Africa Manifesto and Plan of Action on Forgotten Foods

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FARA
Forum for Agricultural Research in Africa

GFAR

CAADP XP4 PROGRAMME

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Table of Contents

Executive Summary

Food security globally is constrained by several factors including the heavy reliance on very few key staple crops. In Africa, food insecurity has been increasing due to the effects of climate change, insecurity caused by terrorism, social and boundary conflicts, uncontrolled rapid population growth, persistent economic inequality, youth unemployment, undernourishment and other menace among others. One of the reasons for this situation is that Africa has deviated from embracing her traditional food system which involves cultivation and use of the traditional foods. Forgotten foods have enormous nutritional, medicinal, and economic values and when promoted, could highly contribute to poverty reduction and improve food security in Africa. In spite of the value that forgotten foods can potentially contribute to Africa food system, they have not attracted sufficient research and development attention.

They are neglected in terms of research, extension, commercialization and conservation. The long-term neglect of these commodities has dramatically influenced the food system and led to a gradual decline in the consumption of the traditional food resources in many communities, as well as the conveyance of knowledge associated with the plants. Therefore, to harness these potentials, collective actions are required at the global, regional and national levels. These actions should include the creation of awareness and communicating the economic, nutritional, environmental and cultural values of these foods to improve their consumption. They also involve the provision of the needed enabling environment for the development of these foods through research; empowering farmers in production; and encourage the private sector in processing, value addition marketing etc.

In addition, the research agenda needs to invest much more time and effort in understanding these crops. Furthermore, there is also a critical need to shift perceptions of these crops away from the negative views from the erstwhile colonial connotations to an outlook that embraces their nutritional values, diversity and the multiple knowledge associated with them as a critical contributor to resilience for the global food system. Making full use of these crops, however, will involve making them more commercially competitive with improved 'modern' varieties. Interventions in support of forgotten foods are many and include: awareness raising; effective maintenance of genetic and cultural diversity; development of better varieties; improve cultivation practices; enhance seed systems; improve value addition technologies; better access of producers to markets; enhance capacity building and networking; improve resource mobilization; better advocacy and policies towards promotion of forgotten foods should be held in high esteem.

A prompt attention, in terms of re-orientation and education of public, policy makers and relevant stakeholders towards making a strong advocacy for re-new interest in the forgotten food crops will re-position the continent in term of food security. The support of donor agency, continental, regional institutions and states in bringing back the forgotten foods to the mainstream of agricultural activities will fast track the realization of the hidden benefits of these foods.

Suggested Actions and the Way Forward

In other to mitigate the danger of food shortage and nutritional insecurity orchestrated by various constraints and lately aggravated by climate change, COVID-19, increased desertification, etc. There is the need to invest in life-saving crops that are resilient and well adapted to a wider range of environment and cropping systems. This will require a major modification in the agricultural research and innovation approaches towards identified NUS in each region of Africa. These logical modifications include.

PILLAR OF MANIFESTO	PROSPECTIVE ACTION
Establish a dedicated and functional research and innovation system for holistic development of forgotten foods.	i. Establishment of a continent-wide research systems dedicated to the forgotten foods is essential. The coordination could follow the established framework of "FARA – SROs- NARI" in alliance with the other IARC, the extension system and Civil society organizations. ii. The research mode should embrace the agricultural innovations systems with intrinsic multistakeholders engagement and benefits as the true qualifier of innovation. iii. Thte research system needs to give attention to; • Exhaustive identification and characterization of forgotten foods. • Development of new metrics and indicators to show the value of forgotten foods. • Participatory plant breeding for improved adaptation and value of forgotten foods; development of agronomic techniques for integration of the commodities into the farming systems. • Development of sustainable seeds systems to facilitate genetic conservation, seeds availability, access and use by farmers. • Food system research for development of new products, modern processing, packaging and product utilization. iv. Research action should facilitate novel research networking with advanced laboratory within the South-South and North South framework for knowledge and technology exchanges (e.g., molecular genetics, nutritional profiling, agronomic interventions, digital technologies and applications). v. Create a continental accountability framework to monitor progress and reporting to
Incrementally build an appropriate innovation capacity (infrastructure, equipment and expertise) at local level to enable African research and education institutions develop solutions for increased productivity, resilience to shocks, value-added production and quality assurance for forgotten foods.	i. Create Increased awareness of the forgotten foods to ensure that the values are recognized by all in the society, including researchers, technical agents as well as urban communities and consumers, for their nutritional, cultural and environmental benefits. ii. Granting required respect of rights of farmers through allowing them to locally use, save, exchange and sell their Forgotten Foods. iii. Introduction of the development of forgotten foods into education programs. iv. Promote the development of required infrastructures to promote the development of the forgotten foods v. More advocacy and evidence-based policy change.
Establish partnerships and strategic alliances to foster the engagement of youth, women for rapid integration of forgotten foods into the national food system and engagement for policy development	i. Facilitate the engagement of youth and women for active participation all along the process. ii. Established functional Innovation platforms at the strategic and operational levels for technology demand, utilization, production processing and other commercial actions. iii. Create a framework for seamless linkages of the various stakeholder's organization for development action.
Facilitate the engagement of private sector for investment into production, processing and marketing of forgotten foods	i. Create a structured engagement mechanism for the private sector including the farmers (smallholders and largescale) ii. Facilitate access to markets and support the short supply chains and alternative retail structures. iii. Create incentive for engagement in production, processing and marketing of forgotten foods.
Create a regional pool of financial resources to support research and coherent development efforts on forgotten foods. Such funds should be accessible by institutions and governments which have research topics aligned to regional priorities on forgotten foods	i. Develop innovative funding mechanism for research and development efforts on forgotten food and the different level of governance. ii. Facilitate joint engagement with development partners for well-coordinated investment and structured development effort. iii. Create specialized access to affordable finance facilities (Loan or Grant) as an incentive for engagement in forgotten food enterprise viz., production, processing and marketing of forgotten foods.

1.0 Background

Africa is the world's second-largest and second-most populous continent in the world. The land area is about 30.3 million km2 representing 20% of the world land area (Sayre, 1999). Africa has about 1.3 billion people that accounts for about 16% of the world's human population (United Nations Department of Economic and Social Affairs, 2019). Agriculture has been the backbone of its food systems for more than 10,000 years since humans shifted from hunting and gathering to cultivating food. Agriculture contributes a significant share of the Sub-Sahara Africa (SSA) economy because majority of the population derives their livelihood from the sector (Gashu et al, 2019). The demand for food continues to increase rapidly, as a result of various factors. Recent population projection indicated that Africa population will rise to 9.19 billion by the year 2050 (UNDP, 2008). This projection suggest that the problem of food security may attain a destructive proportion if great effort is not channel to halt the current situation and reverse the food and nutrition insecurity trend.

The food system of Africa is confronted with a set of intertwined challenges. Economic and health crisis in the continent can be associated to the food crisis that is orchestrated with factors like global economic downturn that has caused less money to purchase food, disrupted global supply chains that has reduced Africa's ability to import food, disrupted local agricultural production and productivity due to effect of climate change and many others. The in-depth reasoning of food systems considers complete chain of issues and factors ranging from production, through processing, marketing, distribution, quality control and safety, consumption patterns, food waste management, to recycling of nutrients and other elements of environmental sustainability. Therefore, food and nutritional security issues are premised on balanced attention to issues that drive individual and societal wellbeing.

Currently, about 7,000 plant species out of about 30,000 identified edible plant species have been used in the history of humanity to meet food needs (FAO 1998). Among these species, just 103 crops species provide 90% of the calories in the human diet, while only four of these (rice, wheat, maize and potato) account for 60% of the human energy supply (Tontisirin and Bhattacharjee, 2010, Padulosi et. al., 2013). This implies that quite a lot of crop species are either neglected or forgotten. Africa has enormous potential for agricultural production. Yet, Africa is the most food-insecure region in the world. Low agricultural productivity and value addition are at the heart of the malnutrition, employment and income challenges in the continent. Despite the rich diversity of crop species in Africa, over dependence on few crops has been a major challenge on ecosystems, food diversity and health. Many of the cultivated plant species used for food across the continent have largely been neglected, unrecognized or underutilized.

Increasing civilization has also caused a reduction in the use of traditional foods with associated loss of knowledge on them in relation to their environment. Over the years, the currently forgotten foods were the main source of food (Demi, 2014). They are underutilized in terms of consumption; neglected in terms of research, extension, commercialization and conservation. The long-term neglect of these commodities has dramatically changed the global food system and led to a gradual decline in the consumption of the traditional food resources in many communities, as well as the conveyance of knowledge associated with the plants (Vorster et al., 2008; Bvenura and Afolayan, 2015). Based on this fact, Jaenicke and Höschle-Zeledon, (2006) asserted that diversifying production and consumption habits in favor of the underutilized crop commodities would significantly contribute to improved nutrition and household food security.

The exploration of forgotten commodities has gained prominence following the work of ICRISAT on Sorghum and Millet under the "Smart Food" program which explores varietal development, agronomic practices as well as processing to generate new products. FARA is therefore, aligning with this work to develop the "Smart Food Africa" initiative which sets out to expand the work done by ICRISAT on Sorghum and Millet to other neglected commodities and develop a "smart food" research and development program for their economic utilization. Also, the recent call of Global Forum on Agricultural Research and Innovation (GFAR) for increased attention on forgotten foods offers an opportunity for Africa to re-examine the value of these foods in enriching the continent's food system.

It is against this facts, that The Forum for Agricultural Research in Africa (FARA), in collaboration with the Global forum for agricultural research and innovation (GFAR) embarked on the development of manifesto for the forgotten foods in Africa to meet the increased attention on forgotten foods through holistic review of the situation surrounding the neglect of these foods and drawing on it to develop appropriate action plans to advance these foods, create awareness, that will lead to development of new technologies for production and utilization of these foods and develop appropriate policies and businesses around it. This Africa manifesto on forgotten foods therefore, highlights the joint beliefs, status, policies and required action plans that will promote the foods for ultimate benefits of the continent.

2.0 Forgotten foods and their importance

The term forgotten food refers to crop and livestock commodities that are erstwhile sources of food but have been neglected due to the advent of other food commodities. Forgotten foods are also termed as neglected and underutilized species, indigenous food commodities, orphan crops etc. Padulosi et al, (2011, 2013) defined forgotten foods as crop with little attention or which are entirely ignored by agricultural researchers, plant breeders and policymakers. Other terms used to describe forgotten foods based on current status or future potential of the crops according to various Authors are presented in Table 1.

