

# **Champion species help to tackle main nutritional problems in Central, Southern and Lusaka provinces of Zambia**



## Local food plants for nutrition Series #2



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## Acronyms

ASOCH	Asociación de Organizaciones de los Cuchumatanes
CTDT	Community Technology Development Trust
CSI	Cognitive Salience Index
FFS	Farmer Field School
FOVIDA	Fomento de la Vida
Li Bird	Local Initiatives for Biodiversity, Research and Development
NAFRI	National Agricultural and Forestry Research Institute
NUS	Neglected and Underutilized Species
PELUM	Participatory Ecological Land Use Management
SD=HS	Sowing Diversity = Harvesting Security
ZAAB	Zambia Alliance for Agroecology and Biodiversity

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## Foreword

This document shares the plant species findings of the baseline survey conducted between 2019-2021, during the second phase of the Sowing Diversity = Harvesting Security (SD=HS) programme (2019-2023). The results of the baseline survey are complemented by the main findings of the diagnostic exercises conducted by SD=HS' Farmer Field Schools (FFS). Both activities are part of SD=HS' work on Local Food Plants for Nutrition. SD=HS is a global program, and our work on local food plants is currently implemented by Oxfam Country Offices and implementing partners in seven countries. These partners are the National Agricultural and Forestry Research Institute (NAFRI) and the Agricultural Research Center (ARC) in Laos, the Local Initiatives for Biodiversity, Research and Development (Li-Bird) in Nepal, the Asociación de Organizaciones de los Cuchumatanes (ASOCUCH) in Guatemala, the Participatory Ecological Land Use Management (PELUM) and the Eastern and Southern Africa Small Scale Farmers' Forum (ESAFF) in Uganda, the Zambia Alliance for Agroecology and Biodiversity (ZAAB) in Zambia, the Community Technology Development Trust (CDTT) in Zambia and Zimbabwe, and the Fomento de la Vida (FOVIDA) in Peru. SD=HS is coordinated by Oxfam Novib.

The analysis of the baseline and FFS diagnosis conducted by farmers aimed at establishing the local and regional nutritional and agro-ecological context in the communities in which the Farmer Field Schools (FFS) on Nutrition and Local Food Plants were implemented. The baseline served to advise and guide the development of a country-specific FFS curriculum and the implementation of FFS activities, by informing FFS participants, collaborators, and other stakeholders, about the potential role of local food plants in improving local diets and reducing the food scarcity period.

This Briefing Note is part of a series of briefing notes summarizing the program's findings. An additional publication includes the "Improving diets and reducing food scarcity with the help of local food plants in Central, Southern and Lusaka provinces of Zambia" that focuses on the seasonal variations in the diet and local food plant consumption. 'Champion species help to tackle main nutritional problems in Central, Southern, and Lusaka provinces of Zambia' presents the results of the plant species analysis and provides a recommendation of key nutritious species to be promoted locally. In the next exercise, the comparison of the baseline survey and FFS diagnosis results across the seven program countries will be consolidated in global SD=HS publications.

We are grateful for the funding support from the Swedish International Development Cooperation Agency (Sida).

We hope this document contributes to increased attention on the role of local food plants for healthy and affordable diets, and the nutrition security of indigenous peoples and smallholder farmers.



# 1 Introduction

Food scarcity periods and diets with poor diversity and quality are common aspects of food insecurity that are manifest in many rural communities. Local food plants can contribute to the elimination of many existing malnutrition problems that exist in the developing world<sup>1</sup>, by reducing food scarcity periods, and by adding nutritional value to local diets throughout the year.

From approximately 30,000 edible plant species that have been identified, and more than 7,000 that have been consumed as food during the history of humanity, nowadays only 30 crops account for 95% of human food energy intake, three of which (rice, wheat, and maize) cover 60% of our caloric needs<sup>2</sup>. However, the numerous edible plants our planet hosts can address many forms of malnutrition by diversifying local diets and mitigating production risks and seasonal shortages. In addition, they can provide rural households with added income from their commercialization, and strengthen the cultural identity of the producers.

Yet the availability of local food plants, and especially neglected and underutilized species (NUS), is decreasing worldwide, due to alarming changes in land use, globalization, fast-food diets, and the loss of biodiversity and traditional knowledge. Although local food plants have been forgotten in international food policy and research, they could still substantially contribute to healthy, affordable, and sustainable diets. For example, it has been documented that in Asia wild food plants are a key source of vitamins, minerals, secondary metabolites (such as alkaloids and phenolics), and essential oils<sup>3</sup>. Similarly in Africa, indigenous greens have been termed ‘super vegetables’ for their potential to contribute to better nutrition<sup>4</sup>. Fortunately, many communities still possess local knowledge of minor crops, semi-domesticated and wild plants that could help to diversify nutrient sources for rural households and increase the food availability during food scarcity periods.

The objectives of SD=HS’ work on Local Food Plants for Nutrition are to improve the diversity and quality of the diet and to reduce the length and severity of the food scarcity season, by increasing the intake of nutritious food based on the use of local biodiversity and improved management of local food plants. This is crucial for ensuring the nutrition of indigenous people and smallholder farmers, but requires answers to the following questions:

- What is the farmer’s knowledge of local food plants, regarding their availability, gender roles, use, and management?
- What are the local food plants that can play a major role in reducing the length of the food scarcity period, and that can improve the diversity and quality of the local diet?
- Which plants are a key source of nutrients needed to address major malnutrition problems in the region?

This Briefing Note is an attempt to answer these questions, aiming at providing information, raising awareness, stimulating discussions, and triggering feedback from a wider audience of stakeholders on the role of local food plants in improving nutrition and ensuring more healthy and affordable diets. It also aims to provide evidence to support policies and legislation that promote diverse and healthy diets through the improved use of biodiversity in the environment.

## 1.1 Local food plants, working definition

Local food plants include all plants known and used by local communities as food. Local food plants involve a wide range of species, ranging from domesticated (regional staples and minor crops), to semi-domesticated species and wild food plants. Local food plants not only grow in agricultural fields (where they can grow e.g. as side crops or weeds), but also in various other environments such as home gardens, forests, roadsides, aquatic ecosystems, riversides, grasslands, and mangroves. The diversity of local food plants offers a key opportunity for diversifying the diet and the nutrient intake for rural households. Extensive knowledge of local food plants is often held by indigenous peoples and smallholder farmers and is closely related to the biodiversity of their surrounding environments. Local food plants are also part of people’s cultural identity and their use is embedded in traditional social relations and knowledge systems. Local food plants are an important component of agrobiodiversity<sup>a</sup>.

<sup>a</sup> Agrobiodiversity is a broader concept, which – according to the FAO (1998 definition) and CBD (COP 5 Decision V5) – not only includes major staple crops, local food plants, livestock, and other animals consumed as food but also non-harvested species in the farming systems and surrounding environments that support the production of food (e.g. soil microbiota and pollinators).

Neglected and underutilized species (NUS) form a key component of local food plants. There is little or no research into NUS species, nor commercial interest or interest in their ex-situ conservation. In addition, there is a lack of technical knowledge and access to seeds and other plant parts that would be necessary for their propagation, multiplication, and sustainable harvesting. The lack of interest in NUS mainly results from the general worldwide trend towards western less-diverse diets, but also from the fact that those, for whom these species are particularly important, are usually marginalized. Some NUS are present in local markets, very few in national markets, whereas none are key commodities in global markets. The concept of NUS is bound to time, space, and culture. This is why we prefer to use the wider term Local Food Plants. This term emphasizes local differences regarding knowledge and utilization of a particular species that do provide food under given agro-ecological conditions and culture

## 2 Methodology

### 2.1 Baseline survey

The plant baseline survey included five steps: (a) the household survey, (b) the pre-selection of important local food plants, (c) the botanical identification and ethnobotanical description of pre-selected species, (d) the review of their nutritional values, and (e) the selection of ‘Champion Species’<sup>b</sup>.

The household (a) survey took place from 2019 to 2021 at two different times (scarcity season and sufficiency season) in four districts [Table 1]. Data was collected by local enumerators who speak the local language. They were trained by the Community Technology Development Trust (CTDT) and pilot-tested the questionnaire before collecting the data. The household survey was conducted in a representative sample of communities, representing each agro-ecosystem and ethnic group in the project region. In each selected community, a random household sampling equivalent to 30% of all households living in the community took place to ensure statistical representativeness. For villages with 30 to 100 households, a sample of 30 households was used; for villages with 30 or fewer households, all households were interviewed. Households that have been living for less than one year in the community, or households that are not engaged in farming were excluded from the sample. All informants participated freely and with prior informed consent.

