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The Use of Wild and Cultivated Plants as famine Foods on Pemba Island, Zanzibar

Martin Walsh

Njaa haina huruma japokuwa kitu huna
“Hunger has no mercy, even when you have
nothing”¹

- 1 The words “tropical” and “paradise” are endlessly recycled in tourist brochures and travel guides referring to the East African coast and islands, Zanzibar in particular. Few casual visitors will recognise the sentiment expressed by the poet above, or identify it with life on Pemba island, generally agreed to be the most verdant of all the places on the Indian Ocean rim settled by Swahili speakers (Prins 1967: 27). But the reality is that much of the littoral is relatively barren and prone to drought, a description that fits the ragged limestone landscape of parts of Zanzibar, Pemba included, as well long stretches of the mainland coast. And we know that political and economic events can generate food shortages and famine anywhere, regardless of apparent natural wealth (Sen 1981; Caplan 1994: 19-24).
- 2 The emphasis in the academic literature on the maritime and mercantile orientations of Swahili “civilization” (e.g. Middleton 1992; Horton and Middleton 2000) has led to comparative neglect of the rural underside of an urban phenomenon that continues to fascinate researchers and tourists alike. The study of agricultural practices and ethnobotany have been particular casualties of this neglect (see Walsh 1992: 136), likewise our knowledge of the exploitation of terrestrial wildlife by Swahili-speaking communities (cf. Walsh 2007). Little has been written about past and present adaptations to the land, and even less about local responses to famine. This paper aims to help redress the balance by describing the use of plants as famine foods by the people of Pemba, and by considering some of the implications of this for our understanding of the history and political economy of the Swahili coast.

Famine on “The Green Island”

- 3 Pemba is a medium-sized island (c.1,000 km²) lying 40-60 km off the East African coast. It is fringed by a number of islets and surrounded by a deep sea channel which separates it from the main island of Zanzibar, Unguja, c.50 km to the south (Walsh 2007: 86, 90). In the 2002 census Pemba had a population of 362,166 people, more than a third of the total for Zanzibar. Both islands have suffered different periods of foreign and colonial rule – Portuguese, Arab and British – and the newly independent government of Zanzibar was overthrown in a violent revolution in January 1964. In April of that year Zanzibar joined with Tanganyika and became a semi-autonomous territory within the United Republic of Tanzania. Since then, and despite economic liberalisation in the 1980s and the introduction of multi-party elections in the 1990s, the country has been ruled by a single political party (Bakari 2001).
- 4 Arab writers dubbed Pemba “The Green Island”, and for many years it provided valuable timber and supplied both Mombasa and Malindi with agricultural produce (Gray 1962: 17-18, 63). The Omani Arabs and their slaves who settled on the island in the 19th century cleared the forested hills of western Pemba and replaced most of the natural vegetation with clove trees, the export crop that subsequently dominated the island economy (Sheriff 1987: 54, 57). The development of clove cultivation, which continued throughout the British colonial period, increased Pemba’s reliance on the importation of basic foodstuffs and rendered the island especially vulnerable to famine (Bowles 1991: 89-91). Since this large-scale transformation of the agricultural landscape, government officers and others have generally distinguished two broad agro-ecological zones on the island: the plantation area in the west, and the flatter and drier coral rag lands in the east (Middleton 1961: 52-53). More recently researchers have identified five different farming systems zones on Pemba, one of them covering the clove plantations and the other four representing different cropping systems on its margins (Walsh 1995a: 8-11; ZCCFSP 1995).
- 5 Like other parts of the East African coast Pemba has a bimodal pattern of rainfall. The short rains (Swahili *vuli*) usually fall in November and December, and the long rains (*masika*) between March and May. Mean annual rainfall is highest in the heart of the clove plantation area (up to 1960 mm) and lowest in the east (as low as 1400 mm), where the rains are also most liable to fail, the short rains in particular (Koenders 1992; ZCCFSP 1995). Localised food shortages are common in some areas, especially in the north-east and the Micheweni peninsula, where even in average years low rainfall combined with poor soils and high population makes it difficult for households to achieve self-sufficiency in food. Instead household members depend on off-farm income (usually from fishing) to buy food and/or they travel elsewhere to cultivate food crops (ZCCFSP 1995). Famine is an ever-present threat in these areas, and it may also affect poor households in the plantation zone (Goldman 1996: 136-137), especially when their food crops are attacked by pests or vermin. Even at the best of times maternal anaemia and child malnutrition are widespread on Pemba (Rose 1994: 11-14).
- 6 The ever-present threat of food shortages is reflected in the literary and cultural traditions of Pemba. Whiteley’s small collection of Swahili verse from Pemba includes two poems with the title *Njaa*, ‘Hunger’ (1958: 27-28, 51-52). One of these, composed c.1932 by Sheikh Salim bin Mandhiri, refers among other things to the depredations of vervet monkeys on cassava shoots, and the desperation that leads people to eat wild greens,

immature coconuts, and the trumpet worms that are usually used as fishing bait (1958: 27-28). Local legends and folktales also refer to famine (e.g. Goldman 1996: 457-458), while the traditional bull-fights of Pemba are said to have been performed “to induce rain in times of drought” and so avert food shortages (Ingrams 1931: 422). They were (and are) held most often in the villages of eastern Pemba, in the months preceding the long rains (Adie 1952: 106; Gray 1980: 121-122). Otherwise *sadaka* or religious offerings could be organised at any time of year to avert drought, famine and other misfortunes (cf. Gray 1956: 22).

- 7 Although localised food shortages can sometimes be circumvented by mobilising kin-based and inter-village networks of co-operation and exchange, this is more difficult when famine is widespread, affecting different farming systems on the island. The most notorious famine of this kind in living memory occurred in 1971-72, and is generally blamed by Pembans on government policies and in particular restrictions that had been placed on food imports. Following the Zanzibar Revolution in 1964 the new government nationalised large private enterprises, took control of agricultural marketing, and started a process of land reform and redistribution. Determined that Zanzibar should be self-sufficient in food production, President Abeid Amani Karume reduced imports of rice and other foodstuffs, and invested instead in a number of large-scale construction projects. These and other misguided measures ensured that farmers across the islands were more exposed than ever to the vagaries of the climate, and food shortages became a regular feature of island life, culminating in the famine of 1971-72 (Clayton 1981: Bader 1984: 134-146; 279-296; Cohn 1986: 51-52; Shao 1992: 79-91).² The assassination of Karume in April 1972 led to a relaxation of import restrictions, and the process of political and economic liberalisation that followed, slow and uneven though it was, ensured that the same mistakes were not repeated again. But localised food shortages still occur on Pemba, and continue to be the subject of political argument and recriminations (e.g. Salim 2008).