Name	Reasons adduced for naming	Reference
Abandoned crops	Neglect from research and development	Padulosi (2017)
Alternative crops	Options under extreme environment	Padulosi (2017)
Crops for the future	High potential in future agriculture	CFF (2019)
Disadvantaged crops	Un-favored by research and development	Massawe et al. (2015)
Forgotten crops	Little focus on their research	FAO (2017); Pearce (2013)
Future smart food	High contribution to future food security	Li and Siddique (2018)
Indigenous crops	Native crops	Kamadi (2014)
Life-style crops	Health related benefits	Cannarozzi et al. (2018a)
Local crops	With domestic importance	Padulosi (2017)
Lost crops	Genetic erosion of the germplasm	NRC (2006, 2008, 1996)
Minor crops	Relative to global (major crops) crops	Padulosi (2017)
Neglected crops	Little focus to science and development	Bermejo and León (1994)
Niche crops	Marginal importance in production systems	Padulosi (2017)
Orphan crops	Without champions or crop experts	AOCC (2018); Tadele (2009a, b)
Promising crops	For emerging markets	FAO (2017)
Superfood	Nutritional and health related benefits	Provost and Jobson (2014)
Traditional crops	Used for centuries or even millennia	Padulosi (2017)
Underdeveloped crops	With limited investment	Padulosi (2017)
Understudied crops	Due to little scientific research	Tadele and Assefa (2012)
Underused crops	Due to little scientific advancement	EcoBusiness (2015)
Underutilized crops	Due to little research	Dawson and Jaenicke (2006); Massawe et al. (2015)
Wonder plants	Superiority in nutrition and health related benefits	EcoBusiness (2015)

Source: Tadele Z (2019)

Forgotten foods are versatile foods with multiple uses which range from providing food for both humans and animals to maintain balanced ecosystem and creating opportunity for adaptive management to take place. They contribute immensely to global food and nutritional security by providing affordable, nutritious and healthy products as food for people. Forgotten foods constitute the bedrock of the diversity in traditional food systems of communities in Africa. They play important role to diversify the food base so as to enhance food and nutrition security due to the varieties of nutrients the crop species are capable of providing. They are good sources of macro and micro-nutrients for human consumption including the potentials for bioactive compounds that can contribute to antioxidant activity in the body. They have much higher nutrient content than globally known species or varieties of crops commonly produced and consumed.

Forgotten foods provides improved livelihood and income generation options for subsistence farmers and the general populace (Bharucha and Pretty, 2010). Their sales can make a significant contribution to household income and livelihoods. Many of the forgotten foods are used beyond their fundamental subsistence but as good cash crops through which foreign earnings are provided. They also play important role in environmental maintenance, specifically in terms of sustainable land care and landscaping. Traditional foods, which are basically forgotten, have many social-cultural benefits. They serve as a symbol of heritage, trademark and culture (Mabhaudhi et al., 2016). These foods are fundamental to many cultural identities of diverse ethnic groups (Engler-Stringer, 2010; Sharif et al., 2016). In spite of the value that forgotten foods can potentially contribute to Africa food system they have not attracted sufficient research and development attention.

3.0 Nutritional values of forgotten foods and common crops

Food security is beyond production of more food, but understanding the population dynamics and changes in food consumption. All the people are expected to have access to sufficient, affordable, harmless and nutritious food so as to live a healthy and active life at all times. Food security combines adequate quantity of nutritious food with adequate resource to procure the food. Forgotten foods contribute in no small measure to global food and nutritional security by providing affordable, nutritious and healthy products as food for people, even under the contemporary climate change condition. Several studies have shown that forgotten foods are highly nutritious and contain some essential nutrients required for human good health (Kour et al., 2013; Nyadanu and Lowor, 2015). Many of the forgotten foods have nutrient content much higher than the globally known species or varieties of crops commonly produced and consumed currently, and receiving enormous attentions. They have the potentials to supply the required energy, vitamins, and nutrients in diets thus reducing the over-dependence on energy-rich foods from animal sources and other plant-based sources. The forgotten foods fall into five major food classes, namely cereals, legumes, roots and tubers, and vegetables. The crop varieties in each of the classes have various high quantities of protein, vitamins as well as macro and micro-nutrients such as calcium, iron, potassium, magnesium (Kour et al. 2018; Tadele 2018).

Forgotten foods in the class of cereals such as finger millet (Eleusine coracana), pearl millet (Pennisetum glaucum) and tef (Eragrostis tef) can provide calories of energy, ash, fat and carbohydrate higher than the popular maize. The three forgotten foods can provide protein quantity that is similar to maize and sorghum while finger millet and pearl millet have capability to supply higher fats that either maize or sorghum. The available information have shown that most of the forgotten foods in the class of cereals also have appreciable amount of macro and micro-nutrients. Another important instance is in the legumes. Each of Bambara groundnut (Vigna subterranea), sword bean (Canavalia gladiate), marama bean (Tylosema esculentum), soybean (Glycine max) and dry bean (Phaseolus vulgaris) has potentials to provide calories of energy higher than the popular cowpea. Both the sword bean and Marama bean which are forgotten crops are capable of providing protein, fats, fibre and ash greater than cowpea. In the same vein, bambara groundnut and marama bean possess mineral elements that are either higher or equivalent to cowpea. Owing to its high protein status, cowpea plays important roles in food security by providing nutrient for the resource-limited people in the rural sectors where animal protein is lacking. However, the leguminous based forgotten foods mentioned here outmatch cowpea in the provision of plant-based protein and other nutrients required in growth and improved livelihoods. Table 3 provides a comparison between soybean an example of conventional food commodity and Marama Bean, a forgotten food.

Table 3. Comparison of Nutrient content of a conventional and a forgotten food (100g raw sample)

Nutrients	Soybean (Glycine max)	Marama Bean (Tylosema esculentum)
Energy (kcal)	416	477
Protein (g)	36.5	34.71
Fat (g)	19.9	40.06
Fibre (g)	9.3	3.94
Ash	4.9	3.19
CHO (g)	30.2	14.07
Ca (mg)	277	241
P (mg)	704	454
Na (mg)	2.0	63.75
Mg (mg)	280	274.5
Cu (mg)	1.7	1.04
Zn (mg)	4.9	6.2
Fe (mg)	15.7	3.95

Source : *Mabhaudhi et al. (2019) https://doi.org/10.1007/s00425-019-03129-y*
USDA https://www.soya.be/nutritional-values-of-soybeans.php

Taro (Colocasia esculenta), sweet potato (Ipomoea batatas) and cocoyam (Colocasia esculenta) are examples of forgotten foods in the class of root and tuber crops that are capable of supplying abundant energy, fibre, ash and carbohydrates. They are also good sources of macro and micro nutrients including calcium, phosphorus, sodium, magnesium, zinc and iron. Vegetables are known for the supply of nutrients and vitamins in human nutrition. Several vegetables that were erstwhile used as food are now forgotten even though they are rich in content that can improve food security. For instance, jute mallow (Corchorus olitorius) and wild water melon (Citrullus lanatus L.) stand out in providing energy, protein, fibre, carbohydrate and macro nutrients such as calcium, phosphorus and magnesium. Some other vegetables including amaranth (Amaranthus spp), nightshade (Solanaceae spp) and black jack (Bidens pilosa) are known as good sources of protein, fibre, ash, carbohydrate as well as both macro and micro-nutrients (Appendix 1). Nevertheless, some forgotten foods contain high levels of nutritional nutrients, also some traces of nutrients that are in some cases non-nutritional. The anti-nutritional status renders them less pleasant and edible. This quality may also make them difficult to process (Chibarabada et al., 2017). Thus, research is recommended to be focused on this area.

4.0 Forgotten Foods and Food Security in Africa

Food insecurity has been increasing in Africa due to the effects of climate change, insecurity caused by terrorism, social and boundary conflicts, and other menace among others. Africa has also been consistently faced with myriads of challenges including uncontrolled rapid population growth, persistent economic inequality, climate change threats, youth unemployment, undernourishment, and food insecurity. Thus, almost 33% of the African population are malnourished, which is the highest prevalence in the world. The number of malnourished Africans has almost doubled since the late 1960s, increasing approximately at the sattme rate as population growth (Jean et al., 2006). One of the reasons for this situation is that Africa has deviated from embracing her traditional food system which involves cultivation and use of the traditional foods. Many African communities lost their food sovereignty, losing the right to determine their own food system and its management, which has led to food insecurity (FAO, 2015).

Africa has traditional food systems that maximize use of diversity to alleviate hidden hunger and provide nutrients. The traditional food systems integrate the use of local crops, animal source foods and other components that are now considered forgotten (Baa-Poku, 2018). Food security globally is constrained by several factors including the heavy reliance on very few key staple crops. Over dependence on a few major crops remain a major challenge due to its potential impact and contribution to food security (Ebert, 2014). Forgotten foods have the potential to reduce poverty and improve food security, but they have not been exploited for such purposes. The crops are excellent resources for reducing rural poverty because they can be produced efficiently on a small scale, and their prices are relatively higher than some crops that have received prime attentions by Africans. This can largely contributed to food security in terms of availability, affordability and accessibility.

Diversity of forgotten species genetic resources could be used to further enhance nutrition and food security (Nyadanu, 2015), because they play an important role in diversifying the food base, and enhance food and nutrition security due to the varieties of nutrients the crop species are capable of providing. FAO has estimated that about one billion people globally use indigenous foods in their diets (FAO, 2015). The forgotten foods have a much higher nutrient content than most globally known species that are commonly produced and consumed. They stand out in commodity selection for nutrition sensitive agriculture due to their great potential for improving nutrition.

Forgotten foods are resilient and well adapted to the needs of farmers in marginal agricultural environments. The adaptation of most forgotten foods to low input agricultural systems and their nutritional composition have made them a reference point for having the potential to reduce food and nutrition insecurity, particularly for resource poor households in Africa. The adaptability of forgotten foods suggests that their cultivation is less damaging to the environment and addresses cultural needs. Also, because, the crops serve as alternatives in times of crop failure, they readily fit into different cropping systems or schemes. Thus, they are regarded as main drive towards mitigating food insecurity (Welch and Graham, 1999)

5.0 Challenges and Opportunities of forgotten foods in Africa Food system

The opportunities and challenges of forgotten foods varied with geographical location, condition, social values and culture of the people. This is because, a particular specie of forgotten food might be underutilized in some regions but not in others with regard to the geographical distribution. The resilience of these group of crops made them to be well adapted to a wide range of environmental and cultivation conditions, tolerance to adverse effects of climate change., little or no external inputs for cultivation that culminated to easy cultivation practice.

However, in spite of the potentials, the challenges of the forgotten foods arose from the advent of Green Revolution in the 1960s, when agriculture started to focused mainly on developing few crops especially cereals. As a result, these foods became more popular and replaced many of the forgotten foods (Bvenura and Afolayan, 2015). These led to loss of interest on the value of the forgotten foods and the potential benefits derivable from using them. Many of the forgotten crops are currently neglected by major research, funding agencies, global food manufacturers and marketers.

The neglect has led to zero attention in advances in technology, policy, advocacy or marketing. Due to a lack of modern and industrialized markets for the foods, development or investment both socially and scientifically into their benefits and utilization have been hampered (Mbhenyane, 2017). The absence of reliable seed supply systems for the landraces and varieties poses another major challenge to their adoption in Africa Increased mechanization demands and expectations of the modern food supply chain is causing farmers to focus on fewer and fewer crops (Liebman et al., 2013). Thus, the forgotten crops are abandoned to resource-limited farmers whose production are low.

Beyond the socio-economic factors, another challenge of forgotten foods is in the area of consumption. Some of the foods are difficult to process and some have bitter taste that discourage their consumption. (Uusiku et al., 2010). The chemical, nutritional, and toxicological properties of some of the foods have limited the patronage of the food application, while lack of recipes to follow as guidelines methods of preparation and methods of preservation contributed to low understanding of its utilization (Modi et al., 2006; Vorster et al. 2008; Bvenura and Afolayan, 2015).

Another critical limiting factors towards popularization of most forgotten foods are the poor social perceptions of forgotten foods, lack of interest from research institutions and limited awareness of their value among consumers and challenges in establishing markets for the commercialization of the forgotten foods.