**Table 1.** Data collection periods during scarcity and sufficiency seasons in the four surveyed districts

Districts	Scarcity season (round 1)	Sufficiency season (round 2)
Shibuyunji	December 2019 – January 2020	August 2021
Rufunsa	March 2021	September – October 2021
Chirundu	March – April 2021	September – October 2021
Chikankata	July – October 2020	December 2020 – February 2021

The household survey<sup>c</sup> provided information on the main crops cultivated, on the most known local food plants by men and women (free listing module), and distinguished between local food plants acquired during the food scarcity and sufficiency periods. The results of the free listings were analyzed by calculating the cognitive salience index (CSI). The CSI combines the frequency and the order of mention across men’s and women’s lists for each plant species and reflects the knowledge of a specific plant (the higher the CSI, the higher the knowledge of the specific plant)<sup>5</sup>. In addition, men and women were asked to identify the plants that they consume in particular during the food scarcity season<sup>d</sup>. This exercise yielded a list of local food plants based on the knowledge that was shared by community members.

<sup>b</sup> The term *Champion Species* used in this Briefing Note is only to be loosely defined as to include those species that are of particular importance in a given community or type of agroecosystem for enriching the diet and improving nutrition security, particularly during the food scarcity period.

<sup>c</sup> The detailed explanation of each module, including the survey questionnaire, are accessible in the *Baseline Tool* document (<http://bit.ly/2WSHfTf>). The tool was revised and agreed upon with all partner organizations.

<sup>d</sup> More information on how the plants consumed during the food scarcity were prioritized is found in the Briefing Note ‘Reducing the food scarcity season with local food plants’.

## 2.2 Local food plants

As part of the baseline analysis, a list of prominent food plants for each country was created based on the CSI and frequency of mentioning for each species (free listing module), as well as based on each species' availability during food scarcity (plants in food scarcity module). More specifically, these lists – one for each country – included at least 35 food plants that were chosen based on the number of mentions and their use during the food scarcity periods. Food plants in the list were assigned a red color shade indicating their frequency of use during the food scarcity period. The darker the color red the more often these food plants were used during periods of food scarcity. These initial lists were then shared with the corresponding country partners who were asked to compose a shorter list of a maximum of 30 species taking into account the following:

- Food plants that are key for the food scarcity period (e.g. dark red)
- Food plants that were selected by farmers for FFS work
- Food plants that were considered NUS by country partners
- NUS food plants that are included in community seed banks
- Food plants that represent different food groups (cereals, tubers, roots, vegetables, fruits, legumes, nuts and seeds)
- Other criteria that are important according to the local context
- Important food plants during the food sufficiency periods (to cover the whole year)

After the countries had composed their lists of selected species, an Excel table file – for each country – was created to facilitate the collection of information that was required for the nutritional evaluation and the composition of the species sheets. The Excel table files were then sent to the country partners so that they could fill in all the information they could provide regarding the food plants they had selected. The Excel table intended to gather the following:

- The scientific name of selected food plants
- The English name of selected food plants
- The local name in the local script of selected food plants
- Synonyms of selected food plants
- Inclusion in FFS work of selected food plants
- Botanical information (NUS, center of origin, level of domestication, life cycle, growth form) of selected food plants
- Ethno-botanical information (edible parts, popular ways of preparation, recipes, place of acquisition, seasonality, use in times of food scarcity) of selected food plants
- Contribution to food groups of selected food plants
- Photos of selected food plants

After the tables had been received, the nutrition information of each one of the food plants was collected using the scientific name of the plant. Information was investigated at 100g of the edible portion of each selected food plant, with specific interest in the edible parts and ways of preparation that the countries had indicated in the Excel table file. The sources of information that were investigated for the nutritional analysis of the selected species primarily included the national Food Compositions Tables (FCTs) or other regionally relevant FCTs available to the country partners, and the FAO InFoods databases. When a species was not found in these datasets, a complementary search for nutritional information was conducted in scientific literature available in Google Scholar.

Finally, the 'champion species' – a shorter list of the most important local food plants – was put together based on the following selection criteria:

- The food plant is not a major crop
- There is sufficient nutritional literature available for the food plant
- The food plant is high in micronutrients
- The food plant is available during the food scarcity period or throughout the year
- The food plant is considered a NUS species by country partners (CTDT)



## 2.3 FFS diagnostic exercises

The FFS diagnosis took place in 2021 for 19 FFS established during that year in the Central, Southern, and Lusaka provinces of Zambia. Data was collected by FFS facilitators who speak the local language. They were trained on the FFS approach for the work on nutrition and local food plants, including the conduction of diagnostic exercises and FFS activities, by the Community Technology Development Trust (CTDT) as part of the training of trainers. All FFS members participated freely and with prior informed consent.

This Briefing Note presents the results of the malnutrition problem tree, decision-making with respect to intra-household food distribution, and a timeline analysis of local food plants and nutrition exercises from 19 FFS for which we had complete and good-quality data. The analysis of the data was a descriptive exercise, showing patterns, frequencies, and means, where applicable. The FFS diagnostic exercises are detailed in the [illustrated module 'Diagnostic Phase'](#) of the FFS Field Guide, which also includes the forms where results were reported. More information on the FFS work on Nutrition and Local Food Plants is provided on the [SD=HS website](#) and is summarized in the [Online Course](#), accessible through the SD=HS website.

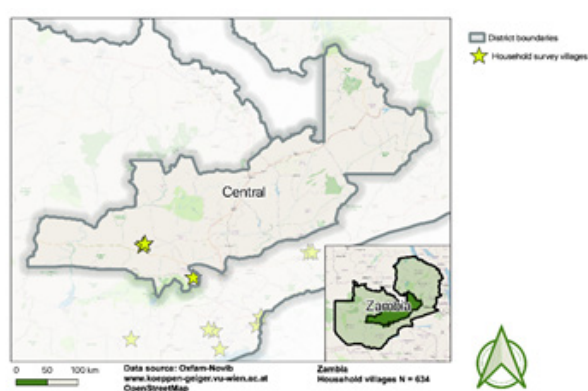
## 2.4 Household and FFS locations

In total, data were collected from 634 households for the baseline survey and 19 FFS for the Diagnostic exercise. Table 2 presents the distribution of the households and FFS surveyed across four districts of the Central, Southern, and Lusaka provinces of Zambia.

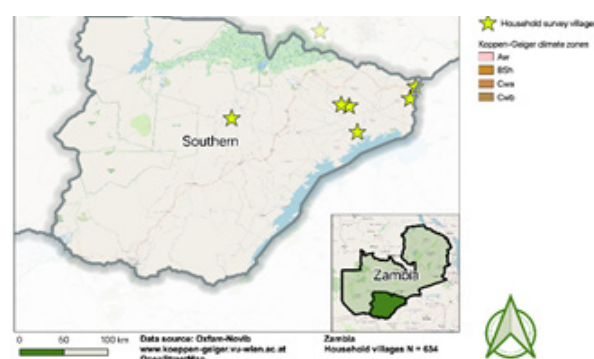
**Table 2.** Distribution of sampled households and FFS across the four districts, involved in the activities indicated

Districts	FFS diagnostic exercise		Baseline survey	
	Number of FFS	Percentage of total number of FFS	Number of households	Percentage of total number of households
Chikankata	5	26%	98	15%
Chirundu	5	26%	125	19%
Rufunsa	4	21%	119	18%
Shibuyunji	5	26%	292	46%
Total	19	100%	634	100%

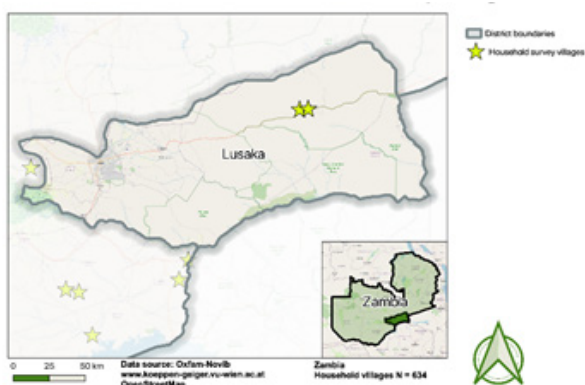
Figures 1, 2 and 3 below show the location of the surveyed households within the different provinces of Zambia



**Figure 1.** Map indicating the location of households in Central province



**Figure 2.** Map indicating the location of households in Southern province



**Figure 3.** Map indicating the location of households in Lusaka province

## 3 Results

### 3.1 Main crop listing by indigenous peoples and smallholder farmers

The baseline survey identified 89 different plant species. All but one (88) of these crops were grown for consumption [Table 3]. In addition to the purpose of household consumption, 76% of the crops were partly grown for sale, and 26% were partly grown for barter or exchange.