Responses to famine and the role of plant foods

The famine forced thousands of Pembans to flee the Isles to the mainland. Many others were forced to eat roots and bush fruit when their ration cards were used up; and some starved to death. (Cameron 2002: 84)

- 8 The following description of the use of wild and cultivated plants as famine foods is based primarily on recollections of the 1971-72 famine. These were recorded in 1994-96 when I worked on Pemba as a social anthropologist attached to the Zanzibar Cash Crops Farming Systems Project (ZCCFSP).³ General information on the agricultural history of Pemba and the impacts of the 1971-72 famine was collected in the course of project research in different parts of the island (e.g. Walsh 1995b: 14; 1995c: 9). I also elicited accounts of the famine from colleagues and others, and in March 1996 asked my local research assistant (here called “Jamila”)⁴ to record the experiences of people who had lived through it. Jamila had already included a short account of the famine in a review of the postrevolutionary history of Pemba prepared the year before. The detailed Swahili narratives from 1996 were written up by her in two exercise books with the title *Visa vya njaa kisiwani Pemba*, “Stories of the famine on the island of Pemba”.
- 9 As Cameron notes, the famine had dire consequences, and people adopted different strategies to avoid the worst of these. Both Pemba and Unguja were affected by severe food shortages caused by the restriction on imports, and the situation on Pemba was made worse by the island’s overreliance on cloves and its comparative lack of subsistence

crops. In their desperation to obtain food some Pembans stole it from more fortunate neighbours. Mwamize Juma,⁵ originally from Kiwani on the east coast of Pemba, recalled how their cassava fields were invaded by thieves every night, especially a distant plot in Chwale which had given a good crop but was next to the village settlement. After a fortnight or so of this pilfering she and her husband decided to dig up the remaining cassava and bury it in their own yard, where they watered the soil every day, removing tubers as and when they were needed to eat. Unfortunately most of their efforts came to nothing because some of the cassava went rotten and some of it failed to mature.

- 10 Islanders struggled to buy food, or obtain it in exchange for other produce. Many fishermen and boat owners turned to smuggling between Pemba and Kenya, where cloves fetched a much higher price (Clayton 1981: 137). Abdulrahman Ali,⁶ an agricultural officer, described the illicit export of cloves, copra, and the opercula of shells (used to make incense) from northern Pemba to Mombasa, presumably via the villages of the southern Kenya coast. The smugglers returned to Pemba with foodstuffs and other scarce commodities, and Mzee Abdulrahman recalled travelling to Micheweni twice a month during and after the famine to buy food to sell in Wete. This was a risky trade, and Salma Abeid⁷ from Kwale related how she used to walk all night long through the bush with her father and brothers to barter cloves for maize flour, rice, sugar and other goods in Wingwi. Rabia Salim⁸ remembered being visited in the middle of the night by a stranger who led her down to the creek at Limbani where she was able to buy a variety of otherwise unavailable foodstuffs and household essentials. People who were caught trading in this way were liable to be severely punished by the authorities.
- 11 Under the circumstances islanders had little option but to eat whatever food was obtainable, regardless of its provenance or normal role in the diet. Aside from fish and other edible marine creatures, relatively few wild animal species were (and are) available for consumption on Pemba (Walsh 2007: 86-90), and none in sufficient numbers to feed the whole island. The most accessible of famine foods came from wild and cultivated plants, and this remains the case today. One readily available source of food for many people were the seeds that they had set aside as planting material.
- 12 When Bi Mwamize and her young family in Kiwani lost their cassava crop they were forced to eat all of the rice grains that they had stored for the next planting season. The negative consequences of this practice in both the short- and long-term are well known, and Mzee Abdulrahman⁹ averred that a shortage of rice and cassava planting material was itself one of the causes of the 1971-72 famine.
- 13 The main plant foods that people resorted to are discussed below under three headings referring to the different parts of the plant used: fruit and seeds, leaf and other vegetables, and tubers. Accounts from 1971-72 are supplemented by and compared with information from the available literature and reports of more recent food shortages on Pemba.

Fruit and seeds

- 14 When cassava, rice, and other basic foods are in short supply, they have to be substituted by items that normally play a limited or quite different role in the diet. Tree crops are often relatively resistant to drought, and coconuts and mangoes were among the cultivated products that Pembans resorted to during the 1971-72 famine. Yusuf Juma,¹⁰ originally from Mtambwe, remembered his family having to eat coconuts every evening,

after which they drank water and went to bed knowing that they would have to do the same again the next day. A lot of people did this, buying coconuts from the market for their supper, which was often the only meal they ate apart from breakfast (and which itself comprised leftovers or porridge if they were lucky).

- 15 Bi Halima, from Kinazini, recalled families in the Micheweni area eating the flesh of coconuts as their only meal, dubbing this food *boribo* after the name of a popular variety of mango. After a time coconuts became scarce, and even when people had other food to cook they were unable to prepare it in the normal way with coconut or cooking oil. When mangoes began to come into season there was a rush to harvest them, and even unripe fruits were cooked to prepare a dish called *kitenei*, which became the evening meal in many households. Ripe mangoes and *kitenei* were also important foods in some villages in the months following the first multiparty elections in October 1995, when the political crisis on Pemba exacerbated seasonal shortages. As one local observer has since remarked, whereas *kitenei* had once been thought of as a special dish, it no longer was, thanks to the difficult circumstances that people found themselves in (Ghassany 2003).
- 16 Our informants did not mention other fruits, presumably because they were not available in sufficient quantities to make them regular candidates for the main daily meal. Fewer tree crops are cultivated outside of the plantation areas, though bananas (including cooking varieties) and pawpaws are widespread (for an overview of these and other crops on Pemba see Koenders 1992: 17-29). Edible wild fruits include the very popular *mbungo* fruit (*Saba comorensis* (Bojer ex A. DC.) Pichon (Apocynaceae)), wild varieties of pineapple (common on the island), and the famous wild banana of Pemba, which has small and very seedy fruit that are among the bush foods eaten by children.¹¹ A longer list of edible wild fruits and seeds found on Pemba is given in the table. This list is no doubt incomplete, and the consumption of some of these species on Pemba remains to be confirmed. None of them is known to be *exclusively* a famine food.