6.0 State of knowledge on the forgotten foods in Africa.

Knowledge on forgotten foods is a pre-requisite towards its adoption and polarization. The knowledge gap on the forgotten varieties have caused limited awareness of these foods and thus negative effect on their consumption and use despite their multiple benefits. Although some Research centers in Africa are initiating studies on few of these forgotten foods, the information on forgotten foods in Africa are still poorly documented, thus very minimal. This can be attributed to the fact that their use within Africa has not been adequately studied (Mbhenyane, 2017). In most African countries, the ethno-botany of forgotten food resources is scarce and poorly documented where available. The available lists of the plants lacks adequate information on their use and management.

Aspects where information or knowledge on the forgotten foods are lacking include its edibility, their seeds, agronomy and use. Similarly, knowledge on the nutritional status of the foods and market access is still meagre. Another aspect where information is important but are still lacking are the acceptability of their products by the general populace, extent of their use and importance in rural economies and their economic value.

Availability of reliable methods for measuring the contribution of forgotten foods to farm households, rural economy and international markets will enhance its acceptability, but very few little information on these important aspect are too old to be acceptable for the current reality. Information on irregularities in their supply, quality standards, storage and processing technology are also lacking. It is however important to note that the pre-colonial traditional knowledge on these forgotten foods are still domiciled with the traditional communities, although these information are gradually been eroded with potentially terrible implications for long-term sustainable food security.

7.0 Exposing the Potentials of Forgotten Foods in Africa through a Manifesto

In the face of raging climate uncertainty, there is an urgent need to diversity our food base to a wider range of food crops species for greater system resilience, and in light of the value and potential roles that can be played by forgotten foods in improving the nutrition and food security of Africa in this circumstance, it is imperative to galvanize the attention of policy makers, the publics and all relevant stakeholders on the need to shift towards a more diversified and resilient food system in which forgotten foods are strongly integrated.

Since the forgotten food are well adapted to the environment, addresses cultural needs, preserve the cultural heritage, highly nutritious and hold many positive characteristics to meet the current needs. It is vital to understand the current human perceptions of these commodities, the societal level of awareness, the level of current use and benefits (Kansiime et al., 2018). It is therefore, imperative to collect and document local knowledge, encompassing all aspects of the forgotten foods from traditional beliefs to utilization and agronomic practices. These information are obtainable from the farmers and local communities. Thereafter, advocacy and promotion of the use of the forgotten foods could then follow by highlighting their importance in comprehensive farming and food systems

A primary tool for achieving this goal is a Manifesto that (i) articulates the shortcomings of the current food system and how utilization of forgotten foods would contribute to overcoming them; (ii) takes stock of past efforts to advance the production and utilization of forgotten foods; and (iii) articulates needed activities and relevant actors that will improve the utilization and production of forgotten foods in a way to achieve CAADP and SDG targets on food and nutrition security and the impact of climate change.

The success of the agenda to increase the utilization of forgotten foods depends on sustained demand for these foods. However, demand is a factor of availability of these foods in quantities as well as forms that are convenient and appealing especially to urban lifestyles. This in turn requires significantly more attention to be directed to research, processing, product development, business development and marketing of forgotten foods.

8.0 Characterization of Forgotten Foods

A prime crop commodity in a particular place could be termed as forgotten in another place due to the utilization status of the crop. Thus, the use of multiple factors to characterize forgotten food; factors such as the prominence of the commodity in household food preference, scale of production, market status, agronomy of the crop, nutritional quality, adaptation to agro-ecology etc. Several authors have classified forgotten foods based on their understanding of the crop in their regions, Mabhaudhi et al (2017) identified 13 priority forgotten foods in South Africa and categorized them into cereals, legumes, root and tuber crops and leafy vegetables based on drought and heat stress tolerance and nutritional value. Dansi et al (2012), in a survey conducted in 50 villages in Republic of Benin, identified 41 neglected and underutilized species forgotten foods base on many factors among which the extent and degree of consumption was paramount. In another study, Chivenge et al (2015) identifies and characterizes forgotten foods in SSA with agronomic potential to those that can grow under water-scarce conditions, water requirements and water productivity.

The Africa Orphan Crop Consortium (AOCC) produced a compilation of different groupings and proposed that it will be most appropriate to characterize the forgotten food in Africa based on the following:

i. Period or life cycle : Annual, short lived and long lived perennial
ii. Consumable, edible parts or purpose of use:
a. Fruit vegetable,
b. Small trees/shrubs with edible fruits, nut etc.
c. Leaf vegetables
d. Medicinal annual crops
e. Edible roots and tubers
f. Industrial annual crops
g. Cereal grains
h. Grain legumes

A review of about 121 compiled forgotten foods found in Africa revealed that about 42% are small trees/shrubs with edible fruits, nuts and seeds, while very few (about 1%) were in the category of industrial annual crops **(Figure 1).** Details of the compilation with their corresponding common names, scientific names, utilization, origin and distributions in Africa are presented in Appendix 1.

The distribution of 121 main forgotten foods in Africa revealed that West Africa had the highest percentage (26%) of the forgotten foods are found in West Africa followed by East Africa (24%), while North Africa had the lowest (6%) **(Figure 2).** Globally, majority of the crops of the forgotten foods originated from Africa (46%), followed by Asia (23%), whereas very few (2%) originated from Europe.

Characterization of Forgotten Foods

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Figure 1: Groupings of Forgotten Foods in Africa

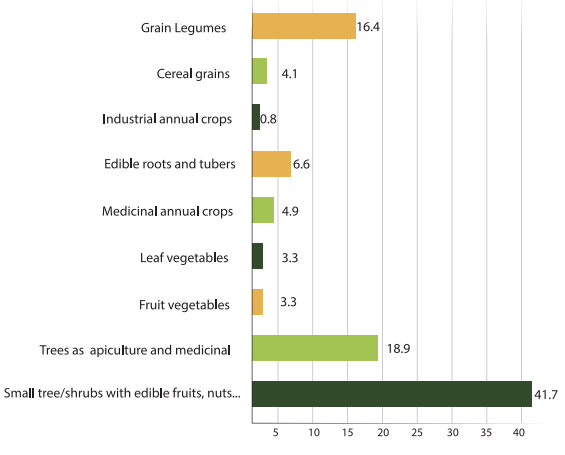
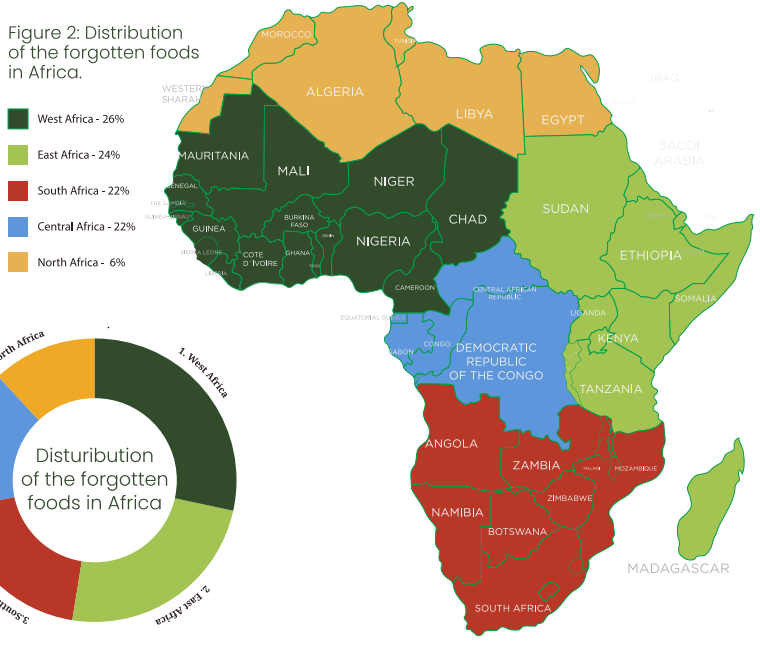


Figure 2: Distribution of the forgotten foods in Africa.



Origin of the forgotten foods cultivated in Africa

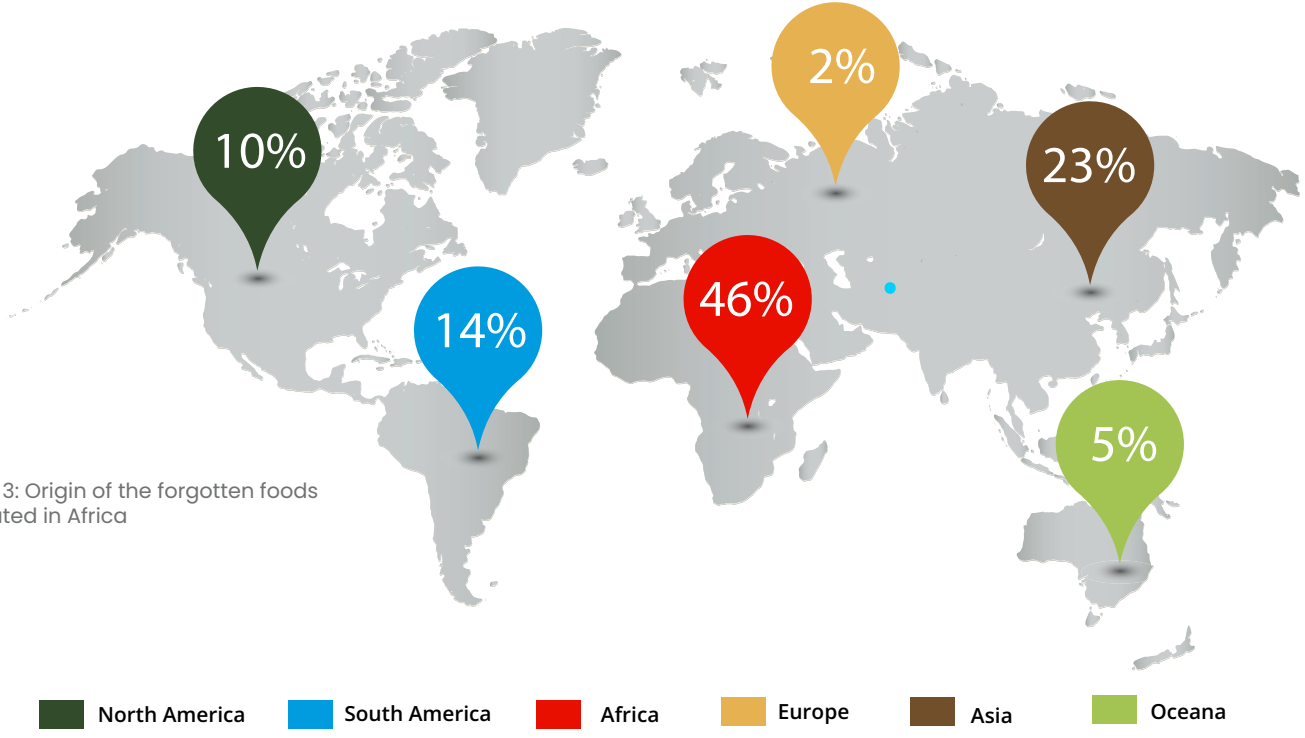


Figure 3: Origin of the forgotten foods cultivated in Africa

9.0 Status and Progress of Research work on Forgotten Foods

Most African forgotten foods have been consumed by local communities without extensive selection and domestication, thereby maintaining genetic diversity for stress and disease tolerance, adaptability, and production traits as well as nutrition. These crops have immense scope for innovation in research, capacity building, social empowerment, and food value chains (i.e., production, processing, consumption, marketing, and product development), but it requires a non-conventional approach which is open, inclusive, and welcoming to involvement and investment from public, private, national, and international partners (Hendre et al., 2019). Therefore, there is need for a paradigm shift from present scenario of neglect to sustainable cultivation, exploration and utilization of the species. In recent years, some stakeholders had advocated for an increased global cultivation and production of these forgotten foods towards sustainable solution to food and protein security, plus agricultural and environmental restoration (Considine et al., 2017; Foyer et al., 2019).