**Table 3.** General purpose of 89 different crops grown in implementing communities

Purpose	Number of crops	Percentage of crops
Sale	68	76%
Household consumption	88	99%
Barter/ exchange	23	26%
Sharing	3	3%
Other	5	6%

*\*The results come out the first round of the baseline household survey, in which 634 household participated. In total, 1 value (household) was missing (N=633). Percentages reflect the number of the crops mentioned to be grown for each purpose, divided by the total number of different crops grown (N=89).*

**Annex 1** presents the full list of these crops and the frequencies in which they were mentioned by men and women. The most popular crops identified were the major staple crops maize (89%), groundnut (57%), pumpkin (49%), and sweet potato (41%). Local Food Plants were mentioned with lower frequencies.

**Annex 2** presents the results from the resource flow map exercise implemented during the FFS diagnostic module. It contains the plants that were mentioned in the 19 FFS and the characteristics that the participants provided regarding the place they are usually found, the family member that usually harvests them, their edible parts, their seasonal availability, their perceived nutritional/medicinal value, whether there is cultural reluctance regarding their consumption, and their stress-tolerance qualities. The data in this Annex provides additional information to the data in Annex 1.

**Annex 3** presents the results from the management and domestication exercise implemented during the FFS diagnostic module. It contains the plants that were mentioned in the 19 FFS and the characteristics that the participants provided regarding their level of domestication, their management practices, and the environment they can usually be found, as well as the place from which they usually acquire seeds and/or planting materials. The data in this Annex provides additional information to the data in Annex 1.

### 3.2 The Champion Species

Table 4 presents, in alphabetical order, the list of champion species and some of their botanical and ethno-botanical characteristics, such as their lifecycle, level of domestication, and whether they are considered a NUS by CTD, our partner organization in Zambia. The species' CSI scores – from the free listing module of the baseline survey – are also included in the tables.

**Table 4. Champion species identified and their botanical/ethnobotanical characteristics**

Scientific name	English name	Local name	CSI - men	CSI - women	Life cycle	Level of domestication	Considered a NUS
Abelmoschus esculentus	okra	okra	0.04	0.11	annual	domesticated	No
Amaranthus cruentus	wild spinach	bondwe	0.08	0.08	annual	semi-domesticated	No
Bidens pilosa	black jack, Spanish needle	kanunkha, kampuku	0.06	0.25	annual	semi-domesticated	Yes
Carica papaya	papaya	paw paw	0.00	0.11	Annual, perennial	domesticated	No
Cleome gynandra	spider flower; cat's whiskers	lubanga	0.01	0.01	annual	semi-domesticated	Yes
Dioscorea hirtiflora	wild yam, guinea yam	busala	0.02	0.02	perennial	wild	Yes
Dioscorea villosa	water yam	impama	0.02	0.02	annual	wild	Yes
Hibiscus sabdariffa	roselle	lumanda	0.05	0.10	annual	domesticated	No
Manihot esculenta	cassava, tapioca	cassava	0.03	0.04	perennial	domesticated	No
Phaseolus vulgaris	common bean, haricot	bean	0.25	0.16	annual	domesticated	No
Psidium guajava	guava	guava	0.03	0.13	perennial	domesticated	No
Rhoicissus tomentosa	African grape, bush	malamba lamba	0.01	0.01	perennial	wild	Yes
Sesamum sesamoides	false sesame	katate	0.05	0.00	annual	wild	Yes
Thespesia garckeana	African chewing gum	matobo	0.13	0.07	perennial	wild	Yes
Vigna unguiculata	cowpea	cowpea	0.11	0.27	annual, perennial	domesticated	No

\* *Sutrop CSI reflects the knowledge of a specific plant (the higher the CSI, the higher the local knowledge of the specific plant species).*

It should be noted that apart from a number of species that are typical for Southern Africa, the majority of the Champion Species are not considered NUS by CTD, and some of them even consist of major global species (e.g. cassava, common bean, papaya, and cowpea). This shows how a locally composed list of Champion Species in fact brings together widely diverging crop histories.

Table 5 presents, in alphabetic order, the same list of champion species, but now with their contribution to diets and nutrition. More specifically, their common ways of preparation are presented, as well as their contribution to food groups and micronutrient needs, and their role during food scarcity.

**Table 5. Champion species identified and their contribution to nutrition**

Scientific name	English name	Ways of preparation/preservation	Food group the plant belongs to	Role in food scarcity	Micronutrient content
Abelmoschus esculentus	okra	boiled, fried/stir-fried, dried/dehydrated	vegetables	important	very nutritious
Amaranthus cruentus	wild spinach	boiled, fried/stir-fried, steamed	vegetables	unknown	super nutritious

<i>Bidens pilosa</i>	black jack, spanish needle	boiled, fried/stir-fried, dried/dehydrated	vegetables	quite important	nutritious
<i>Carica papaya</i>	pawpaw	raw	fruits	unknown	very nutritious
<i>Cleome gynandra</i>	spider flower; cat's whiskers	boiled, dried/dehydrated	vegetables	unknown	very nutritious
<i>Dioscorea hirtiflora</i>	wild yam, guinea yam	raw, boiled	tubers and roots	super important	nutritious
<i>Dioscorea villosa</i>	water yam	boiled	tubers and roots	super important	nutritious
<i>Hibiscus sabdariffa</i>	roselle	boiled, fried/stir-fried, dried/dehydrated	vegetables	unknown	very nutritious
<i>Manihot esculenta</i>	cassava, tapioca	boiled, dried/dehydrated	tubers and roots	important	very nutritious
<i>Phaseolus vulgaris</i>	common bean, haricot	boiled	legumes	super important	very nutritious
<i>Psidium guajava</i>	guava	raw	fruits	important	very nutritious
<i>Rhoicissus tomentosa</i>	African grape, bush	raw	fruits	important	nutritious
<i>Sesamum sesamoides</i>	false sesame	boiled, fried/stir-fried	vegetables	unknown	nutritious
<i>Thespesia garckeana</i>	African chewing gum	raw	fruits	very important	nutritious
<i>Vigna unguiculata</i>	cowpea	boiled, fried/stir-fried, steamed, dried/dehydrated	legumes	super important	very nutritious

\*Role in food scarcity: the color gradient reflects the importance of the plant during food scarcity, dark red meaning most important during food scarcity; Micro-nutrient content: the color gradient reflects the identification of important micronutrients, the darker the more important, based on data published in scientific literature.

It should be noted that the species classified as most important during food scarcity include two widely known legumes (common bean and cowpea), as well as two regionally, more frequently grown tuber species (wild yam and water yam). Typically, regionally occurring species such as *Cleome gynandra* and *Bidens pilosa* only play a minor role in coping with food scarcity due to their cultural stigmatization and the lack of knowledge in the communities (see also below).

### 3.3 Factors affecting consumption of local food plants

During the FFS diagnostic module, all participants from the 19 FFS reported that the consumption of local food plants had decreased over the past 30 years. The answer given most – 10 out of the 45 answers – attributed this change to negative attitudes towards local food plants that make them considered as less preferable [Table 6]. Nine FFS participants also reported that the lack of seed had affected the consumption of local food plants, and indicated that they are also less frequently found in the wild. However, this problem did not apply to the legumes *Phaseolus vulgaris* and *Vigna unguiculata* as their seeds are widely available. Perhaps, it can be assumed that these species are not actually considered local food plants, even if they maintain important value for the participating communities.

**Table 6. Factors identified as influencing trend towards less consumption of local food plants**

Factors explaining the change in consumption of local plants	Number of answers	Percentage of answers	Details and examples
Negative attitude towards local foods	10	22%	Regarded as backward by the youth; Traditional beliefs; local food plants regarded as not valuable
Lack of seed	9	20%	Local plants no longer found in the wild; inadequate seeds; lack of diversified seed; crop failures
Lack of knowledge/education	6	13%	Lack of knowledge on nutrition; not knowing the importance of local plants; lack of knowledge on propagation

Climate (change)	5	11%	Changing weather conditions; unreliable rainfall patterns; poor weather patterns
Deforestation	5	11%	-
Poor taste of local crop preparations	5	11%	-
Introduction of new crops/seeds	5	11%	Introduction of certified seed; introduction of non-local food plants
Total	45	100%	

\* The details and examples are taken from the FFS diagnostic reports. The way the question was asked allowed FFS to give more than one response. During data analysis, the responses were then grouped into categories. The percentages are calculated over the total number of responses (N=45) recorded across the 19 participating FFS.