Selected edible wild fruits and seeds of Pemba

| Botanical name | Swahili (and English) names |
|---|---|
| <i>Adansonia digitata</i> L. (Bombacaceae) | <i>mbuyu</i> (Ng, Vi), baobab |
| <i>Aframomum angustifolium</i> (Sonn.) K.Schum. (Zingiberaceae) | <i>mtuguu</i> , <i>mtuguu mke</i> (Vi), wild cardamom |
| * <i>Ananas comosus</i> Merr. (Bromeliaceae) | <i>mnanasi mwitu</i> (Ng), wild pineapple |
| <i>Ancylobotrys petersiana</i> (Kl.) Pierre (Apocynaceae) | <i>mtoria</i> (Ng) |
| <i>Annona senegalensis</i> Pers. (Annonaceae) | <i>mtopetope</i> (Ng), wild custard apple |

| | |
|---|--|
| <i>Bauhinia thonningii</i> Sch. & Thon. (Caesalpiniaceae) | <i>mchekwa</i> (Vi, Po), <i>nchekwa</i> (Nd), camel foot |
| <i>Borassus aethiopum</i> Mart. (Palmae) | <i>mvumo</i> , <i>borassus palm</i> ¹² |
| <i>Bridelia micrantha</i> (Hochst.) Baill. (Euphorbiaceae) | <i>mkarati</i> (Ng, Vi), <i>nkarati</i> (Nd), <i>mtututu</i> (Ng, Vi) |
| * <i>Cordia alliodora</i> (Ruiz & Pavon) Okan (Boraginaceae) | <i>mkamasi</i> (Ng, Ka), <i>mkodia</i> (Ng) |
| * <i>Cycas thouarsii</i> Gaudich. (Cycadaceae) | <i>mtapo</i> , <i>mtapu</i> , <i>mgundi</i> , false sago palm |
| <i>Deinbollia borbonica</i> Scheff. (Sapindaceae) | <i>mbotomwaka</i> (Wi), <i>mkunguma</i> (Ng), soap berry |
| <i>Flacourtia indica</i> (Brum. f.) Merrill (Flacourtiaceae) | <i>mchongoma</i> (Ng, Ka), governor's plum |
| <i>Flueggea virosa</i> (Willd.) Voigt. (Euphorbiaceae) | <i>mkwamba</i> (Ng, Ka, Vi, Po), <i>mkwambakwamba</i> (Ka), <i>mkwamba dume</i> (Po) |
| <i>Hyphaene coriacea</i> Gaertn. (Palmae) | <i>mwaa</i> (Ka, Vi), <i>mrara</i> (Vi), <i>mkoma pasi</i> (Vi), doum palm |
| <i>Inhambanella henriquesii</i> (Engl. & Warb.) Dubard (Sapotaceae) | <i>mkungupwa</i> (Ka), <i>msikundazi</i> (Ng, Ka, Vi) |
| <i>Landolphia kirkii</i> Dyer (Apocynaceae) | <i>mpo</i> (Ng, Mk), rubber vine |
| <i>Lannea schweinfurthii</i> (Engl.) Engl. (Anacardiaceae) | <i>mfupapo</i> (Ng, Ki, Vi), <i>muumbu</i> (Ng, Ka), <i>mbu</i> (Ka), <i>mmongo</i> (Vi), false marula |
| * <i>Musa acuminata</i> Colla (Musaceae) | <i>mgombatumbili</i> (Ng, We, Kan, Ki), <i>mgombakofi</i> (We, Ki), wild banana |
| <i>Parinari curatellifolia</i> Benth. (Chrysobalanaceae) | <i>mbura</i> (Ng, Vi), <i>mobola</i> plum |
| <i>Phoenix reclinata</i> Jacq. (Palmae) | <i>mkindu</i> (Ng, Vi), wild date palm |

| | |
|---|---|
| <i>Polysphaeria parvifolia</i> Hiern (Rubiaceae) | <i>mkanja</i> (Ng, Ka, Vi), <i>nkanja</i> (Po), <i>mganja</i> (Ki), <i>nchakachaka</i> (Nd), <i>nshakashaka</i> (Nd) |
| <i>Rawsonia lucida</i> Harv. & Sond. (Flacourtiaceae) | <i>mpera mwitu</i> (Ng, Vi) |
| <i>Rhus natalensis</i> Krauss (Anacardiaceae) | <i>mbambi</i> (Ka, Ko, Po), <i>mkichaka</i> (Ki), <i>mkumba</i> (Ng) |
| <i>Saba comorensis</i> (Bojer) Pichon (Apocynaceae) | <i>mbungo</i> (Ng) |
| <i>Sclerocarya birrea</i> (A.Rich.) Hochst. (Anacardiaceae) | <i>mng'ongo</i> (Ka), <i>cider tree</i> , <i>morula</i> |
| <i>Sorindeia madagascariensis</i> DC. (Anacardiaceae) | <i>mkunguma</i> (Ka), <i>nkunguma</i> (Wi), <i>nkunguma nke</i> (Wi), <i>mpilipili</i> (Ng, Vi), <i>mpilipili doria</i> (Ng), <i>mtikiza</i> (Ng) |
| <i>Suregada zanzibarensis</i> Baill. (Euphorbiaceae) | <i>mdimu msitu</i> (Ng, Ka, V) |
| <i>Synaptolepis kirkii</i> Oliv. (Thymeleaceae) | <i>mahari ya paka</i> (Po), <i>mfungapaka</i> (Ka) |
| <i>Synsepalum brevipes</i> (Baker) T.D.Penn (Sapotaceae) | <i>mchocha</i> (Ng, Vi, Po), <i>mchocha mke</i> (Ng) |
| * <i>Syzygium cumini</i> (L.) Skeels (Myrtaceae) | <i>mzambarau</i> (Ng, Ka, Vi), <i>jambolan</i> , <i>Java plum</i> |
| * <i>Tamarindus indica</i> L. (Caesalpiniaceae) | <i>mkwaju</i> (Ng, Ka), <i>tamarind</i> |
| <i>Typhonodorum lindleyanum</i> Schott (Aracaceae) | <i>mbie</i> (Ng, We, Kan, Ki), <i>mtogonya</i> (Kan,Ki); <i>mtongonya</i> (We), <i>mgombakofi</i> (Kan) |
| <i>Uapaca paludosa</i> Aubrév. & Leandri (Euphorbiaceae) | <i>mchenza mwitu</i> (Ng), <i>mchenza msitu</i> (Ng, Vi) |
| <i>Uapaca sansibarica</i> Pax (Euphorbiaceae) | <i>nchenza nsitu</i> (Nd) |
| <i>Uvaria acuminata</i> Oliv. (Annonaceae) | <i>mchofu</i> (Ka) |
| <i>Uvaria kirkii</i> Oliv. (Annonaceae) | <i>nchofu</i> (Mk, Ko) |

| | |
|---|--|
| <i>Vitex doniana</i> Sweet (Verbenaceae) | <i>mfiuu</i> (Ng, Vi, Po), black plum |
| * <i>Ziziphus mauritiana</i> Lam. (Rhamnaceae) | <i>nkunazi</i> (Nd), jujube, Indian plum |
| * <i>Ziziphus mauritiana</i> Lam. (Rhamnaceae) | <i>nkunazi</i> (Nd), jujube, Indian plum |

Key: *= species known or thought to be introduced. Locations in which names have been recorded: Ng= Ngezi; Ki= Ras Kiuyu; Ka= Kangagani; Kan= Kangani; Ki= Kiwani; Ko= Kojani; Mk= Ras Mkumbuu; Nd= Ndagoni; Po= Pondeani; W= Wete.