Some efforts are on-going to increase genetic resources and apply innovative conventional breeding techniques to improve the nutritional quality and yield of the forgotten foods alongside enhanced resilience to climate change (Acharjee et al., 2013; Hendre et al., 2019). In view of this, some Agricultural Research Institutions in Africa have commenced works to improve most of the forgotten foods via morphological characterization, phenotypic diversity, nutritional quality, resistance to pests and diseases, adaptation, utilizations, yield improvements, maturity, cooking time etc. (Adewale et al, 2012; Alake and Alake, 2016; Akinyosoye et al., 2017; Popoola et al., 2019; Agbeleye et al., 2020) among others.

Other innovative cropping systems (Leakey 2019) and value-chain approaches involving social scientists were also reported (Bachewe et al. 2019). But there is need to involve the use of molecular markers to shorten the time needed for varietal development, which are not influenced by the environmental conditions.
Apart from the conventional breeding approaches adopted by some Agricultural Research Institutions in Africa for the genetic improvement of Africa foods three major platforms dedicated to research on this crops, their activities and progresses had been reported; namely Modern Plant Breeding Platform (Ribaut and Ragot 2019), Crops for the Future (CFF) (Gregory et al. 2019) and the African Orphan Crops Consortium (AOCC) (Hendre et al. 2019), with the later committed to sequencing the genome of some forgotten foods

Awareness and promotion of some forgotten foods have been done at different fora; the most recent was at the International Food for Future Conference held in Cologne, Germany (Succurro et al. 2019). Advanced tools such as genomics, transcriptomics and metabolomics have been applied to a limited number of forgotten foods (Sood et al. 2019; Joshi et al. 2019). Thus, incorporation of genomics tools in designing breeding programs such as quantitative trait mapping (QTL), genome-wide association mapping (GWAS), and genomic selection (GS) had contributed immensely to the genetic improvement of the crops by reducing the length of varietal improvement program up to a third of the existing traditional pipelines (Hickey et al. 2017).

Progress had been made in several forgotten foods genomic involving genetic engineering (Zargar et al., 2017). DNA-based methods are reliable and had been employed to identify, trace, and certify plant genealogies, origins, and phylogenetic relationships (Jarquin et al., 2014; Takahashi et al., 2016). Application of molecular breeding tools such as marker-assisted selection, genomic selection (GS), and genome-wide association (GWAS) had been appraised to influence scientific efforts for improving grain yield of some forgotten foods n the developing countries (Varshney et al., 2010; Tan et al., 2016). Hence, status and progress of research on forgotten food crops in Africa is presented in Appendix 3

10.0 Pillars of Africa Manifesto, Action Plan and Way Forward.

The Africa manifesto on forgotten food is structured into five important pillars within which specific action will be carried out. The core pillars include

1. Establish a dedicated and functional research and innovation system for holistic development of forgotten foods.
2. Incrementally build an appropriate innovation capacity (infrastructure, equipment and expertise) at local level to enable African research and education institutions develop solutions for increased productivity, resilience to shocks, value-added production and quality assurance for forgotten foods
3. Establish partnerships and strategic alliances to foster the engagement of youth, women for rapid integration of forgotten foods into the national food system and engagement for policy development
4. Facilitate the engagement of private sector for investment into production, processing and marketing of forgotten foods
5. Create a regional pool of financial resources to support research and coherent development efforts on forgotten foods. Such funds should be accessible by institutions and governments which have research topics aligned to regional priorities on forgotten foods

Action Plan and Way Forward.

10.1 Awareness Raising for recognizing the values of forgotten foods by all in the society

Raising awareness in forgotten foods is fundamental to creating a more favorable environment for their sustained production and use. For a healthy food system transformation to occur, consumers need to be aware of the benefits of diversifying their diets and the impact of their food choices, not only on their own health and well-being, but also on the food system and the environment (Padulosi et al. 2009). Policy-makers, research institutions, private sectors, farmers, consumers and other societies should be aware of the concrete benefits including nutritional, cultural and environmental benefits that arise from a broader use of forgotten foods and should be encouraged to share efforts towards common research goals. National and international seminars and conferences should be used to sensitize stakeholders and the public at large to issues surrounding forgotten foods. Special events such as fairs, festivals or national celebrations for World Food Day that attract wide media coverage can also raise the profile of forgotten foods. In addition to the above, awareness should be raised among local farmers on the double value of local crops in terms of nutrition and climate change adaptation through community workshops, school gardens, radio programs and dissemination of brochures, booklets and small pack of the best-performing varieties (IPGRI. 2002, Borelli et al. 2020).

10.2 Creation of novel research development and networking

Novel research development and networking, generating and sharing knowledge on Forgotten Foods, using trans-disciplinary and participatory approaches and integrating community and scientific knowledge to provide a credible evidence base around Forgotten Foods and to blend farmers' practices with new research technologies (e.g. molecular genetics, nutritional profiling, agronomic interventions, digital technologies and applications). Also, the implementation of a structured breeding program that takes advantage of modern crop improvement tools such as genomic selection, speed breeding, genome editing, high throughput phenotyping and breeding digitization would make rapid improvement of the forgotten foods possible, but would require coordinated research investment (Kamenya et al. 2020). Therefore, novel research development and networking could be strengthened through:

a) Participatory Innovation Development (PID) research approach whereby indigenous knowledge are considered.
b) Incorporation of traditional knowledge into research initiatives.
c) Partnership with farmers' commodity chain development known as co-research and co-innovation by GFAR
d) Development of food utilization technologies that will further expose the potentials of these crop by Human nutritionists and food technologist.
e) A more vigorous attention on germplasm conservation at the research level.
f) Artificial Intelligence (Machine Learning (ML).
g) Development of a comprehensive catalogue and o we have a database at national and regional level for all forgotten food or crops

In order to objectively prioritize the next line of research action on the forgotten foods, the individual opinions obtained through a web base questionnaire suggested priority of research in the following order:

1. Market research
2. Development of a seed system and germplasm conservation
3. Food processing and development of new food products
4. Agronomic integration into farming systems
5. Varietal improvement

10.3 Promotion of concerted efforts in participatory plant breeding that will improve the adaptation of forgotten foods

Participatory plant breeding (PPB) is a long-standing concept and framework which has been applied in a number of developed and developing countries. It combines modern science with local knowledge, brings plant breeding back into farmers' hands and encourages a return to crop diversity (Galluzzi et al. 2014). Concerted efforts in participatory plant breeding to improve the adaptation of Forgotten Foods to social, economic and ecological conditions, and nutritional value by incorporating farmers' knowledge of local circumstances and to improve their contribution to food security; these efforts should also aim at reducing the level of anti-nutrients in the various Forgotten Foods. Several research for development have been channeled toward improving the biodiversity but the smallholder farmers and indigenous people who have for centuries been custodians of this rich biodiversity have not been actively carried along in the programs. Involvement of all the relevant stakeholders in the selection process of any Forgotten Foods will make rapid progress in the desired direction possible. Scientists, especially plant breeders require farmers' indigenous knowledge and information on crops available from the interaction of the farmers with the species over the years. The farmers understand the crop and the agro-ecologies in which the crop will be domiciled better. These information are useful not only for high production or high productivity of the crops but acceptability and adoption.

10.4 Development of sustainable seed systems that will enhance accessibility, availability and affordability of high-quality seeds of forgotten foods.

Seeds are the foundation for agriculture, most especially forgotten foods. Access to quality seeds of forgotten foods that are adapted to the needs and production systems of farmers is an essential feature of sustainable crop production. Good seed requires constant care to prevent loss of quality and to ensure high yield for farmers. Therefore, a sustainable seed system ensures that farmers and other stakeholders have timely access to affordable quality seeds and planting materials of the most suitable crop varieties (FAO, 2017). Development of sustainable seed systems, facilitating conservation, access, availability, use and exchange of high quality seeds of forgotten foods by farmers. Effective linkages between farmers' knowledge and scientific knowledge are key to the improvement of seed of underutilized crops. This accounts for opportunities for crop improvement and for improving seed availability and quality. Strict application of the formal seed system has contributed to continuous neglect of most of the forgotten foods, because of low economic return on investment for the forgotten foods. Sustainable forgotten foods seed system will require more actor-orientation that is focused on farmers' capacities and needs. In this regard, capacities of main actors (farmers) are strengthened to collect, share and assess information about the crop species. The seed production and marketing enterprises of these crop species can be liberalized where market opportunities are limited and preferences are diverse. Over the years, most donor-funded seed development programs for staple crops have improved the capacity of seed companies, as well as their market connections and distribution systems, efforts should be directed towards the application of donor funded seed programs towards forgotten foods. The role of regulations must not be underestimated in the design and implementation of support to underutilized species.

10.5 Promote collection and conservation of genetic resources of forgotten foods for germplasm exchange

The success of crop improvement for major crops, which resulted in green revolution, was mainly dependent on the well collected and conserved genetic diversity. Similar recognition for safeguarding the valuable genetic diversity of forgotten foods is needed to ensure the fullest use of these crops. Therefore, conservation of genetic resources of these crops through a complimentary ex situ and in situ approach will ensure food security for future in Africa. In addition, Ethnobotanic surveys have shown that hundreds of forgotten foods are still to be conserved and used, representing an enormous wealth of agro-biodiversity that has the potential to contribute to improved incomes, food security and nutrition mostly in rural areas of developing countries (ATDF, 2009). Respect of rights of farmers implemented locally allowing them to use, save, exchange and sell their Forgotten Foods, protect their traditional knowledge and participate in benefit sharing. Crop genetic resources result from the collective efforts over many generations of crops and farming people.

They are derived from the natural processes or crop evolution such as mutation, natural selection, exchange and decentralized selection. All these happen on farmers' farms through shared knowledge, seed exchange, and the accumulation of valuable traits in crop populations. Though the science of the process is lacking, the importance of this cannot be over-emphasized. The effort and knowledge of the farmers on the technology or innovation need to be protected in such a way to encourage them share such information in the future.

10.6 Development of specialized capacity instrument for NARES and relevant institutions towards development of forgotten foods.

Capacity building across disciplines and with multiple stakeholders, including researchers, farmers, women, youth and the private sector, is required for effective research and development of forgotten foods. Close collaboration should be promoted with NARES, NGOs, CBOs, private sectors and international organizations. Transfer of technology and information from one region to another in the context of building capacities to use and conserve forgotten crops should be pursued whenever possible. Training more next-generation plant breeders in a formalized but extremely practical setting that is deeply rooted in traditional knowledge can be adopted to increase the ratio of plant breeders to the number of crops, most especially, the forgotten foods.

Also, capacity building and support towards seed production of forgotten foods that will ensure timely availability of seed and genetic resources of the forgotten foods to the stakeholders should be encouraged. In addition, farmer training should be carried out through farmer field days, exposure and exchange visits, demonstration plots, and workshops. Therefore, a well-structured capacity building initiative with more inclusive approach that uses the indigenous agricultural perspectives should be included.

10.7 Facilitation of better access to markets, support to short supply chains and alternative retail structures.

Better access to markets, support to short supply chains and alternative retail structures, stimulation of demand for Forgotten Foods in a broader context of promoting green and circular economy as a livelihood opportunity for local stakeholders. It is crucial to create awareness of potential markets and market demand for forgotten foods among stakeholders along the value chain including farmers, wholesalers, retailers, national agricultural extension and marketing organizations etc. Also, farmers rely primarily on collectors and traders to get information on current and future market demands and prices for agro/food products through mass media such as TV and radio therefore, it is necessary to establish TV and radio channels and others mass media to provide market information to smallholder farmers.