## 4 Conclusion

Local food plants provide major opportunities to improve local nutrition security, and their use needs more support. Education and knowledge sharing are very important in decreasing the lack of knowledge on their use and benefits, as well as in creating a positive attitude towards them.



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## 6 ANNEX 1: PLANTS LISTED AS MAIN CROPS

Annex 1 presents the full list of these crops and the frequencies in which they were mentioned by men and women. The most popular crops identified were the major staple crops maize (89%), groundnut (57%), pumpkin (49%), and sweet potato (41%). Local Food Plants were mentioned with lower frequencies.

Main crops	English name	Total Hhs		Chikankata		Shibuyunji		Chirundu		Rufunsa	
		N	%	N	%	N	%	N	%	N	%
bambara nut	bambara nut	80	13%	14	14%	58	20%	1	1%	7	6%
banana	banana	2	0%			1	0%			1	1%
bean	bean	127	20%	53	55%	48	16%	20	16%	6	5%
bitende	pumpkin	1	0%	1	1%						
black jack	black jack	1	0%			1	0%				
black wheat	black wheat	1	0%			1	0%				
bondwe	amaranth	55	9%			55	19%				
broccoli	broccoli	1	0%			1	0%				
buck wheat	buck wheat	1	0%			1	0%				
butter nut	butter nut	3	0%			3	1%				
bwengo	sesame	3	0%			1	0%	2	2%		
cabbage	cabbage	17	3%	2	2%	15	5%				
cabbage chinese	cabbage chinese	15	2%	1	1%	14	5%				
carrot	carrot	10	2%			10	3%				
cassava	cassava	75	12%			26	9%			49	41%
cayenne pepper	cayenne pepper	1	0%			1	0%				
chembele	chembele	2	0%			2	1%				
chilli	chilli	18	3%			18	6%				
cleome	cleome	2	0%			2	1%				
cowpea	cowpea	250	39%	35	36%	175	60%	21	17%	19	16%
cucumber	cucumber	53	8%	3	3%	44	15%	5	4%	1	1%
eggplant	eggplant	55	9%	1	1%	54	18%				
finger millet	finger millet	31	5%			8	3%	23	18%		
fyakaka		1	0%							1	1%
gald	gourd	52	8%			52	18%				
godola	sorghum	5	1%					5	4%		
gourd	edible gourd	151	24%	24	25%	127	43%				
granadilla	granadilla	1	0%			1	0%				
green bean	green bean	1	0%			1	0%				
green gram	green gram	1	0%			1	0%				
green pepper	green pepper	7	1%			7	2%				

Main crops	English name	Total Hhs		Chikankata		Shibuyunji		Chirundu		Rufunsa	
		N	%	N	%	N	%	N	%	N	%
groundnut	groundnut	358	57%	57	59%	226	77%	10	8%	65	55%
guava	guava	3	0%			3	1%				
impwa	African eggplant	67	11%	3	3%	65	22%				
kale kale	kale	1	0%			1	0%				
kalilasi		1	0%			1	0%				
kayawali	sorghum	16	3%					16	13%		
kuyuma	sorghum	1	0%							1	1%
lemon	lemon	1	0%			1	0%				
loongo	sorghum	24	4%					24	19%		
lubanga	cleome	27	4%			27	9%				
lumanda	roselle	64	10%			65	22%				
lungu	pumpkin	1	0%	1	1%						
luyuni	cleome	1	0%	1	1%						
maila	sorghum	4	1%			2	1%	2	2%		
maize	maize	564	89%	100	103%	303	104%	49	39%	120	101%
makowa	local cucumber	49	8%	9	9%	38	13%	2	2%		
mango	mango	2	0%			2	1%				
mapila	sorghum	1	0%							1	1%
matanga	pumpkin	2	0%	2	2%						
mbulukutu	bambara nut	2	0%							2	2%
mbwila	bambara nut	2	0%			2	1%				
millet	pearl millet	20	3%			3	1%	17	14%		
misale	sweet sorghum	13	2%	12	12%			1	1%		
mubele	sorghum	5	1%	5	5%						
mundambi		37	6%			40	14%				
mung bean	mung bean	12	2%			12	4%				
musau		1	0%			1	0%				
myungu	edible gourds	41	6%	3	3%	38	13%				
nyemu	groundnuts	1	0%	1	1%						
nzembwe	pearl millet	14	2%					14	11%		
okra	okra	208	33%	40	41%	164	56%			4	3%
onion	onion	31	5%	1	1%	30	10%				
orange	orange	1	0%			1	0%				
paprika	paprika	4	1%			4	1%				
paw paw	papaya	3	0%			2	1%			1	1%

Main crops	English name	Total Hhs		Chikankata		Shibuyunji		Chirundu		Rufunsa	
		N	%	N	%	N	%	N	%	N	%
pearl millet	pearl millet	56	9%			17	6%	39	31%	1	1%
pigeon pea	pigeon pea	6	1%			6	2%				
potato	potato	12	2%	12	12%						
pumpkin	pumpkin	312	49%	51	53%	260	89%			2	2%
rape	rape	196	31%	18	19%	175	60%			3	3%
sesame	sesame	3	0%			1	0%	2	2%		
shallot	shallot	1	0%			1	0%				
sorghum	sorghum	172	27%	7	7%	24	8%	115	92%	26	22%
soybean	soybean	141	22%	23	24%	117	40%			1	1%
spinach	spinach	6	1%			6	2%				
squash	edible gourd	4	1%			4	1%				
sugar bean	sugar bean	1	0%			1	0%				
sugarcane	sugarcane	6	1%	2	2%					4	3%
sunflower	sunflower	162	26%	27	28%	115	39%	20	16%		
sweet cane	sweet cane	112	18%			112	38%				
sweet potato	sweet potato	262	41%	29	30%	165	57%			80	67%
tomato	tomato	93	15%	6	6%	84	29%			3	3%
tunguza	African cucumber	2	0%			2	1%				
vitunguza	local cucumber	1	0%			1	0%				
watermelon	watermelon	42	7%	3	3%	37	13%	2	2%		
zembwe	pearl millet	3	0%			3	1%				

\*The results come out the baseline household survey, in which 634 household participated. During this module question, 633 households responded (1 missing value). In total, 4389 responses were collected that identified 89 different main crops. Percentages reflect the number of the crops mentioned, divided by the number of households that responded (N=633).

## 7 ANNEX 2: RESOURCE FLOW MAP

Annex 2 presents the results from the resource flow map exercise implemented during the FFS diagnostic module. It contains the plants that were mentioned in the 19 FFS and the characteristics that the participants provided regarding the place they are usually found, the family member that usually harvests them, their edible parts, their seasonal availability, their perceived nutritional/medicinal value, whether there is cultural reluctance regarding their consumption, and their stress-tolerance qualities. The data in this Annex provides additional information to the data in Annex 1.