Sources: Williams (1949); Beentje (1990); Ruffo (1991); Heine and Legère (1995); Harvey (1996); Maundu *et al.* (1999); Ruffo *et al.* (2002); Nahonyo *et al.* (2005); own field notes and interviews with Salim Abdallah Subeit, 19 March and 9 July 1995; personal communication from Ahmad Kipacha, 19 January 2009

- 17 Most of these plants have fruits that can be eaten raw. However, the fruits of the false sago, *Cycas thouarsii* Gaudich. (Cycadaceae), require more elaborate preparation:

In Pemba the large fruits, picked when fully ripe, are split and the flesh removed and dried in the sun for about four days, when it becomes as hard as a stone. It is then fermented in a debe (tin) with layers of banana leaves for a week, after which it is cleaned of mould, soaked in water to soften for a further day and then powdered to a flour and used as porridge. Sometimes after more prolonged storage with the banana leaves the flesh is boiled and dressed with coconut juice as a vegetable. (Williams 1949 : 222)¹³

- 18 None of our informants referred to the false sago and its use as food, though it is possible that a more thorough study would fill this gap. The table does not include two wild palms whose fruits can be used to make cooking oil: *mchikichi*, the oil palm, *Elaeis guineensis* Jacq. (Palmae) (Williams 1949:241), and *mwale*, the raffia palm, *Raphia farinifera* (Gaertn.) Hyl. (Palmae) (Williams 1949: 430-431; Ruffo *et al.* 2002: 546-547). The use of the seeds of the wild aroid *Typhonodorum lindleyanum* Schott (Aracaceae) as a famine food is described in the section below on tubers.

Leaf and other vegetables

- 19 As well as describing his family's diet of coconuts during the 1971-72 famine, Yusuf Juma from Mtambwe also related how they had spent a lot of time looking for edible leaves and other vegetables. For some people a pot full of cooked greens comprised the daily meal, and Yusuf listed nine kinds of vegetable that were eaten in this way. Most of the greens he named are the leaves and/or shoots of cultivated plants:

- *kisamvu*, leaves of the cassava plant (*muhogo*), *Manihot esculenta* Crantz (Manihoteae). Williams (1949: 344) recorded that the "young green shoots" are eaten.
- *mayugwa*, leaves of old and new cocoyam (*majimbi*); taro, *Colocasia esculenta* (L.) Schott (Colocasieae), and tannia, *Xanthosoma sagittifolium* (L.) Schott (Caladieae). These two root crops are not clearly distinguished by name in Swahili, and both have edible leaves (Williams 1949: 207, 487-488; Heine and Legère 1995: 87-88, 91, 143, 271). They both originate from outside of Africa: taro was probably an early introduction from South-east Asia, and tannia is a relatively recent import into the continent from the West Indies (Purseglove 1985: 62, 70; Blench 233-234).

- *mboga ya kunde*, young leaves of the cow pea plant (*mkunde*), *Vigna sinensis* (L.) Savi ex Hassk. (Phaseoleae). Williams (1949) did not record the use of the leaves as a spinach.
- *mboga ya makunga*, fruit of the local garden egg (*mkunga*), *Solanum macrocarpon* L. (Solaneae). This plant was not mentioned by Williams (1949); Heine and Legère note that the fruits are normally “used as a spice in gravies” (1995: 169), i.e. for making cooking sauces. The local garden egg is a cultigen of West African origin that is now widely cultivated in the tropics for its fruit (Tindall 1983: 363).
- *mboga ya mtango*, young leaves of the pumpkin (*mtango*), *Cucurbita maxima* Duchesne (Cucurbitaceae). Although *mtango* often refers to *Cucumis* spp. , including the musk melon, *C. melo* L. (Cucurbitaceae), Jamila identified it with *mboga*, the pumpkin or squash gourd (Williams 1949: 220; Heine and Legère 1995: 226). This is a plant of South American origin, the young leaves of which are indeed widely eaten (Tindall 1983: 162-164).
- *mchicha*, according to Williams (1949: 118-119, 289) the leaves (and plant) of *Cleome gynandra* L. (Cleomaceae) and various *Amaranthus* spp. (Amaranthaceae) which are both cultivated in home gardens and found as weeds of cultivation. *C. gynandra*, bastard mustard, is widely distributed in the tropics and a common spinach on the Kenya coast (Maundu *et al.* 1999: 90-91). It is sometimes referred to in Zanzibar as *mchicha wa kawaida*, “ordinary *mchicha*”, to distinguish it from the amaranths. One of the most distinctive and widespread of the latter is the prickly amaranth, *A. spinosus* L. (Ruffo *et al.* 2002: 114-115), appropriately known as *mchicha mwiba*, the “spiny *mchicha*” (Heine and Legère 1995: 112-113). The names *nchicha wa kizungu*, “European spinach”, and *nchicha wa Pemba*, “Pemba spinach”, have been recorded in Ndongoni but not identified (Heine and Legère 1995: 278).
- *mtoriro*, leaves of the sweet potato (*kiazi kitamu*), *Ipomoea batatas* (L.) Lam. (Ipomoeae). According to Williams (1949: 308), it is the “young green shoots of certain varieties” that are used as spinach.

20 The remainder are the leaves of wild plants:

- *kikwayakwaya*, leaves (and plant) of *Stachytarpheta* spp. (Verbenaceae), said by Yusuf Juma to be common in the rice valleys. Williams remarked that two species were used as spinach on Pemba, *S. jamaicensis* (L.) Vahl and *S. indica* (L.) Vahl, describing them as “troublesome weeds of gardens and plantations” (1949: 453). Ruffo *et al.* (2002: 610) only discuss the first of these, a West Indian plant that is naturalised in many parts of Africa, Asia, Australia and Oceania.
- *mchunga*, leaves (and plant) known for their bitterness and so also used (as Yusuf Juma added) as medicine to treat diabetes (*sukari*). The name *mchunga* has a number of different botanical referents in Zanzibar and on the mainland, including *Launaea cornuta* (Hochst. Ex Oliv. & Hiern) C. Jeffrey (Cichorieae) and *Sonchus* spp. (Cichorieae). In Ndongoni in the west of Pemba *nchunga* has been identified as referring to *Sonchus exauricalatus* O. Hoffm. (Heine and Legère 1995: 118, 279). Among the Mijikenda of coastal Kenya the cognate name *mutsunga* refers primarily to *L. cornuta* (Maundu *et al.* 1999: 168).

