands or is retained in plantations of cocoa, coffee or annual food crops or in home gardens, it is commonly planted in some regions. Management tasks mostly include pruning, harvesting (gathering and picking) and fertilization."
703	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Propagules likely to disperse as a produce contaminant? No] "Fruit an ellipsoid to cylindrical drupe, occasionally nearly spherical, slightly laterally compressed, 4–6.5 cm × 4–6.5 cm × 3.5–6 cm, smooth, green when ripe; pulp bright orange, soft, juicy, sweet to slightly bitter, with a few weak fibres, stone woody, 1-seeded. Seed 2.5–4 cm × 1.5–2.5 cm × c. 1 cm." [Fruit and seeds relatively large and unlikely to be inadvertently dispersed]
704	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Propagules adapted to wind dispersal? No] "Fruits strongly laterally compressed, 4.5-8 cm long, 4.5-7 cm wide, 2.4-5 cm thick, smooth, green when ripe, occasionally very pale yellow; mesocarp firm and dry with stiff fibres; fibres remaining straight as the mesocarp rots; pyrene single, very hard, flat, remaining on the ground for several seasons. Seeds 2.8-6 cm long, 1.7-4 cm wide and 3.5-6(-7) mm thick; endosperm present, visible on fresh and preserved specimens as a 1-1.5 mm thick, white layer on the inside of the testa."

705	1999. Chinaka, C./Obiefuna, J.C.. Production and Utilization of "Ogbono" (Irvingia gabonensis). Extension Bulletin No. 140. Horticulture Series No. 4. National Agricultural Extension and Research Liaison Services, Zaria, Nigeria	[Propagules water dispersed? Unknown. Distribution suggests large fruit and seeds may possibly be moved by water] "In Nigeria, the tree is found growing between latitude 4.15 and 8.00 ^{0} N of the equator along streams and the banks of rivers and in village homesteads."
706	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Propagules bird dispersed? No. No evidence. Fruit and seeds are relatively large, and not likely to be dispersed by birds] "The fruits are swallowed whole by elephants which frequently eat the fallen fruit. The trampling of the vegetation under mature trees can cause the herb, shrub and sapling layer to be much reduced. Twenty five pyrenes have been found in one pile of elephant dung. Gorillas, chimpanzees, duikers and various smaller mammals eat the mesocarp but do not usually swallow the pyrenes. Red Forest Pigs (Potamochoerus porcus) split open the pyrenes with their teeth and eat the seeds. Squirrels and other rodents may occasionally manage to open pyrenes, but this is rare."
707	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Propagules dispersed by other animals (externally)? Yes. Fruit may be carried away and seeds dispersed without being ingested] "Gorillas, chimpanzees, duikers and various smaller mammals eat the mesocarp but do not usually swallow the pyrenes."
708	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Propagules survive passage through the gut? Yes. Seeds may also be depredated] "The fruits are swallowed whole by elephants which frequently eat the fallen fruit. The trampling of the vegetation under mature trees can cause the herb, shrub and sapling layer to be much reduced. Twenty five pyrenes have been found in one pile of elephant dung. Gorillas, chimpanzees, duikers and various smaller mammals eat the mesocarp but do not usually swallow the pyrenes. Red Forest Pigs (Potamochoerus porcus)s plit open the pyrenes with their teeth and eat the seeds. Squirrels and other rodents may occasionally manage to open pyrenes, but this is rare." … "Germination in piles of elephant dung is common and appears to take place within a few weeks of the dung being deposited."
708	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Propagules survive passage through the gut? Yes] "After the fruits fall the pulp rots away quickly. Successful germination in elephant dung is common."
708	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Propagules survive passage through the gut? Yes] "Seed dispersal is by specialized vertebrates, such as elephants."
801	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Prolific seed production (>1000/m2)? No] "Fruit an ellipsoid to cylindrical drupe, occasionally nearly spherical, slightly laterally compressed, 4–6.5 cm × 4–6.5 cm × 3.5–6 cm, smooth, green when ripe; pulp bright orange, soft, juicy, sweet to slightly bitter, with a few weak fibres, stone woody, 1-seeded."
801	2012. Omokhua, G.E./Ukoima, H.N./Aiyeloja, A.A.. Fruits and Seeds Production of Irvingia Gabonensis (O'Rorke) and Its Economic Importance in Edo Central, Nigeria. ournal of Agriculture and Social Research (JASR). 12(1): 149-155.	[Prolific seed production (>1000/m2)? No] "In this study, the yields of fruits and seeds of I. gabonensis were evaluated in traditional agro forestry and compound farming systems. The results showed that the mean fruit yield of the species are 620 and 850 fruits/tree…" [One seeded fruit]
802	1996. Harris, D.J.. A Revision of the Irvingiaceae in Africa. Bulletin du Jardin botanique national de Belgique. 65(1/2): 143-196.	[Evidence that a persistent propagule bank is formed (>1 yr)?] "The fruits do not germinate under the parent tree until the mesocarp has started to rot away. This takes from one to six months. Many intact pyrenes with rotten seeds can be found under trees. Germination takes place with the pyrene on the surface of the soil or leaf litter and is epigeal and phanerocotylar."
802	2006. Nya, P.J./Omokaro, D.N./Nkang, A.E.. Effect of pretreatments on seed viability during fruit development of two varieties of Irvingia gabonensis. Global Journal of Pure and Applied Sciences. 12 (2): 141–148.	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "The low germination capacity recorded in I. gabonensis could be due to the recalcitrant nature of the seeds which, unlike orthodox seeds, do not conform with the rule of increasing longevity with fall in temperature and moisture content"
802	2007. Tchoundjeu, Z./Atangana, A.R.. Irvingia gabonensis (Aubry-Lecomte ex O'Rorke) Baill. In: van der Vossen, H.A.M. & Mkamilo, G.S. (Editors). PROTA 14: Vegetable oils/Oléagineux. PROTA, Wageningen, Netherlands	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Seed is recalcitrant."
803	2014. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species

804	1996. Shiembo, P.N./Newton, A.C./Leakey, R.R.B.. Vegetative propagation of Irvingia gabonensis, a West African fruit tree. Forest Ecology and Management. 87(1): 185-192.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes. Coppices] "Approximately 12 months after felling, cuttings were obtained from coppice shoots of the selected I. gabonensis trees."
804	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Tolerates, or benefits from, mutilation, cultivation, or fire?] "I. gabonensis responds well to pruning. Maintenance operations such as watering and weeding are required in the nursery."
805	2014. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Thrives in tropical climates
- Shade tolerant
- Tolerates many soil types
- Seeds dispersed by people and large frugivorous mammals
- Coppices

Low Risk Traits

- No reports of naturalization or invasiveness to date, but not widely planted outside native range
- Unarmed (no spines, thorns or burrs)
- Non-toxic
- Edible fruit
- Medicinal uses
- Not known to spread vegetatively
- Wild trees reach maturity in 10-15 years
- Relatively large fruit & seeds unlikely to be inadvertently dispersed
- Will not form a persistent seed bank