			Where is the plant found?									Who harvests it?			Edible part(s)										Seasonal availability				Perceived nutritional and medicinal values			Are people reluctant to eat it?		Stress-tolerance qualities					
Food plants	Scientific name	English name	Home garden	Agricultural field	Forest	Water bodies	River-side or around water bodies	Road-sides	Swamps or wet-lands	Around live-stock enclosures	Men	Women	Children	Roots/tubers	Stem	Leaves	Flower	Fruits	Shoots	Seed	Stalk of flower	Whole aerial parts	All year	Rainy season	Dry season	Other	Nutritional value	Medicinal value	None	Yes	No	No tolerance	Flood tolerant	Drought-tolerant	Pest and/or disease resistant	Other			
Bambara nut	Vigna subterranea	Bambara nut	0	9	0	0	0	0	0	0	4	9	8	0	0	0	0	2	0	7	0	0	6	3	0	0	9	1	0	3	6	0	3	8	0	0			
Banana	Musa spp.	Banana	0	3	0	0	0	0	0	0	3	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	0	3	0	2	3	0	0			
Bbonje	#N/A		0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	1	0				
Beans	Phaseolus vulgaris	Beans	2	3	0	0	0	0	0	0	3	3	3	0	0	1	0	0	0	3	0	0	2	1	0	0	3	0	0	0	3	1	0	2	0	0			
Black jack	Bidens pilosa	Black jack	2	1	1	0	0	0	0	0	2	2	2	0	0	2	0	0	0	0	0	0	1	1	0	0	2	1	0	2	0	0	2	1	0	0			
Bondwe	Amaranthus spp.	Amaranth	8	8	0	0	0	0	0	1	3	9	8	0	2	4	0	0	1	1	0	5	4	5	0	0	8	8	0	2	7	0	0	2	9	0			
Bowa	#N/A		0	3	4	0	0	0	0	0	1	4	4	0	0	0	0	0	2	0	0	2	0	2	0	2	4	0	0	2	2	0	2	2	0	0			
Buchinga	#N/A		0	0	2	0	0	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	2	0	0	2	2	0	0	2	0	0	2	0	0			
Busala	Dioscorea polystachya		0	0	8	0	0	0	0	0	2	8	7	8	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	8	0	5	8	5	0			
Busiika	#N/A		0	2	3	0	2	2	0	0	3	3	3	0	0	2	0	3	0	0	0	0	0	0	3	0	1	3	0	0	3	0	1	3	3	0			
Buyubuy	Corchorus tridens		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Bweengo	#N/A		1	2	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	2	0	0	1	1	0	0	2	1	0	0	2	0	0	2	0	0			
Caama	#N/A		0	0	4	0	1	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	3	0	1	0	2	1	0	3	1	0	3	3	3	0			
Cassava	Manihot esculenta	Cassava	0	2	0	0	0	0	0	0	2	2	2	1	0	0	0	0	0	1	0	0	1	1	0	0	2	1	0	0	2	0	1	2	0	0			
Cattle melon	#N/A	Cattle melon	0	5	0	0	0	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	5	0	0	0	5	0	0			
Chibwali	Ipomoea batatas		2	2	0	0	0	0	0	2	1	2	1	2	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	2	0	0	2	2	0			
Chidyanondo	#N/A		0	2	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	0	2	0	0	0	2	0			
Chilli	#N/A	Chilli	5	5	0	0	0	0	0	0	5	5	5	0	0	0	0	5	0	0	0	0	5	0	0	0	5	5	0	5	0	0	0	5	0	0			
Chitindilibu	#N/A		0	0	1	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0			
Chitungusa	#N/A		0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0			
Chiwawa	#N/A		0	3	0	0	0	0	0	1	2	3	1	0	0	3	0	0	0	0	0	0	1	2	0	0	3	0	0	0	3	0	1	2	1	0			
Chuwe	#N/A		0	1	3	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	2	0	1	0	3	1	0	2	1	0	1	2	3	0			
Cimoowa	#N/A		2	2	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	2	0			
Cinzuma	#N/A		0	1	3	0	0	0	0	3	3	3	4	0	0	0	0	4	0	3	0	0	0	0	4	0	4	2	0	2	2	0	3	4	3	0			
Cowpea	#N/A	Cowpea	7	11	0	0	0	0	0	0	10	11	10	0	0	9	0	1	0	8	0	2	2	9	5	0	11	8	0	0	10	0	4	11	0	0			
Cucumber	Cucumis sativus	Cucumber	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0		
Dulwe	#N/A		0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0			
Egg plant	Solanum melongena	Egg plant	5	5	0	0	0	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	0	5	0	0	5	0	0			
Finger millet	Eleusine coracana	Finger millet	0	5	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	5	0	0	5	0	0	0	5	5	0	0	5	0	0	5	0	0			
Gourds	#N/A	Gourds	5	5	0	0	0	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	0	5	0	0	5	0	0			
Green gram	Vigna radiata	Green gram	5	5	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	5	0	0	0	5	0	0	5	0	0	0	5	0	0	5	0	0			
Groundnuts	Arachis hypogaea	Ground-nuts	5	8	0	0	0	0	0	0	8	8	6	0	0	0	0	0	0	8	0	0	5	3	0	0	8	0	0	0	8	0	3	5	0	0			
Impwa	Solanum aethiopicum		8	6	0	0	0	0	0	0	5	6	7	0	0	0	0	8	0	0	0	0	3	5	0	0	8	1	0	0	8	0	2	8	2	0			



			Where is the plant found?								Who harvests it?			Edible part(s)										Seasonal availability				Perceived nutritional and medicinal values			Are people reluctant to eat it?		Stress-tolerance qualities					
Food plants	Scientific name	English name	Home garden	Agri-cultural field	For-est	Water bod-ies	River-side or around water bodies	Road-sides	Swamps or wet-lands	Around live-stock enclo-sures	Men	Wom-en	Chil-dren	Roots/ tubers	Stem	Leaves	Flower	Fruits	Shoots	Seed	Stalk of flower	Whole aerial parts	All year	Rainy season	Dry sea-son	Oth-er	Nutri-tional value	Med-icinal value	None	Yes	No	No toler-ance	Flood toler-ant	Drought-tol-erant	Pest and/or disease resis-tant	Other		
Kambwalim-ulonga	#N/A		0	0	0	1	4	0	0	0	3	4	4	0	0	4	0	3	0	0	0	0	4	0	0	0	3	3	0	3	1	0	1	3	0	0		
Kampuki	#N/A		4	5	5	0	0	0	0	1	0	5	5	0	0	5	0	1	0	0	0	0	3	1	0	1	5	2	0	2	3	0	2	4	5	0		
Kampulanga	#N/A		0	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	0		
Kaneembe	#N/A		0	0	5	0	0	0	0	0	5	5	5	0	0	0	5	0	0	0	0	0	0	0	5	0	4	5	0	5	0	0	0	0	0	0		
Kanemane-ma	#N/A		0	0	1	0	0	0	1	0	0	1	2	0	0	2	0	0	0	0	0	0	1	1	0	0	2	1	0	1	1	0	1	1	0	0		
Kanunka	#N/A		10	10	1	0	0	0	0	0	1	11	11	0	0	11	0	0	0	0	0	0	5	6	0	0	6	10	0	11	0	0	1	6	10	0		
Kasili	#N/A		5	5	8	0	5	5	0	5	8	8	8	0	0	5	0	3	0	0	0	0	5	3	0	0	8	5	0	0	8	0	0	8	8	0		
Katapa	#N/A		2	2	0	0	0	0	0	0	2	2	2	0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	2	0	0	2	0	0		
Katate	Ceratotheca sesamoides		0	0	1	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	1	0	0		
Kayenese	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Kwabukwabu	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Lemon	Citrus limon	Lemon	0	2	0	0	0	0	0	0	2	2	1	0	0	0	0	2	0	0	0	0	2	0	0	0	2	2	0	0	2	0	2	2	0	0		
Lumanda	Hibiscus sabdariffa	Roselle	11	13	0	0	0	0	0	0	3	13	13	0	0	13	0	0	0	0	0	0	3	11	0	0	13	6	0	1	12	0	3	13	0	0		
Lungu	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Luyuni	#N/A		3	3	1	0	0	0	0	1	0	1	3	0	0	3	0	0	0	0	1	0	3	1	0	0	4	4	0	1	3	0	2	3	4	0		
Maabo	#N/A		0	0	2	0	0	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	0	2	0	2	2	0	2	0	0	0	2	2	0		
Mabanana	#N/A		1	0	0	1	0	0	1	1	1	1	1	0	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	0	2	0	2	1	0	0		
Mabuyu	Adansonia digitata		0	0	10	0	0	5	0	0	10	8	10	0	0	5	0	9	0	1	0	0	1	0	10	0	10	5	0	4	6	0	3	10	6	0		
Madinkolo	#N/A		0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	1	0		
Magabo	#N/A		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0		
Magwaba	#N/A		0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0	0	1	0	1	1	1	0		
Magwilinty	#N/A		0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	1	0		
Maila	#N/A		0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	0		
Maize	Zea mays	Maize	5	9	0	0	0	0	0	0	9	9	9	0	0	0	0	0	0	0	9	0	0	5	4	0	0	9	5	0	0	9	0	0	0	5	3	
Majamola	#N/A		0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	1	0		
Makande	#N/A		0	0	3	0	0	0	0	0	3	0	3	0	0	0	0	2	0	1	0	0	0	2	1	0	3	0	0	0	3	0	3	3	0	0		
Makowa	Acanthosicyos naudinianus	Local cucumber	9	9	0	0	0	0	0	0	9	9	9	0	0	0	0	9	0	4	0	0	3	6	0	0	9	1	0	3	6	0	0	9	4	0		
Makunka	#N/A		0	0	5	0	0	0	0	0	5	5	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	5	0	0	0	0	5	0	0		
Malamba	#N/A		0	0	3	0	0	0	0	0	3	1	3	0	0	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0	3	0	2	1	0	0		
Malubeni	#N/A		0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0	1	1	1	0		
Mango	Mangifera indica	Mango	0	4	12	0	0	1	0	2	11	11	13	1	0	1	0	13	0	0	0	0	5	4	4	0	14	1	2	7	7	0	6	13	12	0		
Masanze	#N/A		0	0	2	0	0	0	0	0	2	0	2	0	2	2	0	0	0	0	0	0	0	0	2	0	2	0	0	2	0	0	0	0	2	0		
Masau	#N/A		5	5	5	0	5	5	0	0	5	5	5	0	0	0	0	5	0	0	0	0	0	0	5	0	5	0	0	0	5	0	0	5	0	0		
Masuku	#N/A		0	0	7	0	0	0	0	0	3	5	7	0	0	0	0	7	0	0	0	0	0	7	0	0	6	3	0	0	7	0	5	5	5	0		
Matobo	#N/A		0	4	8	4	0	0	0	1	4	4	8	0	0	0	0	8	0	0	0	0	0	4	4	0	8	0	1	2	6	0	3	7	2	0		
Matwi a sulwe	#N/A		0	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0		
Mbula	Adansonia digitata		0	0	7	0	0	0	0	0	3	5	7	0	0	0	0	6	0	4	0	0	0	1	6	0	7	2	0	4	3	0	6	6	3	0		
Mbwiila	#N/A		0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0	3	0	0	0	3	0	0	0	0	0		
Mfumbwa	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Millet	Panicum		0	3	0	0	0	0	0	0	3	3	3	0	0	0	0	0	0	3	0	0	0	3	0	0	3	0	0	3	0	0	3	3	1	0		
Misale	Sorghum sp		0	1	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	0		
Molinga	#N/A		4	4	0	0	0	0	0	0	4	4	4	0	0	4	0	0	0	4	0	0	4	0	0	0	4	0	4	0	0	0	4	0	0	0		
Mpoko	#N/A		0	0	5	0	0	0	0	0	5	5	5	0	0	5	0	0	0	0	0	0	0	0	5	0	4	5	0	5	0	0	0	5	0	0		
Mpwewu	#N/A		0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0		