- 21 In March 1995 ZCCFSP researchers working with farmers in Daya on the Mtambwe peninsula elicited the following list of leaf vegetables that are gathered by women: *kisamvu*, *mayugwa*, *mchicha*, *mtoriro*, *mchunga*, *mkwayakwaya* and *msambale* (Walsh 1995c: 27). This list is strikingly similar to the one given by Yusuf Juma, who hailed from the same area in the west of Pemba and the heart of the plantation zone. The last two wild plants on the Daya list were said to be eaten only in times of famine. *Mkwayakwaya* is the same as *kikwayakwaya*, *Stachytarpheta* spp. , included in Yusuf’s list (see above). *Msambale* is the herb *Lobelia fervens* Thunb. subsp. *Fervens* (Campanulaceae), the tender leaves and

stems of which are cooked and eaten (Williams 1949: 332-333; Ruffo *et al.* 2002: 432-433); it is also referred to by name in Sheikh Salim bin Mandhiri's poem *Njaa* (Whiteley 1958: 28).

- 22 The literature adds little to these two overlapping lists: Williams (1949: 40) provides a short list of wild species eaten in Zanzibar but does not specify whether Pemba is included. Very little research has been undertaken on the smaller plants of Pemba and their ethnobotany. Current knowledge suggests that cultivated plants are a much more important source of leaf and other vegetables than wild species, in times of relative plenty as well as during food shortages.

Tubers

- 23 Cassava is the most important of the root crops grown on Pemba; others including the greater yam (*Dioscorea alata* L. (Dioscoreaceae)), taro, and tannia are much less important. Cassava is known for its hardiness, and during the second world war the British colonial authorities in Zanzibar made it compulsory for farmers to cultivate more (Williams 1949: 343-344), and it is now one of Pemba's principal staples (Koenders 1992: 20). During and after the 1971-72 famine farmers themselves strove to increase and diversify food and especially tuber production. One of the consequences of this was a significant expansion of sweet potato cultivation in the far northwest of the island; another was the development of turmeric (*Curcuma domestica* Valetton (Zingiberaceae)) growing in the south-east (Walsh 1995b).

- 24 Despite their relative resistance to drought, cassava and other root crops are still vulnerable to extreme conditions. Mwamize Juma described how one of her household's two plots of cassava in Chwale had failed in 1971-72. Food was in such short supply that many people resorted to saving the cassava peelings that they would otherwise have thrown away. Hamad Bakari,¹⁴ who was then living in Wingwi, described how these were prepared:

Once you've finished peeling the cassava take the peel and remove the thin outer skin which is usually black or brown in colour. When you've taken this off the clean inner skin remains - take this, wash it and then spread it out to dry - and when it's dry pound it using a mortar and sift it until you've got flour. This flour is then used to make porridge (*uji*) or meal (*ugali*) as food for the family. We call it "stiri hali" [literally "conceal the state of things", i.e. a temporary expedient], meaning that you have to eat it to stay alive.

- 25 A similar description was given by Rabia Salim in Limbani, although she recalled washing and drying the peelings before removing the dark outer skin. But there was still not enough cassava to go round, and islanders turned instead to the collection and preparation of wild tubers.
- 26 Informants recalled the use of three species during the famine. One of these was *ndiga*, the bitter (or cluster, or three-leaved) yam, *Dioscorea dumetorum* (Kunth) Pax (Dioscoreaceae). Williams described this as a "climbing wild yam with prickly stems, found growing in high bush", and remarked that the "tubers which are fairly palatable are collected and eaten particularly in times of food shortage" (1949: 233). This yam is widely known as a famine food in East Africa, and is cultivated in some parts of West Africa (Maundu *et al.* 1999: 118; Ruffo *et al.* 2002: 260-261; Blench 2006: 226-228). Hamad Bakari gave the following account of how to prepare it:

Dig up the plant until you obtain the tuber, which isn't very different from that of *kiazi kikuu*, the greater yam [*Dioscorea alata*]. When you've got the tuber peel it

and then cut it into small pieces and wash it. After that make a carrying basket (pakacha), just as you do when preparing bie [*Typhonodorum lindleyanum*]. When the basket is ready put the pieces of ndiga inside it and take them to soak in plenty of water, in a stream or pond, or even better the sea. In fact a lot of people who live near the sea prepare this food even when there's no famine. The main reason for this is that if you soak this tuber in the sea it purifies it more quickly and also the taste is better than if you use fresh water like that from a stream. After removing the slices of tuber from the water take it home, boil some more water and wash it again. Then you can do whatever you want with it, drying it to make flour for porridge or meal, or cooking it with grated coconut and eating it like that.

- 27 This elaborate preparation is necessary: elsewhere in Tanzania the tuber is reported to have caused vomiting and death when eaten raw (Verdcourt and Trump 1969: 193; Maundu *et al.* 1999: 118).
- 28 Another species used was (*m*)*chochoni*, the wild yam, *Dioscorea sansibarensis* Pax (Dioscoreaceae), described as “a herb climbing up to 25 m high on other trees” (Ruffo *et al.* 2002: 267). According to Williams in Zanzibar it is found “growing chiefly in forest areas”. He continues:

The tuber is reported to be poisonous unless properly treated and is normally only used in times of food shortage. In Zanzibar it is cut into small pieces and boiled for some time and then washed in cold water. This process is repeated several times after which it is cooked in coconut juice. In Pemba it is treated differently, the cut slices being buried in soil or on the seashore and left for 3 to 4 days after which they are dug up and washed thoroughly, then spread in the sun to dry. The dried slices are pounded into flour and used as porridge. (Williams 1949: 233)¹⁵

Bi Halima, from Kinazini in the Micheweni area, recalled a quicker version of essentially the same process:

When you dig up the plant you'll find tubers similar to Irish potatoes: gather them up until you've got a lot of them together. Then peel them, removing the outer skin, and cut them into pieces and wash them thoroughly, taking them to a stream, pond or the sea to do so. Salt water is best. Soak them there for a whole day, and on the following day or even in the evening you can go and take them out. Then wash them again and cook them, and they'll then be ready to eat.