10.8 Encourage more advocacy and evidence-based policy change.

More advocacy and evidence-based policy change, including incentives for Forgotten Foods cultivation and conservation and policies that can help family farms to innovate within a system that recognizes their diversity and the complexity of challenges they face. This include policies to include Forgotten Foods in public feeding programs. Intensification of advocacy on utilization and nutrient benefit derived from Forgotten foods can be done through the use Internet knowledge repositories, promotion of food festivals, diversity fairs, food competitions, food tasting using indigenous foods and possibly introduction of annual special day of Underutilized Food Resources. Better policy and advocacy are required to support the research, cultivation and commercialization of forgotten foods.

10.9 Introduction of knowledge on forgotten foods into teaching modules in educational programs.

Introduction of forgotten foods into education programs through systems' analysis, functional capacities (including engaging in collaborative activities, mobilizing new partners to create institutional consortia, and influencing the policy environment) blended with technical capacities to equip extension and research agents with skill sets to foster innovations around Forgotten Foods. The realization of the need to develop a well-researched community of practice (CoPs) that will run a smart characterization of food commodities will create needed attention for the forgotten foods. Therefore, a well-structured capacity building initiative with more inclusive approach that uses the indigenous agricultural perspectives should be included in the School curricula.

Most often the ecological and technological knowledge about forgotten foods is lost or only limited information is available for smallholder farmers who mainly grow these forgotten crops. Thus, training courses for local farmers, extension workers, and members of households for obtaining pertaining knowledge and skills necessary for production and household preparation of forgotten foods should be conducted. Such training courses should include crop management, variety selection and developing new products etc. This will offer smallholder farmers a development pathway that will builds on their existing knowledge and on the principles of resilience

10.10 Encouraging more advocacy and evidence-based policy change.

More advocacy and evidence-based policy change, including incentives for Forgotten Foods cultivation and conservation and policies that can help family farms to innovate within a system that recognizes their diversity and the complexity of challenges they face. This include policies to include Forgotten Foods in public feeding programs. Intensification of advocacy on utilization and nutrient benefit derived from forgotten foods can be done through the use Internet knowledge repositories, promotion of food festivals, diversity fairs, food competitions, food tasting using indigenous foods and possibly introduction of annual special day of forgotten food resources. Better policy and advocacy are required to support the research, cultivation and commercialization of the forgotten foods.

10.11 Adoption of new metrics and indicators to show the value of forgotten foods

People do not value indigenous foods and the potential benefit derivable from using them, thus they are neglected. Adoption of new metrics and indicators to show the value of the forgotten foods in terms of nutrition, resilience to climate change, cultural richness and sustainable livelihoods will change the perception of people about the crops. Climate change has affected the physical availability of food, its economic and physical accessibility, use and the stability of these three dimensions over time. The consequences of climate change on agricultural sector has aggravated the multiple stress of malnutrition. Therefore, crop diversification and promotion of the food base, which is critical to meet the nutritional needs of the population and ensure the sustainability of soil health and productivity is achievable through change of the metrics used in accessing the importance of cultivated crops.

10.12 Fund and resources mobilization for investment on Forgotten Foods

Globally, research funds are usually not available for forgotten foods as many funding agencies or organizations are skeptical about their sustainable utilization and overall benefits to human and environment. Considering the potentials of forgotten foods, it is necessary that national and international research and development donors in the field of agriculture prioritize forgotten foods grants. Major concerns in mobilizing resources must be to ensure that there are clear and identifiable benefits to farmers, consumers and other stakeholders that real improvements occur in the information available on forgotten foods, and that future needs for its diversity are adequately safeguarded. In addition, the funding mechanisms considered to be more appropriate according to individual public opinions gathered through a web base questionnaire suggested that 5% of the large corporation's corporate social responsibility fund could be allocated to support national research.

11.0 Conclusion

The potential benefit desirable from expanding the cultivation and utilization of most African forgotten foods is enormous. Most especially, in the critical period of uncertain climate situation that endangers the food security of the most African countries. However, a wide gap exist between these potentials and the current actual utilization due to inadequate knowledge, low research interest, unfavorable government policies and many others. A prompt attention, in terms of re-orientation and education of public, policy makers and relevant stakeholders towards making a strong advocacy for re-new interest in the forgotten food crops will re-position the continent in term of food security. The support of donor agency continental, regional institutions and states in bringing back the forgotten foods to the mainstream of Agricultural activities will fast track the realization of the hidden benefits of these foods.

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Appendix I:

Nutritional value of sample forgotten foods and common crops (100 g portion of raw samples)

Crop	Scientific Name	Common name	Energy(kcal)	Protein(g)	Fat (g)	Fibre(g)	Ash	CHO(g)	Ca(mg)	P (mg)	Na (mg)	Mg (mg)	Cu (mg)	Zn (mg)	Fe (mg)
Cereals	Zea mays L.	Maize	339	13.7	2.47	2.7	1.78	71	34	508	2	3.01	0.55	4.16	3.01
	Sorghum bicolor L.	Sorghum	329	10.9	3.2	2.3	1.6	73	27	215	4	103	0.3	1.5	2.6
	Eleusine coracana	Finger millet	363	11	5	2.2	1.9	69	25	-	-	-	-	-	-
	Pennisetum glaucum	Pearl millet	378	9	4	1.5	1.9	84	23	10	-	-	-	-	1.8
	Eragrostis tef	Tef	367	13	2.4	8	2.49	73	0.19	13	0.01	354.18	-	37.3	50.78
Legumes	Glycine max	Soybeans	416	36.5	19.9	9.3	4.9	30.2	277	704	2	280	1.7	4.9	15.7
	Vigna unguiculata (L.) Walp.	Cowpea	357.1	24.7	4.8	2.8	4.2	51.76	180.46	310.9	107.24	1.74	9.9	5.3	4.9
	Vigna subterranean	Bambara	386.32	21.85	6.9	3.42	3.6	53.39	219.26	266.1	11.9	2.6	0.41	7.9	7.02
	Phaseolus vulgaris	Dry bean	333	21.8	2.5	1.8	4.1	2.5	183	-	101	-	-	-	4.7
	Lablab purpureus	Lablab	117	26.86	0.27	-	3.96	67.23	-	8	-	-	-	0.38	0.76
	Canavalia gladiate	Sword Bean	1560.3	28.39	7.84	8.23	5.63	49.91	-	-	-	-	-	-	-
	Tylosema esculentum	Marama bean	477	34.71	40.06	3.94	3.19	14.07	241	454	63.75	274.5	1.04	6.2	3.95
Root and Tuber	Colocasia esculenta	Taro	102	7.79	0.65	3.01	2.44	86.11	55	1.6	-	-	-	1.67	-
	Ipomoea batatas	Sweet potato	86	1.6	0.1	3	1.05	20.1	30	47	55	25	3	249	0.42
	Colocasia esculenta	Cocoyam	112	1.5	0.2	4.1	-	26	-	-	-	-	-	-	-
Vegetables	Amaranthus spp	Amaranth	49	4	0.2	2.87	3.42	7.86	1686	487	347	82	3	56	25
	Solanaceae spp	Nightshade	55	3	0.6	2.42	2.24	9.03	2067	478	431	3	6	23	85
	Bidens pilosa	Black jack	39	5	0.6	2.92	2.82	3.72	1354	504	290	21	10	22	17
	Corchorus olitorius	Jews Mallow	392	20.9	5.2	45.61	-	55.5	1760	490	801.2	15.5	11.3	12.4	53.3
	Sinapis arvensis	Wild mustard	26	2.7	0.2	1.1	1.4	4.9	-	-	-	-	-	-	-
	Lagenaria siceraria	Bottle gourd	14	0.62	0.02	0.5	0.5	3.39	26	13	2	0.089	0.034	0.7	0.2
	Brassica rapa subsp. Pekinensis	Chinese Cabbage	21	9	1	1	1.4	22	152	32	29	42	0.07	0.3	1.4
	Solanum retroflexum	Sun–berry	38	5.8	0.8	1.4	8.8	5	442	75	-	-	-	-	4.2
	Citrullus Lanatus L.	Wild water melon	296	3.5	0.4	3.8	1.66	13.1	212	119	9	59	0.2	0.74	6.4

Source: Mabhaudhi et al. (2019) and USDA https://www.soya.be/nutritional-values-of-soybeans.php

Appendix 2:

List of compiled 121 cultivated NUS in Africa with their corresponding common names, scientific names, utilization, origin and distributions in Africa