			Where is the plant found?								Who harvests it?			Edible part(s)									Seasonal availability				Perceived nutritional and medicinal values			Are people reluctant to eat it?		Stress-tolerance qualities					
Food plants	Scientific name	English name	Home garden	Agri-cultural field	For-est	Water bod-ies	River-side or around water bodies	Road-sides	Swamps or wet-lands	Around live-stock enclo-sures	Men	Wom-en	Chil-dren	Roots/ tubers	Stem	Leaves	Flower	Fruits	Shoots	Seed	Stalk of flower	Whole aerial parts	All year	Rainy season	Dry season	Other	Nutri-tional value	Me-dic-inal value	None	Yes	No	No toler-ance	Flood toler-ant	Drought-tol-erant	Pest and/or disease resis-tant	Other	
Mudelele	#N/A		4	4	0	0	0	0	0	0	4	4	4	0	0	4	3	4	0	0	0	0	4	0	0	0	4	0	0	0	4	0	4	0	0	0	0
Mudyaki	#N/A		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	1	1	0	
Mukala	#N/A		0	0	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	2	0	0	2	0	0	2	0	2	0	
Mukashibuku	#N/A		0	0	2	0	0	0	0	0	0	2	2	0	0	2	0	0	0	0	0	0	0	2	0	0	2	2	0	0	2	2	0	0	0		
Muloolo	#N/A		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0	
Mumbu	#N/A		0	0	4	0	0	0	0	0	0	4	4	0	0	0	0	4	0	0	0	0	2	1	2	0	4	0	0	2	2	0	3	4	2	0	
Mundambi	Hibiscus sab-dariffa		7	7	0	0	0	0	0	0	2	7	7	0	0	7	0	2	0	0	0	0	2	5	0	0	7	2	0	7	0	0	0	7	0	0	
Mundyoli	#N/A		0	0	4	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	4	0	0	4	0	0	0	4	0	0	4	0	0	
Muntli			0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	2	2	2	0	
Munyoonyo	#N/A		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	0	
Mupwepwe	#N/A		0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0	
Musansi	#N/A		0	0	3	0	0	0	0	0	0	1	3	0	0	0	0	3	0	0	0	0	0	3	0	0	3	0	0	3	0	0	0	3	3	0	
Musekese	#N/A		0	0	4	0	0	1	0	0	2	1	4	1	0	0	0	3	0	0	0	0	0	0	4	0	2	3	0	2	2	0	2	4	1	0	
Mutenzi	#N/A		1	2	2	0	0	0	0	0	0	1	2	0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	2	2	2	0	
Mwanja	#N/A		2	2	0	0	0	0	0	0	1	2	0	2	1	1	0	0	0	0	0	0	2	0	0	0	2	1	0	0	2	0	2	2	2	0	
Myungu	#N/A		1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0		
Nabuya	#N/A		0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	0		
Nchenje	#N/A		0	0	5	0	0	0	0	1	4	3	5	0	0	0	0	4	0	1	0	0	0	2	4	0	5	0	0	5	0	4	5	2	0		
Nchovwa	#N/A		0	0	1	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	1	1	0	
Ndiya	#N/A		0	0	2	0	0	0	0	0	0	1	2	1	0	0	0	1	0	0	0	0	0	1	2	0	2	1	0	1	1	0	1	2	1	0	
Ndongwe	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ndule	#N/A		1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	
Nego	#N/A		0	0	4	0	0	0	0	0	4	1	4	0	0	0	0	4	0	0	0	0	0	4	0	0	4	0	0	0	4	0	3	4	0	0	
Ngayi	#N/A		1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	2	0	0	0	0	0	1	2	0	2	1	0	0	2	0	2	1	1	0	
Ngoongwa	#N/A		0	0	5	0	0	0	0	0	5	5	5	0	0	0	0	0	0	5	0	0	0	0	5	0	5	5	0	3	2	0	3	3	2	0	
Njiyi	#N/A		0	0	5	0	0	0	0	0	5	5	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	0	5	0	0	0	5	0	
Nkolondo	#N/A		0	0	4	0	0	0	0	0	0	2	4	0	0	0	0	4	0	0	0	0	0	0	4	0	3	0	1	4	0	0	2	4	1	0	
Nkoomwa	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Nkunguzu	#N/A		1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0	0	1	1	0	
Nkuyu	#N/A		0	0	2	0	1	0	0	0	1	2	2	1	0	2	0	1	0	0	0	0	1	1	1	0	2	2	0	2	0	1	2	1	0		
Nkwabu Nkwabu	#N/A		0	0	3	0	0	0	0	0	2	1	1	0	0	2	0	1	0	0	0	0	0	1	0	2	1	2	0	2	1	0	0	2	3	0	
Nkwela bwato	#N/A		0	0	2	0	0	0	0	0	0	2	2	0	0	2	0	0	0	0	0	0	0	2	0	0	2	2	0	0	2	2	0	0	0	0	
Nsikili	#N/A		0	0	2	0	0	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	2	0	2	2	2	0	
Nsomboya	#N/A		0	1	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	0	
Ntanga	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ntugwa	#N/A		0	0	3	0	0	0	0	0	2	0	3	0	0	0	0	3	0	0	0	0	0	2	1	0	2	1	0	0	3	0	0	2	3	0	
Ntumbulwa	#N/A		0	0	8	0	0	0	0	0	5	5	8	1	0	1	0	7	0	0	0	0	0	7	1	0	8	3	0	0	8	0	4	6	4	0	
Nundu	#N/A		0	0	4	0	0	0	0	0	0	3	2	0	2	2	0	2	0	0	0	0	2	0	0	2	4	0	0	4	0	2	1	4	0		
Nyabo	#N/A		0	1	1	0	0	0	0	0	0	2	2	0	0	2	0	2	0	0	0	0	2	0	0	0	2	2	0	0	2	0	0	2	2	0	
Nyemu	#N/A		0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0	0	1	1	0	
Okra	Abelmoschus esculentus	Okra	1	2	0	0	0	0	0	0	2	2	1	0	0	1	0	2	0	0	0	0	1	1	0	0	2	2	0	0	2	1	1	1	0	0	
Oranges	Citrus sinensis	Oranges	0	2	0	0	0	0	0	0	2	2	2	0	0	0	0	2	0	0	0	0	1	1	0	0	2	0	0	0	2	0	1	1	0	0	
Paprika	Capsicum annuum	Paprika	3	3	0	0	0	0	0	0	3	3	3	0	0	0	0	1	0	2	0	0	3	0	0	0	3	0	0	0	3	0	0	3	0	0	
Paw paw	Carica papaya	Papaya	0	2	0	0	0	0	0	0	2	2	1	0	0	0	0	2	0	0	0	0	2	0	0	0	2	2	0	0	2	0	2	0	0	0	
Pearl millet	#N/A	Pearl millet	0	5	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	5	0	0	5	0	0	0	5	5	0	0	5	0	0	5	0	0	