- 29 Again this is a very poisonous plant and eating unprepared tubers can result in vomiting, coma, and death (Verdcourt and Trump 1969: 196). Its use as a famine food in 1971-72 was also described by Salim Abdallah Subeit¹⁶ from Vitongoji, adding that the best time of year to harvest it is before the *masika* rains, when the plant has dried above ground. More recently consumption of *chochoni* has been referred to in newspaper articles about famine on the Micheweni peninsula. In both October 2006 and March 2008 different District Commissioners in Micheweni are said to have denied press reports of famine in the area, claiming instead that villagers were choosing to eat *chochoni* tubers because of the local belief that their consumption increases male potency (*nguvu za kiume*). In response reporters mocked the administrators' characterisation of *chochoni* as a kind of “traditional viagra (*viagra asilia*)”, countering with detailed descriptions of the harsh conditions that had led starving people to resort to eat these dangerously toxic wild yams (Anonymous 2006; Samwel 2006; Said 2008; Salim 2008).
- 30 Whereas both species of *Dioscorea* discussed above are also present in mainland East Africa, the third tuber that informants described is found in Zanzibar and other islands in the western Indian Ocean but not on the African continent. This is the wild aroid, *Typhonodorum lindleyanum*, called *mbi(y)e* and *mto(n)gonya* on Pemba and *mgombakofi* on

Unguja island and parts of south-east Pemba settled by Tumbatu dialect speakers from northern Unguja.¹⁷ Williams described it as follows:

A giant aroid with a banana-like stem 4 to 6 feet high, and very large arrow-shaped leaves. It occurs as a pure stand in undeveloped freshwater swamps in Zanzibar [Unguja] and Pemba, and its eradication is no easy matter. The leaves are as much as 3 feet long; the flower spathes white, bending over in fruit to form a large cluster of many brown, flattish seeds about 1 inch diameter. The seeds and roots are a common article of food, particularly during periods of food shortage. The former are prepared for cooking by rubbing with wood ashes to remove certain toxic matter. After boiling the seeds for 15 to 20 minutes, the water, which has become darkly coloured, is poured off, and the seeds washed in fresh water and boiled again. This process is repeated twice more, after which they are soft and free from toxic matter. They are then finally prepared for eating by boiling in coconut juice.

The rootstock is prepared by peeling, cutting into small pieces, washing, and drying in the sun, or preferably by boiling the sliced pieces until they are soft, and then drying in the sun. After drying, they may be stored indefinitely, and pounded into flour as required.

The flour is used by putting into boiling water and preparing as a thick paste "Ugali". Ugali prepared from flour of Mgombakofi is rather insipid and causes an itching sensation in the throat. (1949: 478-479)

- 31 Williams' notes on the preparation of the seeds and root were probably recorded on Unguja. Recalling the use of the aroid on Pemba during the 1971-72 famine, Mwamize Juma from Kiwani gave Jamila a much more detailed account. First she described the difficulty of obtaining the tuber, called *bie*:

A strong healthy man is needed to dig up the tuber, which isn't easy for a woman to do. When they've finished digging up *bie* a lot of men have bad backs or even chest pains. Every morning men went down to the fields to do this work – and you'd hear them say that when they dug and withdrew their hoes they'd detect a sound coming from the tubers. This was the plant asking them "Are you married?", in other words warning that after digging *bie* during the day you shouldn't try to make love with your wife at night. And if you're not married don't bother right now, because you won't be able to do anything with your bride!

Then she described the preparation of the tuber:

Once you've got the tuber peel it like cocoyam, cut it into small pieces and wash them. After that make a *pakacha* or basket of palm leaflets, and put the sliced and washed *bie* inside it. Then go down to a stream and take a strong stake and drive it through the basket so that it sticks out of the other side. Wade into the water and bury the stake until you're certain that however strong the current it won't wash the basket away. Make sure too that a good length of the stake is visible above the water. When you've done this go home and wait for two or more days – this isn't a food that can be prepared and eaten in a single day. Then go back to the stream and you'll find that the *bie* has become less active – all that time it will have been frothing as if it was soap. When there's no more of this froth you'll know that the tuber has been purified and its poison leached out.

Warning: cooking the tuber without following these steps can result in intoxication, diarrhoea, severe vomiting, and possibly instant death.

How to cook the tuber: boil it in water, and when it's cooked pour all the water away and wash it in cold water. Then add coconut milk and boil it again with coconut and salt, and when all of the water has gone take it off the fire. It's now ready to eat. If all the poison in the tuber has been leached out then you can eat it without any problem. But if just a little of the plant's poison remains then you're likely to become very drunk, have diarrhoea and vomit, and perhaps even lose your life. A lot of people fell ill while others felt as though their throats were being pierced by thorns when they ate the tuber.

Nonetheless they had to eat it in order to stay alive.

The tuber was also made into porridge.

How to prepare bie porridge: after taking your basket out of the stream take some pieces of bie and cut them into very thin slices, place them on a tray, and then put them out to dry in the sun. After two days or so the slices will have dried – especially at this time of year when the sun is very hot. When they're dry then pound them (this is usually very easy to do) and sift with a sieve until no more flour can be extracted. Finally, when you've obtained this flour, you can make porridge.

Finally Bi Mwamize described the seeds, *tongonya*, and how to prepare them:

On top of the plant there's a kind of fruit – I don't know if that's the right name for it – which emerges from between its leaves, and grows like the inflorescence and bud of a banana. The fruit and spadix grow very quickly, and after two or three days it bends over and droops onto the plant itself. Depending on the condition of the plant and whether it has grown well, then it might have more than one inflorescence, in other words you can find a single plant with two or three of these fruits.

How to prepare *tongonya*: inside the fruit, if you split or cut it open, you'll find seeds that look like kidney beans, though the latter are smaller in size. The seeds are round in shape, a little broader than beans, and brown on the outside. Inside they are white in colour, and this is the part that's eaten. First cut the fruit and take out all of the seeds: seven or eight fruits can supply enough seeds to feed two or three people, depending on the size of your family. When you've collected the seeds remove the seed coats from them one by one – this is quite a big job and it might take you four or five hours to do it. Then take some ash – the usual kind that remains after burning firewood [...] – and put it into a bowl with the seeds. Rub them together vigorously for an hour so before washing the seeds thoroughly in water. When you've done this people say that the poison has gone. Afterwards boil the seeds in a good quantity of water until they're cooked, and then pour the water away and wash them in cold water. Strain them with coconut milk, add salt, and cook until the milk is dry, and then they're ready to eat. To sum up: this isn't a particularly desirable food, but is eaten to stay alive. The seeds don't have a nice taste and however you cook them don't taste like cow peas or kidney beans, but more like cassava that has over-matured.