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
						WA	CA	EA	SA	NA
1	Abelmoschus caillei	Okra	The West African okra, is a plant species in the family Malvaceae. It originated as an allopolyploid hybrid of Abelmoschus esculentus and A. manihot.	It is used as a vegetable.	West and Central Africa	X	X			
2	Adansonia digitata	Baobab	The tree is characteristic of thorn woodlands of the African savannahs, which are characterized by low altitudes with 4-10 dry months a year split into 1 or 2 periods i.e arid and semi-arid areas.	The fruit is very rich in vitamin C and B2 and makes a refreshing drink. The roots produce a useful red dye. In east Africa, liquid from the pulp used to brew beer and seed pulp as fermenting agent in some local beer	Angola, Botswana, Burkina Faso, Cameroon, Chad, Congo, Eritrea, Ethiopia, Gambia, Ghana, Kenya, Mali, Mozambique, Namibia, Niger, Nigeria, Senegal, Somalia, South Africa, Sudan, Tanzania, Togo, Zambia, Zimbabwe	X	X	X	X	
3	Allanblackia floribunda	Veg tallow tree	It is an evergreen forest tree confined to tropical Africa, to 30 m tall. Bole straight, occasionally fluted. Bark dark brown, patchy; slash thin, reddish at the surface, yellow beneath, exuding a sticky yellow juice. Branches slender, drooping and often conspicuously whorled.	Seeds and fruits are edible. The seeds yield a vegetable butter while the bitter seedcake is used as an animal feed.	Angola, Benin, Cameroon, Congo, Ghana, Nigeria, Sierra Leone, Tanzania, Uganda	X	X	X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
4	Allanblackia stulhmanii	Allanblackia	Allanblackia stuhlmannii is a tall evergreen forest tree to 40 m tall, with a straight, occasionally buttressed bole. The branches are usually drooping and often conspicuously whorled. Bark dark grey or black, sometimes smooth or with rough squares scales. The slash is red with white stripes, fibrous/ granular, exuding a clear exudate latex, which later turns yellowish.	Seeds are pounded and cooked to extract an edible fat. In Amani, Tanzania the seed is being used as a butter substitute in manufacture of chocolate. GAPEX company is using seed for oil extraction.	Tanzania		X	X		
5	Allium cepa	Onion	The onion is a vegetable and is the most widely cultivated species of the genus Allium. This genus also contains several other species variously referred to as onions and cultivated for food.	Onions are commonly chopped and used as an ingredient in various hearty warm dishes. It can be baked, boiled, braised, grilled, fried, roasted, sautéed, or eaten raw in salads.	Central Asia	X	X	X	X	X
6	Amaranthus cruentus	Grain amaranth	Amaranthus cruentus is a flowering plant species that yields the nutritious staple amaranth grain. It is one of three Amaranthus species cultivated as a grain source, the other two being Amaranthus hypochondriacus and Amaranthus caudatus.	It is used as a vegetable.	North and Central America	X	X	X		
7	Amaranthus tricolor	Vegetable amaranth	It is one of several species of amaranth cultivated in warm regions across the world. It is an ornamental plant.	It is used as a vegetable. It is C4 carbon fixation plant.	South America	X	X	X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
8	Anacardium occidentale	Cashew	Anacardium occidentale is a medium-sized tree, spreading, evergreen, much branched; grows to a height of 12 m. It requires high temperatures; frost is deleterious. The tree can adapt to very dry conditions as long as its extensive root system has access to soil moisture. In drier areas (800-1000 mm of rainfall), a deep and well-drained soil without impervious layers is essential.	Fibre, Timber, Tannin or dyestuff, Lipids, medicine, Gum, Intercropping and Alcohol	Brazil, Mexico, United States of America	X		X	X	
9	Annona reticulata	Custard Apple	Annona reticulata is a low, erect tree, with a rounded or spreading crown and trunk 25-35 cm thick. Height ranges from 5-10 m. The ill-smelling leaves are deciduous, alternate, oblong or narrow-lanceolate, 10-20 cm long, 2-5 cm wide, with conspicuous veins.	Fibre, Timber, Tannin or dyestuff, medicine	Belize, Guatemala	X		X	X	
10	Annona senegalensis.	Wild Custard Apple	Annona senegalensis is a shrub or small tree 2-6 m tall but may reach 11 m under favourable conditions; bark smooth to roughish, silvery grey or grey-brown, with leaf scars and roughly circular flakes exposing paler patches of under bark. Young branches with dense, brown, yellow or grey hairs that are lost later	Fibre, Timber, Tannin or dyestuff, medicine, essential oil	Botswana, Cameroon, Congo, Cote d'Ivoire, Democratic Republic of Congo, Ethiopia, Gambia, Guinea, Kenya, Lesotho, Mali, Mozambique, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Uganda	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
11	Arachis hypogaea	Groundnut	Groundnuts are produced in the tropical and subtropical regions of the world, on sandy soils. It can be erect or prostrate with a well developed taproot and many lateral roots and nodules. The leaves are opposite and pinnate with four leaflets; each leaflet is 1 to 7 cm long and 1 to 3 cm across. The flowers are 1.0 to 1.5 cm across, bright yellow or yellowish orange with reddish veining	It is consumed as peanut butter or crushed and used for the groundnut oil or simply consumed as a confectionary snack roasted, salted or in sweets. In other parts of the world they are boiled, either in the shell or unshelled.	Tropical part of South America (Brazil)	X	X	X	X	X
12	Artocarpus altilis	Breadfruit	It is a moderately fast growing, single-stemmed, evergreen tree of 10-15 m or more. Breadnut is a dominant component of the vegetation of alluvial forests in lowland areas and is one of the first species to appear on the tops of frequently flooded banks of rivers.	Fodder, Apiculture, Timber, Medicine, Soil improver	Indonesia, Papua New Guinea	X	X			
13	Artocarpus heterophyllu	Jack Tree	It reaches 8-25 m in height; straight stemmed, branching near the base at an angle of 32-88 deg. It grows in tropical, near tropical and subtropical regions. The species extends into much drier and cooler climates than do other Artocarpus species. It can also withstand lower temperatures and frost.	Fibre, Timber, Tannin or dyestuff, medicine, Gum or resin, Latex or rubber and Alcohol	Bangladesh, India, Malaysia			X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
14	Avena sp.	Ethiopian Oats	Stems are erect, tend to be small, and are fairly stiff, and panicles are equilateral, medium in size, and very drooping	they are rolled or crushed into oatmeal, or ground into fine oat flour. Oatmeal is chiefly eaten as porridge, but may also be used in a variety of baked goods, such as oatcakes, oatmeal cookies, and oat bread. Oats are also an ingredient in many cold cereals, in particular muesli and granola. Oats may also be consumed raw, and cookies with raw oats are becoming popular	Europe, Asia and northwest Africa	X	X	X	X	X
15	Balanites aegyptiaca	Balanites	It is a multi-branched, spiny shrub or tree up to 10 m high. It has wide ecological distribution; however, it reaches its maximum development as an individual tree on low-lying, level alluvial sites with deep sandy loam and uninterrupted access to water such as valley floors, riverbanks or the foot of rocky slopes. It is intolerant to shade after the seedling stage and therefore prefers open woodland or savannah for natural regeneration.	Fodder, Fibre, Timber, Lipids, Medicine, Gum or resin, Alcohol	Algeria, Angola, Benin, Burkina Faso, Burundi, Cameroon, Chad, Cote d'Ivoire, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Guinea, India, Israel, Kenya, Libyan Arab Jamahiriya, Morocco, Myanmar, Nigeria, Saudi Arabia, Senegal, Somalia, Sudan, Tanzania, Uganda, Yemen, Republic of, Zambia, Zimbabwe	X	X	X	X	X

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
16	Basella alba	Vine spinach	Basella alba is an edible perennial vine in the family Basellaceae. It is found in tropical Asia and Africa where it is widely used as a leaf vegetable. It grows well under full sunlight in hot, humid climates and in areas lower than 500 metres (1,600 ft) above sea level. It grows best in sandy loam soils rich in organic matter with pH ranging from 5.5 to 8.0	It is rich in vitamins A and C, iron and calcium. it is used to make different kinds of curries. Also, used to make red dye, snack item, curries and saga	Tropical Asia and Africa			X	X	
17	Boscia senegalensis	Aizen, Nabedega	Boscia senegalensis, or hanza, is a member of the family Capparaceae. It grows in altitudes of 60–1,450 m (200–4,760 ft), in temperatures between 22–30 °C (72–86 °F) and with rainfall conditions of 100–500 mm (3.9–19.7 in) annually. It can be found growing in marginal soils: rocky, lateritic, clay stony hills, sand dunes, and sand-clay plains.	Fruits are a significant source of carbohydrates, seeds are sufficiently nutritious, roasting seeds as a coffee bean, fermenting fruit into beer, processing leaves into medicinal applications.	Algeria, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Ghana, Guinea, Kenya, Mali, Mauritania, Niger, Nigeriaa, Senegal, Somalia, Sudan and Togo	X	X	X		X
18	Brassica carinata	Ethiopia Mustard	Brassica carinata is a species of flowering plant in the Brassicaceae family. It is referred to by the common names Ethiopian rape, Ethiopian mustard It is believed to be a hybrid between Brassica nigra and Brassica oleracea. The flowers attract honey bees to collect pollen and nectar.	Eaten as a leaf vegetable. It is oilseed crop, has been used to develop an aviation biofuel for jet engine.	Originated in the highland plateaus of Ethiopia and adjoining parts of East Africa and the Mediterranean coast			X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
19	Cajanus cajan L. Millsp	Pigeon pea	Pigeon pea is a leguminous crop grown in the tropics and subtropics.It has a diploid genome with somatic chromosome number of 2n = 22. It is an erect, perennial shrub,or woody plant widely grown in the tropical regions. The fruit of Cajanus cajan is a flat, straight, pubescent pod, 5-9 cm long x 12-13 mm wide. It contains 2-9 seeds that are brown, red or black in colour, small and sometimes hard-coated	it is highly proteineous and the seeds can be prepared into various meals and serves as a substitute for cowpea. The pods, seeds and leaves are excellent fodder for cattle, sheep and goats ,	East Africa and India	X		X	X	X
20	Canarium madagascariense	Canarium nut, Ramy nut	Canarium is a genus of about 100 species of tropical and subtropical trees, in the family Burseraceae. Canarium species grow up to large evergreen trees of 40–50 m (130–160 ft) tall. They are dioecious, with male and female flowers growing on separate trees. The trees and their edible nuts have a large number of common names in their range.	Several species have edible nuts. It produces nutritious fruit with a creamy taste.	Tropical Africa, south and southeast Asia	X			X	
21	Canavalia ensiformis	Jack bean	it is characterised by anumber of primitive characters: the often-woody vine habit, relativelylargeflowers with prominent discs around the ovary,. The crop tolerates adverse environment, drought, heat, and leached soils; also it resists pest attacks. Jack bean possesses deep root system which enables the plant to penetrate deeply into the soil which enables it to withstand very dry conditions. It grows up to 2 m high with 8-20 cm long trifoliate leaves and a strong root system. Flowers are pink, mauve or white with a red base. Pods are up to 36 cm long and contain 1-2 cm long, ellipsoid seeds.	It is mainly grown for its nutritious pods, seeds, and as fodder. It is a forage crop with high green manure capacity to enrich the soils and also to control soil erosion. The leaf of jack bean contains crude proteins and fiber comparable to other legumes. is a good sources of protein, 23% to 34%, and carbohydrate 55%. It is also a good source of Ca, Zn, P, Mg, Cu and Ni	Tropical Africa and Central and South America	X	X	X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
22	Canavalia gladiata L.	Sword bean	It is a vigorous perennial climber plant usually cultivated as an annual.	It is important source of food, leafy vegetable, medicine, forage, and as cover crop. The red sword bean is one of the edible beans of China reportedly rich in antioxidant polyphenols with great medicinal uses	Asia	X		X		
23	Carica papaya	Papaya	Carica papaya is an evergreen, tree-like herb, 2-10 m tall.It grows satisfactorily in a wide range of areas from the equatorial tropics to temperate latitudes. However, it must be grown in warm, sunny sites sheltered from wind; preferably below 1500 m	The ripe fruit is edible. It can be used to make fruits salads, refreshing drinks, jam, jelly, marmalade, candies and crystallized fruit	Costa Rica, Mexico, United States of America	X	X	X	X	X
24	Carissa spinarum	Carissa	Carissa spinarum, the conkerberry or bush plum, is a large shrub of the dogbane family Apocynaceae. It is most often found in semiarid coastal regions on fine-textured soils such as clays and clay-loams	Used as edible and medicinal plant.	Tropical regions of Africa, Southern Asia, Australia, and various islands of the Indian Ocean				X	
25	Casimiroa edulis	White sapote	Casimiroa edulis is an evergreen tree to 18 m tall, with spreading, often drooping branches and a broad leafy crown. Bark light-grey, thick and warty. The white sapote occurs in subtropical deciduous woodlands and low forests.	The fruit is edible. The plant is used as timber, medicinal, Ornamental	Bahamas, Costa Rica, Guatemala, India, Israel, Kenya, Mexico, New Zealand, Nicaragua, Philippines, South Africa, United States of America			X	X	
26	Cassia obtusifolia	Sickle Senna	Senna obtusifolia is a legume in the genus Senna, sometimes separated in the monotypic genus Diallobus	The leaves of the plant are fermented to produce a high-protein food product. Its leaves, seeds, and root are also used in folk medicine in Asia	North, Central, and South America, Asia, Africa, and Oceania,	X	X	X	X	X