			Where is the plant found?								Who harvests it?			Edible part(s)										Seasonal availability				Perceived nutritional and medicinal values			Are people reluctant to eat it?		Stress-tolerance qualities					
Food plants	Scientific name	English name	Home garden	Agricul-tural field	For-est	Water bod-ies	River-side or around water bodies	Road-sides	Swamps or wet-lands	Around live-stock enclo-sures	Men	Wom-en	Child-ren	Roots/ tubers	Stem	Leaves	Flower	Fruits	Shoots	Seed	Stalk of flower	Whole aerial parts	All year	Rainy season	Dry season	Oth-er	Nutritional value	Med-icinal value	None	Yes	No	No tolerance	Flood toler-ant	Drought-tol-erant	Pest and/or disease resis-tant	Other		
Pigon pea	Cajanus cajan	Pigon pea	0	2	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0	2	0	0	0	2	0	1	0	0	1	
Pondo	#N/A		0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	1	0		
Pumpkin	Cucurbita spp.	Pumpkin	8	8	0	0	0	0	0	0	3	8	8	0	0	8	1	8	0	3	0	0	3	5	0	0	7	0	0	0	8	0	0	8	1	0		
Shuungwa	#N/A		5	5	2	0	0	0	0	0	2	6	5	0	0	5	0	2	0	0	0	0	5	2	0	0	7	1	0	6	1	0	1	1	7	0		
Sorghum	#N/A	Sorghum	0	7	0	0	0	0	0	0	6	7	6	0	0	0	0	0	0	7	1	0	5	2	0	0	7	5	0	0	7	0	2	7	0	0		
Sozwe	#N/A		0	0	3	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	3	0	3	0	0	3	0	0	3	0	3	0		
Sugar cane	Saccharum officinarum	Sugar cane	0	8	0	0	0	0	0	0	8	8	8	5	0	0	0	0	3	0	0	0	3	5	0	0	8	0	0	0	8	0	2	7	0	0		
Sunflower	Helianthus annuus	Sunflower	0	5	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	5	0	0	5	0	0	0	5	0	0	0	5	0	0	5	5	0		
Sweetcane	Saccharum officinarum	Sweetcane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sweetpotato	Ipomoea batatas	Sweetpotato	5	6	0	0	0	0	0	0	6	6	6	6	0	5	0	0	0	0	0	0	0	6	0	0	6	5	0	0	6	0	0	6	0	0		
Tanta chulu	#N/A		5	5	0	0	0	0	0	0	0	5	5	0	0	5	0	0	0	0	0	0	0	5	0	0	5	0	0	0	5	5	0	0	0	0		
Tindigoma	#N/A		2	1	2	0	0	0	0	0	3	2	3	0	0	3	0	0	0	0	0	0	2	2	0	0	3	0	0	3	0	0	3	1	0	0		
Tomato	Solanum lycopersicum	Tomato	5	5	0	0	0	0	0	0	5	5	5	0	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	0	5	5	0	0	0	0		
Tumbi	#N/A		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0			
Ushika	#N/A		0	0	4	0	0	0	0	0	4	2	4	0	0	0	0	2	0	2	0	0	2	0	2	0	2	2	0	3	1	0	3	4	1	0		
Wengo	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Zimbe	#N/A		2	1	0	0	1	0	0	1	2	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	1	1	1	1		
Zitende	#N/A		1	1	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0	1	0	0	1	0	0	1	1	0	0	1	0	0	1	1	0			
Zumba	#N/A		0	0	2	0	0	0	0	0	1	2	1	0	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	1	1	0	2	0	0	0		
Total			171	273	227	6	20	19	2	27	282	412	426	40	15	162	9	217	6	109	2	9	163	220	105	10	447	166	4	150	330	16	143	364	192	5		

\*The results come out the FFS diagnostic exercise, which data was collected from 19 FFS. In total, 141 species were investigated in this module.

## 8 ANNEX 3: MANAGEMENT AND DOMESTICATION

Annex 3 presents the results from the management and domestication exercise implemented during the FFS diagnostic module. It contains the plants that were mentioned in the 19 FFS and the characteristics that the participants provided regarding their level of domestication, their management practices, and the environment they can usually be found, as well as the place from which they usually acquire seeds and/or planting materials. The data in this Annex provides additional information to the data in Annex 1.

Food plants	Scientific name	English name	Level of domestication			Management practices									In which environment does the management practice(s) take place?										Where do you acquire the seeds/planting material?								
			Truly wild	Wild and managed (semi-domesticated)	Domesticated	Trans-planting	Protection	Watering	Fertilizing	Weeding	Pruning	Mulching	Absence of management	Other	Home garden	Agricultural field	Forest	Water bodies (inside lake, water pond)	River-side or around water bodies	Swamps or wetlands	Around livestock enclosures	Others	Home garden	Seed fairs	Agricultural field	Forest	River-side or around water bodies	Road-sides	Around livestock enclosures	Market			
Bambara nut	Vigna subterranea	Bambara nut	0	0	7	0	6	2	5	6	0	6	0	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Banana	Musa spp.	Banana	0	0	3	0	3	3	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Bbonje	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Beans	Phaseolus vulgaris	Beans	2	0	2	0	4	4	2	2	0	2	0	0	2	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0			
Black jack	Bidens pilosa	Black jack	1	3	0	0	0	1	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Bondwe	Amaranthus spp.	Amaranth	1	8	2	2	4	3	0	9	2	2	6	0	9	9	2	0	0	0	0	0	3	1	3	0	0	0	1	1			
Bowa	#N/A		1	4	3	0	4	1	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Buchinga	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Busala	Dioscorea polystachya		5	1	0	0	1	1	0	0	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0			
Busiika	#N/A		3	0	0	0	1	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0			
Buyubuy	Corchorus tridens		0	3	0	0	2	2	0	2	0	0	1	0	2	2	1	0	0	0	0	2	0	2	0	0	0	0	0	0			
Bweengo	#N/A		0	0	2	0	1	1	0	2	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Caama	#N/A		4	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cassava	Manihot esculenta	Cassava	0	0	2	0	1	2	1	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0			
Cattle melon	#N/A	Cattle melon	0	0	5	0	5	5	5	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chibwali	Ipomoea batatas		0	0	2	0	1	2	1	1	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chidy-anondo	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chilli	#N/A	Chilli	0	0	5	5	5	5	5	5	0	5	0	0	5	5	0	0	0	0	0	5	0	5	0	0	5	0	5	0			
Chitind-ilibu	#N/A		0	0	1	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chitungusa	#N/A		0	1	2	0	3	3	0	1	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chiwawa	#N/A		0	1	5	0	2	4	0	4	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Chuwe	#N/A		3	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cimoowa	#N/A		0	2	0	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0			
Cinzuma	#N/A		2	3	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cowpea	#N/A	Cowpea	0	0	11	0	7	2	5	11	0	5	0	0	6	11	0	0	0	0	0	0	0	0	2	0	0	0	0	0			

Food plants	Scientific name	English name	Level of domestication			Management practices									In which environment does the management practice(s) take place?										Where do you acquire the seeds/planting material?									
			Truly wild	Wild and managed (semi-domesticated)	Domesticated	Transplanting	Protection	Watering	Fertilizing	Weeding	Pruning	Mulching	Absence of management	Other	Home garden	Agricultural field	Forest	Water bodies (inside lake, water pond)	River-side or around water bodies	Swamps or wetlands	Around livestock enclosures	Others	Home garden	Seed fairs	Agricultural field	Forest	River-side or around water bodies	Road-sides	Around livestock enclosures	Market				
Cucumber	Cucumis sativus	Cucumber	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Dulwe	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Egg plant	Solanum melongena	Egg plant	0	0	5	5	5	5	5	5	0	5	0	0	5	5	0	0	0	0	0	0	5	0	5	0	0	5	0	5				
Finger millet	Eleusine coracana	Finger millet	0	0	5	0	5	0	5	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Gourds	#N/A	Gourds	0	0	5	0	0	0	5	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Green gram	Vigna radiata	Green gram	0	0	5	0	5	0	5	5	0	5	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ground-nuts	Arachis hypogaea	Ground-nuts	0	0	8	0	5	2	5	5	0	6	0	0	5	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Impwa	Solanum aethiopicum		0	0	7	6	5	1	6	5	0	5	0	0	7	6	0	0	0	0	0	0	5	0	5	0	0	5	0	6				
Kamb-walimu-longa	#N/A		0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0				
Kampuki	#N/A		3	0	0	0	2	1	0	0	0	0	1	0	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0				
Kampulanga	#N/A		0	0	3	2	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	2	1	0	0	0	0	0	0	1				
Kane-embe	#N/A		0	3	0	1	3	2	0	1	0	0	0	0	2	1	2	0	0	0	0	0	0	0	2	0	0	0	0	0				
Kane-manema	#N/A		1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0				
Kanunka	#N/A		6	5	0	0	4	4	0	4	0	0	7	0	6	3	9	0	0	0	0	0	3	0	3	0	0	0	0	0				
Kasili	#N/A		4	3	0	0	3	1	0	1	0	0	4	0	1	4	6	0	1	0	0	0	0	0	0	0	0	0	0	0				
Katapa	#N/A		0	0	3	0	3	3	0	3	2	2	0	0	2	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0				
Katate	Ceratotheca sesamoides		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Kayenese	#N/A		0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Kwabuk-wabu	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Lemon	Citrus limon	Lemon	0	1	2	0	1	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Lumanda	Hibiscus sabdariffa	Roselle	0	6	8	0	5	8	5	14	0	5	0	0	10	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Lungu	#N/A		0	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Luyuni	#N/A		0	4	1	0	1	3	0	4	0	0	0	0	4	4	0	0	0	0	0	2	1	0	0	0	0	0	0	1				
Maabo	#N/A		2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ma-banana	#N/A		0	1	2	0	1	2	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0				
Mabuyu	Adansonia digitata		4	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0				
Madinko-lo	#N/A		2	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Magabo	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0				
Magwaba	#N/A		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0				
Magwil-inty	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				