- 32 Salim Abdallah Subeit, from Vitongoji, also described the use of the tubers and seeds of *T. lindleyanum* during the 1971-72 famine, recalling them being eaten with *dagaa*, small fry. As Bi Mwamize made clear, both the tubers and seeds require careful preparation to avoid poisoning, and these are not foods that people would normally seek out.
- 33 Informants did not mention other edible wild tubers in their accounts. East African arrowroot (*Tacca leontopetaloides* (L.) Kuntze (Dioscoreaceae)), *uwanga jike* in Swahili, grows wild in Zanzibar as well as on the mainland (Ruffo *et al.* 2002: 642-643). Williams does not state whether the following description refers to Unguja, Pemba, or both islands:
- The local method of preparing it is to dig the tubers when the plants are without leaves, reduce them to a state of pulp by grating on rough stones, then wash and strain the pulp in a piece of cloth; the water with the starch is collected and allowed to settle, after which the water is poured off. More water is added and the process repeated several times, the starch is then dried and ready for use. It is prepared either by simply parching in a pan, by adding water and heating when it forms a kind of tapioca, also as porridge (*boko boko*). The tubers are acrid, and inedible unless treated in this way. (1949: 459-460; cf. Sacleux 1930: 1016)
- 34 Water lilies are a common sight on the ponds of eastern Pemba and also have edible tubers. The tubers of the white lotus, *Nymphaea lotus* L. (Nymphaeaceae), and the blue lotus, *N. nouchali* Burm.f. var. *caerulea* (Nymphaeaceae), both called *myungiyungi* in Swahili, are eaten by some people in Kenya and mainland Tanzania (Maundu *et al.* 1999:

183; Ruffo *et al.* 2002: 478-479). Williams only refers to their use in Zanzibar as an ingredient in local medicinal preparations (1949: 382).

Discussion: ethnobotany and history

- 35 Recollections of the 1971-72 famine on Pemba make it clear that people were forced to eat whatever food they could obtain, regardless of its usual role in the local diet. Cultivated plants were an important source of famine food: cassava, coconuts, mangoes, and different kinds of greens included. Some of these plants were used or prepared in ways that they were not normally, for example cassava peelings, immature coconuts, and unripe mangoes. All of them were eaten as a main dish, often without accompaniment and as the only significant meal of the day. Islanders' access to a range of cultivated plant resources during the famine reflects a long history of agricultural development and crop introductions. A remarkable variety of cultigens and cultivars is grown on the East African coast, and Pemba is no exception, despite having become over-reliant on cloves in the 19th century and no longer self-sufficient in food production.
- 36 Although many species of wild fruit are available on the island, and many known to be picked and eaten by both children and adults, they did not feature in the accounts that we recorded, perhaps because they were more likely to provide occasional snacks than regular meals. Most if not all of the greens that people remembered eating were ordinary items of food rather than wild plants that were only resorted to in times of food shortage. Daya farmers' categorisation of *Stacytapheta* spp. and *Lobelia fervens* as famine foods does not mean that this is everywhere or has always been the case, and Williams (1949: 333, 453) certainly did not characterise their use in this way. This kind of categorisation, however, does suggest that some species are more likely to be eaten during emergencies, and it is perhaps more helpful to think of a sliding scale of preferences rather than a sharp distinction between foods only used in one context or the other (cf. Fleuret 1979: 87; 1986: 225-226). The distinction between wild and cultivated species is equally fuzzy in some cases, and there are clearly some plants which are both.
- 37 The wild tubers resorted to by Pembans in 1971-72 and during more recent food shortages are more often than not used as famine foods, though there are also exceptions to this.¹⁸ Elsewhere in the region there are foragers and forager-farmers who make more regular use of wild species, for example the Hadza of northern Tanzania (Vincent 1985) and the Mikea of south-eastern Madagascar (Stiles 1998). *Dioscorea dumetorum* and *D. sansibarensis* are widely used as famine foods by farmers in East Africa (Maundu *et al.* 1999: 118; Ruffo *et al.* 2002: 260-267), and it is likely that the first agricultural settlers of Pemba brought knowledge of these yams with them from the mainland. Indeed the local Swahili name for *D. sansibarensis*, *ndiga*, is cognate with the name used for *D. dumetorum* and related species in many languages in eastern Kenya and Tanzania. Similar methods of preparation are described throughout this area.
- 38 The use of the seeds and tubers of *Typhonodorum lindleyanum* is intriguing, given that this wild aroid is only found on other islands in the western Indian Ocean, including Madagascar. Did the early inhabitants of Zanzibar learn how to use this plant themselves, and did they or others then carry this knowledge to other islands? Or were they taught by visitors from across the Indian Ocean? The Pemban name for the tuber, *bie*, is possibly derived from the same Austronesian source as the Malagasy name, *vi(h)a* (cf. Beaujard

1998: 839). We know that Austronesians probably brought bananas, taro and other crops to East Africa, and one explanation for the presence of the wild banana (*Musa acuminata*) on Pemba is that it was introduced as part of the same package (De Langhe and de Maret 1999: 379). We also know that some animal and plant species must have been carried from Africa to Madagascar (Blench 2007; Walsh 2007). One of these is the false cardamom, *Aframomum angustifolium*, whose Malagasy name, *longòza* (Beaujard 1998: 478-479), is of Bantu origin and probably cognate with the old name of Unguja (< **lunguja*).

Conclusion: the need for further research

- 39 The use of wild and cultivated plants on Pemba as famine foods has evidently evolved in tandem with changes in subsistence strategies and farming systems. Islanders' vulnerability to famine and food shortages has also changed with major shifts in the political economy of agricultural production and exchange, and the economic circumstances and political decisions which led to the famine of 1971-72 illustrate this. The accounts of the famine that we recorded in 1994-96 provide no more than a snapshot of responses to the severe food shortages that occurred at that time. Systematic research is needed to answer the many questions that this raises about the past and present use of plants as famine foods, and about the role that food shortages have played in the history of Pemba and the East African coast and islands. Our knowledge of the botany and ethnobotany of Pemba and other places in the region is very uneven, and there is an urgent need for data to be recorded and published before some of it is lost. The recurrent food shortages in the north-east of Pemba remind us that local knowledge of plants and plant foods can be vital to people's health and survival. And the claims and counter-claims that have been made about the situation in Micheweni suggest that the political conflicts and myopia that have fuelled food shortages on "The Green Island" are not going to disappear anytime soon.