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
27	Celosia argentea	Celosia	Celosia argentea, commonly known as plumed cockscomb, or the silver cock's comb, is a herbaceous plant of tropical origin, they grow best in full sunlight and should be placed in a well-drained area. It is known for its very bright colors. It is a tender annual that is often grown in gardens. The flowers are hermaphrodites and and the plant also exhibits dodecaploidy.	The leaves and flowers are edible. It is used in Africa to help control growth of the parasitic Striga plant. It can also be used in soaps. It is one of the main boiled greens in West Africa	India and China	X	X	X		
28	Chrysophyllum cainito	Star apple	Chrysophyllum is a group of trees in the Sapotaceae. The genus is native to tropical regions throughout the world. Often growing rapidly to 10–20 m or more in height. The flowers are small (3–8 mm), purplish white and have a sweet fragrant smell; they are clustered several together, and hermaphroditic (self fertile).	The fruit is edible.	South America	X				
29	Citrullus lanatus	Watermelon	Citrullus lanatus is a plant species in the family Cucurbitaceae, a vine-like flowering plant originally from West Africa. It is cultivated for its fruit. The watermelon is an annual that has a prostrate or climbing habit. Stems are up to 3 metres (10 feet) long and new growth has yellow or brown hairs.	The leaves and flowers are both edible. Leaves used as a medicinal herb. The plant is useful for intercropping due to its insect repellent properties.	Africa	X	X		X	X
30	Citrullus lanatus)	Melon	Watermelon is grown in favorable climates from tropical to temperate regions worldwide for its large edible fruit, which is a berry with a hard rind and no internal divisions, and is botanically called a pepo. The sweet, juicy flesh is usually deep red to pink, with many black seeds, although seedless varieties exist	The fruit can be eaten raw or pickled, and the rind is edible after cooking. It may also be consumed as a juice or as an ingredient in mixed beverages.	Africa	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
31	Cleome gynandra	Spiderplant	Cleome gynandra is a species of Cleome that is used as a green vegetable. It is an annual wildflower native to Africa. It is an erect, branching plant generally between 25 cm and 60 cm tall. Its sparse leaves are each made up of 3-5 oval-shaped leaflets. The leaves are edible	The leaves and flowers are both edible. Leaves used as a medicinal herb. The plant is useful for intercropping due to its insect repellent properties	Africa	X	X	X	X	
32	Cocos nucifera	Coconut	Cocos nucifera trees have a smooth, columnar, light grey-brown trunk. Tall selections may attain a height of 24-30 m; dwarf selections also exist. It is grown in coastal areas of the tropics and subtropics, it requires a hot, moist climate and deep alluvial or loamy soil.	Fibre, Timber, Lipids, Ornamental, Alcohol	Fossil coconuts have been found as far apart as India and New Zealand	X		X		
33	Colocasia esculenta	Taro	Colocasia esculenta is a perennial, tropical plant primarily grown as a root vegetable for its edible, starchy corm. The plant has rhizomes of different shapes and sizes.	The corm and leaves are edible. The leaves are a good source of vitamins A and C vitamins and contain more protein than the corms	It is native to tropical Asia	X				
34	Corchorus olitorius	Jute mallow	It is a species of shrub in the family Malvaceae. It is an erect herbaceous plant, fairly branched and grows about 1.5 m high. The plant prefers a fertile, humus-rich, well-drained alluvial soil but also grows well in suboptimal soil conditions.	Fibre and Textile, Culinary, Nutrition, Medicinal aspects.The leaves and young fruits are used as a vegetable, the dried leaves are used for tea and as a soup thickener, and the seeds are edible	India	X	X	X	X	
35	Crassocephalum rubens	Yoruban bologi	Crassocephalum rubens, also called Yoruba bologi, is an erect annual herb erect growing up to 80 cm tall.	Its mucilaginous leaves are used as a dry or fresh vegetable in a variety of dishes, and as medicine for several different ailments.	Tropical Africa, India	X			X	
36	Crotalaria juncea	Sunn hemp	Crotalaria juncea is a tropical Asian plant of the legume family Fabaceae. It is generally considered to have originated in India. It is widely grown throughout the tropics and subtropics.	Source of green manure, fodder, green manure, lignified fiber obtained from its stem. Sunn hemp is also being looked at as a possible bio-fuel.	India				X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
37	Cucumis metuliferus	Horned Melon	Cucumis metuliferus, is an annual vine in the cucumber and melon family. Its fruit has horn-like spines. It is native to Sub-Saharan Africa.	It is very rich in vitamin C and dietary fiber.	Tropical and sub-tropical Africa				X	
38	Cucurbita maxima	Pumpkin	Cucurbita maxima, one of at least four species of cultivated squash, is one of the most diverse domesticated species. This species originated in South America from the wild Cucurbita andreana over 4000 years ago. The two species hybridize quite readily but have noticeably different calcium levels.	It can be roasted, baked, and mashed into soups. The seed of C. maxima is used in treating parasites in animals.	South America	X			X	
39	Cyphomandra betacea	Cape tomato	Cyphomandra betacea is a semi-woody shrub or small tree 2-3 m high, rarely 5 m. It thrives at elevations of 1000 m and more; it does well even above 2000 m if the mean monthly temperature remains above 10°C.	Tannin or dyestuff, Medicinal, Ornamental	Native to forests of the Andes of Peru and Argentina	X			X	
40	Dacryodes edulis	Safou, African plum	Dacryodes edulis is a medium-sized, evergreen tree attaining a height of 18-40 m in the forest but not exceeding 12 m in plantations. It is generally branched from low down, with a deep, dense crown. It is found only in gallery forest and on swampy ground.	Timber, Tannin or dyestuff, Lipids, Medicinal, Gum or resin, Ornamental, Oil	Central Africa and the Gulf of Guinea	X	X	X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
41	Dacryodes edulis	Butterfruit	It is an evergreen tree attaining a height of 18–40 meters in the forest but not exceeding 12 meters in plantations.[3] It has a relatively short trunk and a deep, dense crown. The bark is pale gray and rough with droplets of resin. The leaves are a compound with 5-8 pairs of leaflets. The upper surface of the leaves is glossy. The flowers are yellow and about 5 mm across. They are arranged in a large inflorescence. The fruit is an ellipsoidal drupe which varies in length from 4 to 12 cm. The skin of the fruit is dark blue or violet, whereas the flesh is pale to light green.	The oil of fruits of D. edulis is a rich source of fatty acids and triglycerides. is its fruit, which can be eaten either raw, cooked in salt water or roasted. Cooked flesh of the fruit has a texture similar to butter. The pulp contains 48% oil and a plantation can produce 7-8 tons of oil per hectare. The fat content of this fruit is much higher compared to fruits such as apple, guava, and pawpaw. It is also rich in vitamins. The kernel can be used as fodder for sheep or goats. The flowers are useful in apiculture	Africa	X	X			
42	Detarium microcarpum	Sweet Detar	Detarium microcarpum is an African tree belonging to the family Fabaceae (legumes).It is a small tree or shrub growing up to 15 m tall but can reach 25 m in moist areas.	The fruit can be eaten raw or cooked, its pulp is transformed into flour. The seed flour is a traditional emulsifying, flavouring and thickening agent used to prepare cakes, bread, couscous, baby food and local beer.	Drier regions of West and Central Africa, from Senegal and Gambia east to Sudan	X	X			
43	Detarium senegalense	Sweet detar	Detarium senegalense is a leguminous tree tree, it produces globular fruits, it may grow up to 40 m tall, typically found growing in gallery forests, savannas, or along river banks.	The fruit is nutritious, is a source of quality timber, medicinal	Senegal and Gambia east to Sudan, and south to northern DR Congo	X				
44	Digitaria exilis	Fonio	The fonio is an annual, erect herbaceous plant which reaches stature heights from 30 to 80 centimeters. It is a grass species. The grains are very small.	Traditionally cooked as couscous, made into a porridge, and included in local beverages. Like other grains, it can be milled into a flour and used in baked goods, such as bread, cookies, and cakes	Central delta of the River Niger, Nigeria	X				

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
45	Dioscorea alata	Yams	It is a species of Yam. The tubers are usually a vivid violet-purple to bright lavender in color but some range in color from cream to plain white	It is edible, purple yams are also valued for the starch	It is native to Southeast Asia	X	X	X	X	
46	Dioscorea dumetorum	Bitter yam	It is a perennial climbing plant producing spiny stems up to 10 metres long from a shallow-seated, tuberous rootstock. These stems scramble over the ground, or twine into the surrounding vegetation. Sometimes cultivated in tropical areas of Africa for its edible root. It is an easily grown plant and also a heavy cropper.	The root is edible. It is reach in starch. Food security crop in some sub-Saharan African countries.	Africa	X	X	X	X	
47	Dioscorea rotundata	Yams	Yams are vigorous herbaceous vines providing an edible tuber. They are native to Africa, Asia, and the Americas. Some 870 species of yams are known, and 95% of these crops are grown in Africa. Yam plants can grow up to 15 m in length and 7.6 to 15.2 cm high. The tuber may grow into the soil up to 1.5 m deep. The plant disperses by seed.Many cultivated species of Dioscorea yams are found throughout the humid tropics	Yam contributes more than 200 calories per person per day for more than 150 million people in West Africa, and is an important source of income. It is rich in starch, and can be prepared in many ways. It is culturally important food security crop in some sub-Saharan	Africa, Asia and America	X	X	X	X	
48	Diospyros mespiliformis	African persimmon	The species occurs in woodlands, savannahs and along riverbanks. It prefers areas with permanent water that helps in natural regeneration, and it grows faster in frost-free areas. It favours heavy soils on riverbanks but also occurs in open woodland and is commonly found on termite mounds. This is a protected tree in South Africa.	The edible fruit is used fresh in fermented drink or dried and stored for later use. It can also be made into a type of porridge or more commonly mixed in with mealie meal.	Ethiopia	X	X	X	X	

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49	Dovyalis caffra	Kei Apple	D. caffra occurs in open bush and wooded grassland, often in Acacia woodland and frequently associated with termite mounds. The drought- and frost-resistant trees also tolerate sea breezes and salt spray.	Ripe fruits are pleasantly flavoured and rich in vitamin C. They can be eaten fresh or made into jelly and jam. As Timber, Ornamental	Southern Africa				X	
50	Eleusine coracana	Finger Millet	It is an annual herbaceous plant widely grown as a cereal crop in the arid and semiarid areas in Africa and Asia. It is a tetraploid and self-pollinating species. It is commonly known as finger millet, African finger millet, red millet.	Finger millet can be ground into a flour and cooked into cakes, pudding or porridge. The flour is made into a fermented drink or beer. The straw is used as animal fodder.	Asia and Africa	X	X	X	X	
51	Ensete ventricosum	Enset	Ensete ventricosum is a large non-woody plant—a gigantic monocarpic perennial herb (not a tree), up to 6m tall. The flowers, which only occur once from the centre of the plant at the end of that plant's life, are in massive pendant thyrses covered by large pink bracts. After flowering, the plant dies.	Though the roots are an important foodstuff, the fruits are inedible (insipid, flavorless) and have hard, black, rounded seeds.	Ethiopia	X	X	X	X	
52	Eragrostis tef	Tef	Eragrostis tef is a self pollinated tetraploid annual cereal grass. Teff is a C_4 plant, which allows it to more efficiently fix carbon in drought and high temperatures, and is an intermediate between a tropical and temperate grass. Teff can be cultivated in dry environments, but also under wet conditions on marginal soils.	Seeds is an edible and its straw to feed the cattle.	Ethiopia and Eritrea			X		