Food plants	Scientific name	English name	Level of domestication			Management practices								In which environment does the management practice(s) take place?										Where do you acquire the seeds/planting material?									
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Maila	#N/A		0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Maize	Zea mays	Maize	0	1	8	0	6	3	7	7	0	6	0	0	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Majamola	#N/A		0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Makande	#N/A		4	0	0	0	1	0	0	0	0	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Makowa	Acanthosicyos naudinianus	Local cucumber	0	5	2	0	7	1	0	6	0	5	0	0	7	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0			
Makunka	#N/A		5	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0			
Malamba	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Malubeni	#N/A		0	0	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Mango	Mangifera indica	Mango	10	3	6	0	6	5	0	2	1	4	10	0	5	4	6	0	1	1	0	2	0	0	0	0	0	0	0	0			
Masanze	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Masau	#N/A		2	2	1	0	3	3	0	2	0	0	2	0	0	3	2	0	1	0	2	0	0	0	0	0	0	0	0	0			
Masuku	#N/A		8	0	0	0	1	4	0	0	0	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Matobo	#N/A		1	3	1	0	2	0	0	0	2	0	1	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0			
Matwi a sulwe	#N/A		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mbula	Adansonia digitata		3	0	0	0	1	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mbwiila	#N/A		0	0	1	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mfumbwa	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Millet	Panicum		0	0	4	1	3	3	0	2	0	1	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Misale	Sorghum sp		0	0	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1			
Molinga	#N/A		0	0	4	2	4	4	3	4	2	3	0	0	3	4	0	0	0	0	0	0	4	0	4	0	0	0	0	0			
Mpoko	#N/A		5	0	0	0	1	1	0	1	0	0	4	0	0	0	5	0	0	0	0	0	1	0	1	0	0	0	0	0			
Mpwevu	#N/A		1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mudelele	#N/A		0	0	5	0	5	3	5	3	0	2	0	0	5	5	0	0	0	0	0	0	3	0	3	0	0	0	0	0			
Mudyaki	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mukala	#N/A		2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mukashibuku	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Muloolo	#N/A		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0			
Mumbu	#N/A		4	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0			
Mundambi	Hibiscus sabdariffa		0	0	7	6	6	1	0	6	1	6	1	0	6	6	1	0	0	0	0	0	5	0	5	0	0	0	0	0			
Mundyoli	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Muntili			2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Munyonyo	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mupwewe	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Musansi	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0			
Musekese	#N/A		4	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0			

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Mutenzi	#N/A		0	1	3	0	1	1	0	2	0	0	0	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Mwanja	#N/A		0	0	2	0	2	1	1	0	0	0	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0				
Myungu	#N/A		0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1				
Nabuya	#N/A		4	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nchenje	#N/A		1	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nchovwa	#N/A		1	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ndiya	#N/A		2	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ndongwe	#N/A		0	0	2	0	2	2	0	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ndule	#N/A		3	0	0	0	1	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nego	#N/A		4	0	0	0	1	0	0	0	0	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ngayi	#N/A		2	0	0	0	2	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ngoong-wa	#N/A		4	0	1	0	1	1	0	1	0	0	4	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0				
Njiyi	#N/A		5	0	0	0	0	0	0	0	0	0	5	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nkolondo	#N/A		4	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nkoomwa	#N/A		2	1	0	1	1	1	0	1	1	1	2	0	1	1	2	0	0	0	0	0	1	0	1	1	0	0	0	0				
Nkunguzu	#N/A		0	0	1	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nkuyu	#N/A		5	0	0	0	0	0	0	0	0	0	5	0	1	1	3	0	1	0	1	0	0	0	0	0	0	0	0	0				
Nkwabu Nkwabu	#N/A		2	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0				
Nkwela bwato	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nsikili	#N/A		2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nsom-boya	#N/A		3	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ntanga	#N/A		0	0	1	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0				
Ntugwa	#N/A		3	0	0	0	1	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ntumbulwa	#N/A		7	0	0	0	0	0	0	0	0	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nundu	#N/A		4	0	0	0	2	0	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Nyabo	#N/A		0	0	4	0	3	1	4	4	0	0	0	0	4	4	0	0	0	0	0	2	2	0	0	0	0	0	0	2				
Nyemu	#N/A		0	0	1	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1				
Okra	Abelmoschus esculentus	Okra	0	1	3	0	1	3	1	2	0	1	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Oranges	Citrus sinensis	Oranges	0	0	3	0	0	3	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Paprika	Capsicum annum	Paprika	0	0	2	1	2	2	2	2	0	2	0	0	2	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0				
Paw paw	Carica papaya	Papaya	0	1	3	3	0	2	0	1	0	3	0	0	2	4	0	0	0	0	0	0	2	0	2	0	0	0	0	0				
Pearl millet	#N/A	Pearl millet	0	0	5	0	5	0	5	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Pigon pea	Cajanus cajan	Pigon pea	0	0	1	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Pondo	#N/A		1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0				
Pumpkins	Cucurbita spp.	Pumpkin	0	0	6	0	6	6	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

			Level of domestication				Management practices								In which environment does the management practice(s) take place?										Where do you acquire the seeds/planting material?									
Food plants	Scientific name	English name	Truly wild	Wild and managed (semi-domesticated)	Domesticated	Trans-planting	Protection	Watering	Fertilizing	Weeding	Pruning	Mulching	Absence of management	Other	Home garden	Agricultural field	Forest	Water bodies (inside lake, water pond)	River-side or around water bodies	Swamps or wetlands	Around live-stock enclosures	Others	Home garden	Seed fairs	Agricultural field	Forest	River-side or around water bodies	Road-sides	Around live-stock enclosures	Market				
Shuungwa	#N/A		2	0	5	0	6	4	2	4	0	0	1	0	6	6	1	0	0	0	0	0	2	0	2	0	0	0	0	0				
Sorghum	#N/A	Sorghum	0	0	8	0	6	0	5	8	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Sozwe	#N/A		3	0	0	0	1	1	0	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0				
Sugar cane	Saccharum officinarum	Sugar cane	0	0	8	2	3	3	0	7	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Sunflower	Helianthus annuus	Sunflower	0	0	5	0	5	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Sweet-cane	Saccharum officinarum	Sweet-cane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Sweetpotato	Ipomoea batatas	Sweet-potato	0	0	5	0	5	5	5	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Tanta chulu	#N/A		0	0	5	5	5	5	5	5	0	5	0	0	5	5	0	0	0	0	0	0	5	0	5	0	0	5	0	5				
Tindigoma	#N/A		0	3	0	0	0	2	0	2	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Tomato	Solanum lycopersicum	Tomato	0	0	5	5	5	5	5	5	5	5	0	0	5	5	0	0	0	0	0	0	5	0	5	0	0	5	0	5				
Tumbi	#N/A		1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
Ushika	#N/A		4	0	0	0	0	0	0	0	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
Wengo	#N/A		0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Zimbe	#N/A		0	0	2	0	2	2	0	2	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0				
Zitende	#N/A		0	0	1	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1				
Zumba	#N/A		2	2	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0				
Total			184	73	239	50	233	171	114	231	16	121	180	6	175	244	148	4	10	6	6	10	64	3	59	6	1	25	1	37				

\*The results come out the FFS diagnostic exercise, which data was collected from 19 FFS. In total, 141 species were investigated in this module