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NOTES

1. From the poem *Njaa*, "Hunger", by Sarahani bin Matari Ilhudhuri (Whiteley 1958: 51-52).
2. The history of his famine and its causes and consequences remains to be written, and deserves fuller treatment than can be given in this paper.
3. ZCCFSP (1991-96) was funded by the British government and managed by the Natural Resources Institute, working in collaboration with the Ministry of Agriculture, Livestock and Natural Resources in Zanzibar.
4. Jamila was a Zanzibari woman in her early 30s who asked not to be identified because of the political references in some of the work that she did for me. She was not a project employee.
5. Interviewed by Jamila in Wete (date not recorded).
6. Interviewed by me during a field trip to the north of Pemba on 25 October 1994.
7. Interviewed by Jamila in Wete on 25 March 1996.
8. Interviewed by Jamila in Wete on 23 March 1996.
9. Interviewed by me in Wete on 22 November 1994.
10. Interviewed by Jamila in Wete on 26 March 1996.
11. Information on the edibility of wild bananas was given to me by Chum Ali Hamisi (Wete, 3 October 1994) and Salim Abdallah Subeit (Wete, undated conversation).
12. Cf. Sacleux, perhaps referring to practice on Unguja island: « La graine mise à germer produit en qq's semaines une racine unique *mčelema wa m*, qui se mange soit rôtie sous la cendre, soit cuite à l'eau après avoir été pelée » (1939 : 634, also 533). According to Heine and Legère (1995 : 255) the fruit may be eaten but is not much liked.
13. According to Sacleux the fruits are also brought to Zanzibar from the Comoros: « Elle arrive à Zanzibar sèche, coupée en deux. On la met à macérer dans l'eau cinq ou six jours, puis on la fait sécher. Elle se mange cuite à l'eau ou rôtie sous la cendre » (1939 : 871).
14. Interviewed by Jamila in Wete on 10 February 1995.

15. Compare Sacleux, defining Unguja and Tumbatu dialect *chochoni* (*čočoni* in his orthography): “ Bulbille aérien de l’igname vénéneuse *mčočoni*. Il est arrondi, lisse, brillant, d’un brun violacé, sans amertume. Sa poudre, mêlée à celle de *datura mranaha* est employée pour tuer les rats et les oiseaux destructeurs. En temps de famine, on le mange en *ugali*, après l’avoir desséché, exposé dans un *pakača* à l’action dissolvante de l’eau douce pendant 6 jours puis de l’eau de mer 4 jours, et séché à nouveau avant de piler et faire cuire ” (1939 : 145, also 534). As Sacleux intimates, *mranaha* is a generic name for thorn-apples, *Datura* spp. (Solanaceae), including the introduced *D. metel* L., which is known as an intoxicant and poison on Unguja (Williams 1949 : 225-226).
16. Interviewed by me in Wete on 28 February 1996.
17. On Pemba *mgombakofi* is more widely used as a name for the wild banana, *Musa acuminata*.
18. The seeds of *Typhonodorum lindleyanum* are, for example, reported to be eaten at all times and not just during periods of famine (Ahmad Kipacha, personal communication, 19 January 2009).

ABSTRACTS

Relatively little has been written about the adaptations of the Swahili-speaking people to the terrestrial environments in which they live, and even less about their responses to famine. Despite being dubbed “The Green Island”, parts of Pemba (in the Zanzibar archipelago) are periodically subject to drought, while the whole island has suffered the effects of man-made famine. This paper, based primarily on recollections of the Pemba famine of 1971-72, describes the use of wild and cultivated plants as famine foods on the island. During the famine people were forced to eat whatever food they could obtain, regardless of its usual role in the local diet. Cultivated plants were (and are) particularly important sources of emergency food: unorthodox items such as cassava peelings, immature coconuts, and unripe mangoes; and a range of leaf and other vegetables that are eaten in times of plenty as well as during food shortages. The most significant wild resources were three kinds of tuber: the bitter yam *Dioscorea dumetorum* and its relative *D. sansibarensis*, and the seeds and rootstock of the aroid *Typhonodorum lindleyanum*. All of these are highly toxic and require careful preparation before they can be eaten. The use of these and other plants on Pemba as famine foods has evidently evolved in tandem with changes in subsistence strategies and farming systems. Islanders’ vulnerability to famine has also changed with major shifts in the political economy of agricultural production and exchange, and the events which culminated in the famine of 1971-72 illustrate this. Knowledge of famine foods can be vital for survival, and is essential in the marginal areas of Pemba that continue to experience periodic food shortages.

On a relativement peu écrit sur les adaptations des populations swahiliphones aux environnements terrestres dans lesquels elles vivent, et encore moins sur leurs réponses à la famine. Bien que l’île ait été surnommée “ l’île verte ”, des zones de Pemba (située dans l’archipel de Zanzibar) sont périodiquement sujettes à la sécheresse, tandis que l’île entière a eu à souffrir des effets de la famine du fait de l’homme. Cette étude, fondée principalement sur les souvenirs de la famine de Pemba de 1971-1972, décrit l’utilisation dans l’île de plantes sauvages et cultivées comme plantes de disette. Au cours de la famine, les gens étaient conduits à consommer tous les types de nourriture qu’ils pouvaient obtenir, indépendamment de leur rôle habituel dans le régime alimentaire local. Les plantes cultivées étaient (et sont) des sources de nourriture d’urgence particulièrement importantes : des éléments aussi peu orthodoxes que les pelures de

manioc, les noix de coco immatures et les mangues vertes ; et toute une gamme de feuilles et autres légumes consommés aussi bien dans les périodes d'abondance que dans les longues périodes de disette. Les ressources sauvages les plus importantes étaient trois sortes de tubercules : l'igname amère *Dioscorea dumetorum* et sa proche parente *D. sansibarensis*, ainsi que les graines et le rhizome de l'Araceae *Typhonodorum lindleyanum*. Chacune d'elles est hautement toxique et requiert une préparation méticuleuse avant consommation. Leur usage, aussi bien que celui d'autres plantes comme nourriture de disette à Pemba, a manifestement évolué en tandem avec les changements dans les stratégies de subsistance et dans les systèmes de production agricole. La vulnérabilité des insulaires à la famine a également changé avec des modifications majeures dans la politique économique de production et de commerce agricole - comme l'ont montré les événements qui ont culminé lors de la famine de 1971-1972. La connaissance des aliments de disette peut être vitale pour la survie, et elle est essentielle dans les zones marginales de Pemba qui continuent à subir des disettes périodiques.

INDEX

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