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53	Faidherbia albida	Acacia (Apple-ring)	F. albida grows on the banks of seasonal and perennial rivers and streams on sandy alluvial soils or on flat land where Vertisols predominate. It thrives in climates characterized by long summers, or a dry season with long days. It tolerates seasonal waterlogging and salinity but cannot withstand heavy clayey soils.	Fodder, Apiculture, Timber, Ornamenta, medicinal	Tropical and East Africa	X	X	X	X	
54	Garcinia livingstonii	African Mangosteen	Garcinia livingstonei is a shrub or small evergreen tree to 10 m; crown dense, spreading or conical; trunk short, often twisted, occasionally multi-stemmed. Bark reddish brown to dark grey, with shallow grooves or deeply fissured, ridged and scaly, exuding yellow or red resinous latex when cut.	Timber, Ornamenta, medicinal, Alcohol	Africa	X	X	X	X	
55	Garcinia livingstonii	Imbe	It has stiff leaves and small, thick-skinned, orange fruits with a juicy, acid, fragrant pulp.	It can be eaten raw, Its pulp is yellow and watery with a sweet flavour. It is most commonly consumed cooked, most times with porridge or other cereal products. Because of its popularity in diets, it is adjudged to make a good tool for the prevention or reduction of nutritional deficiencies	Africa	X	X	X	X	
56	Garcinia mangostana	Mangosteen	The mangosteen is a small, evergreen tree, very slow-growing, erect with a pyramidal crown; attains 6-25 m in height, has dark-brown or nearly black, flaking bark, the inner bark containing yellow, gummy, bitter latex. It is ultra-tropical. It cannot tolerate temperatures below 4 deg C, nor above 38 deg C	The fruit is notorious, plant is good for medicine.	Indonesia, Malaysia	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
57	Gnetum africanum	African Gnetum	Gnetum africanum is a dioecious forest perrenial liana up to 10 m long but sometimes longer; branches somewhat thickened at the nodes, glabrous. It is an endangered liane normally found in humid tropical forest. It can also be found in riverine forest in areas that are otherwise too dry for the species. It is mostly found at the periphery of primary forest and in secondary forest.	Lipids, medicinal plant, Alcohol	Africa	X	X	X		
58	Hibiscus sabdariffa	Roselle	Hibiscus sabdariffa is an erect, mostly branched, annual shrub. Stem reddish in colour and up to 3.5 m tall, with a deep penetrating taproot. It tolerates a warm and humid tropical climate, and is susceptible to damage from frost and fog.	Lipids, medicinal plant, Ornamental, Fibre	Africa	X		X	X	X
59	Hordeum vulgare	Barley	Barley plants are annual grasses which may be either winter annuals or spring annuals. Winter annuals require a period of exposure to cold in order to produce flowers and set seeds, thus are planted in the fall. They form a rosette type of growth in fall and winter, developing elongated stems and flower heads in early summer.	Barley has been used as animal fodder, as a source of fermentable material for beer and certain distilled beverages, and as a component of various health foods. It is used in soups and stews, and in barley bread of various cultures. Barley grains are commonly made into malt in a traditional and ancient method of preparation.	The origin of barley is still not known. Some suggested Eastern Asia, particulariy Tibet, or to the Near East or Eastern Mediterranean Area, or both	X	X	X	X	X
60	Icacina oliviformis	False yam	The Icacinaceae are a family of flowering plants consisting of trees, shrubs and lianas, primarily of the tropics	The tubers are used mainly as a famine food and sometimes as a source of starch or flour.	Peru	X	X			
61	Icacinaceae	Icacina	It is a shrub that can grow up to two meters high. It is characterized by the large, fleshy, yam-like underground tubers, as big as several kilograms in weight	The tuber is rich in starch and can be eaten fresh or processed into flour to make soup, pastes or porridges.	Africa	X	X			

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62	Ipomoea batatas	Sweet Potato Leaves	The plant is a herbaceous perennial vine, bearing alternate heart-shaped or palmately lobed leaves and medium-sized sympetalous flowers. . The stems are usually crawling on the ground and form adventitious roots at the nodes. The leaves are screwed along the stems. The leaf stalk is 5 to 20 inches long.	Sweet potato leaves are edible, Sweet potato cultivars with dark orange flesh have more beta-carotene	Central and South America	X	X	X	X	
63	Irvingia gabonensis	African bush mango	I. gabonensis occurs in the wild in lowland forest; 2-3 trees occur together and in some areas it is reported to be gregarious. The dika nut tree is a species of dense moist forest. It grows to a height of 15-40 m, bole slightly buttressed. It has a dense, compact crown, branchlets ending in a narrow, curved, stipular sheath covering the leaf bud. Bark greyish, smooth or very slightly scaly; slash yellowish-brown to light yellow, brittle.	Fodder, Wax, Timber, Tannin or dyestuff, Lipids		X	X	X	X	
64	Kerstingiella geocarpa Harms	Kersting's groundnut	The crop can withstand drought, pest, and diseases. It adapts to varying ecological conditions of tropical Africa.	It is eaten boiled or ground into apaste (like moi-moi, a steamed paste food) in a mannersimilar to that used for the septum of cowpea. seeds are boiled with shea butter, palm oil or othervegetable cooking oils and eaten with certain condiments,either alone or with starchy foods such as yam and rice. Its protein content of 12.9% is higher than that of bambara groundnut (12.1%) and cowpea (7.1%), while the total amino acid content of the seed is 42%	West Africa	X	X			

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
65	Lablab purpureus	Lab lab Bean	They are annual or short-lived perennial vines. The wild species is perennial. The thick stems can reach six meters in length. The leaves are made up of three pointed leaflets each up to 15 centimeters long. They may be hairy on the undersides. Some cultivars have white flowers, and others may have purplish or blue. The fruit is a legume pod variable in shape, size, and color.	The leaves are eaten raw or cooked. The fruit and beans are edible if boiled well with several changes of the water. The flowers can be eaten raw or steamed. The root can be boiled or baked for food. The seeds are used to make tofu and tempeh.				X	X	
66	Lagunaria patersoni	Sugarplums	The tree can grow to be twenty metres tall, and one and a half metres in diameter. It is considered to be hardwood.	This fruit can be eaten raw, but mostly it is consumed by pounding with water and then served as drinks. The pulp can be processed into delicious snacks by mixing with flour and other ingredients. It also has a very high vitamin C content	Lord Howe Island, Norfolk Island and parts of coastal Queensland	X	X	X	X	
67	Landolphia heudelotii	Gumvines	Gumvine fruits also known as rubber fruits. It is a climber growing to 15 m (49ft) by 0.3 m (1ft in) at a fast rate.	It is slightly acidulous and mucilaginous and is said to promote good digestion. The pulp surrounding the seeds is filled with a juice that is regarded as very healthful and is sometimes prescribed as an aid to digestion. It is rich in organic acids, this pulp is used as a snack, as a breakfast food, and as a source of refreshing drinks	Africa	X	X			
68	Lannea microcarpa	Tree grapes	Dioecious tree up to 15 m tall; bole up to 70 cm in diameter, rather short; bark grey, slightly sweet-scented, smooth or with small scales when older, often with a spiral twist, very fibrous, slash reddish with fine white markings.	It is one of the main plants used in the production of the cloths called 'basilan fini' (medicine applied on cloth), widely associated with the notion of healing, The young leaves are eaten as a vegetable and cattle browse leaves as a forage	Senegal, Cameroon					

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
69	Lens culinaris	Lentils	The lentil (Lens culinaris or Lens esculenta) is an edible legume. It is an annual plant known for its lens-shaped seeds. It is about 40 cm (16 in) tall, and the seeds grow in pods. usually with two seeds in each. As a food crop, the majority of world production comes from Canada and India, producing 58% combined of the world total.	Lentils have the second-highest ratio of protein to food energy of any legume, after soybeans. Lentils contain the carotenoids, lutein and zeaxanthin and polyunsaturated fatty acids.	It is indigenous to the near East and Central Asia			X	X	
70	Macrotyloma geocarpum	Geocarpa groundnut	M. geocarpum is a pulse belonging to the legume family. It is primarily produced in western Africa, specifically in Benin and surrounding regions.	It can provide nutrition, income, and the ability to alleviate hunger given the further production and enhancement of current practices.	West Africa	X				
71	Macrotyloma uniflorum	Horse gram	It is highly suitable for rain-fed and marginal agriculture but does not tolerate frost and waterlogging. It is a drought-tolerant plant	it is consumed as soups and sprouts. It is also rich in phosphorus, iron and vitamins such as carotene, thiamine, riboflavin, niacin and vitamin C. It is used to treat edema, piles, renal stones	India		X	X	X	
72	Mangifera indica	Mango	Mangifera indica is a large evergreen tree to 20 m tall with a dark green, umbrella-shaped crownThe mango thrives in both the subtropics and the tropics. In the subtropics, the cold months ensure excellent floral induction, but late frosts are a major risk; tender parts of the tree are killed by frost. In the tropics, the mango grows anywhere up to 1200 m elevation, but for fruit production a prominent dry season lasting more than 3 months is necessary.	The fruit is surrounded by golden, juicy flesh, rich in vitamins A and C. The green fruit is also used to flavour fish and meat dishes in the same way as tamarind and other sour fruits.	Bangladesh, India, Malaysia, Myanmar	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
73	Momordica charantia	Bittergourd	It is a tropical and sub-tropical vine of the family cucurbitaceae, widely grown in Asia, Africa, and the Caribbean for its edible fruit. Its many varieties differ substantially in the shape and bitterness of the fruit. This herbaceous, tendril-bearing vine grows up to 5 m (16 ft) in length. Each plant bears separate yellow male and female flowers.	Most of the plant parts, especially the seeds, contain oil. Bitter gourd seed oil is rich in stearic acid, oleic acid, and linoleic acid, and it exhibits antidiabetic and antitumor activities	Africa			X		
74	Moringa oleifera	Drum stick	Moringa oleifera is a small, graceful, deciduous tree with sparse foliage, often resembling a leguminous species at a distance, especially when in flower, but immediately recognized when in fruit. Readily colonizes stream banks and savannah areas where the soils are well drained and the water table remains fairly high all the year round. It is quite drought tolerant but yields much less foliage where it is continuously under water stress.	Moringa seed oil is beneficial for protecting hair against free radicals and keeps it clean and healthy. Moringa also contains protein, which means it is helpful in protecting skin cells from damage. It also contains hydrating and detoxifying elements, which also boost the skin and hair. It can be successful in curing skin infections and sores.	India, Malaysia, Oman, Qatar, Saudi Arabia, United Arab Emirates, Yemen	X	X	X		
75	Morus alba	Mulberry	Morus alba is a fast-growing shrub or moderate-sized tree with a fairly cylindrical, straight bole, up to 35 m high and 1.8 m in girth, without buttresses; bark dark greyish-brown, rough with vertical fissures; exuding white or yellowish-white latex. It grows in areas with a subtropical or mild temperate climate.	All plant parts are used in decoctions, baths, massages and enemas as treatments against conditions such as rheumatism, lumbago, intercostal pain, neuralgia, colic, stiffness, debility, diarrhoea and dysentery. The root is used as an aphrodisiac.	Cambodia, China, India, Indonesia, Japan, Laos, Myanmar, Pakistan, Thailand, Vietnam, Zanzibar			X	X	X

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
76	Mucuna pruriens	Mucuna	The leaves are trifoliolate, alternate, or spiraled, and the flowers are pea-like but larger, with distinctive curved petals, and occurring in racemes. Like other legumes, Mucuna plants bear pods. They are generally bat-pollinated and produce seeds that are buoyant sea-beans. These have a characteristic three-layered appearance, appearing like the eyes of a large mammal in some species and like a hamburger in others (most notably M. sloanei) and giving rise to common names like deer-eye beans, donkey-eye beans, ox-eye beans, or hamburger seed	The plants or their extracts are sold in herbalism against a range of conditions, such as urinary tract, neurological and menstruation disorders, constipation, edema, fevers, tuberculosis, ulcers, and helminthiases like elephantiasis	Tropical Asia	X	X	X	X	
77	Musa acuminata AAA Group	Bananas	Musa acuminata is a species of banana native to Southern Asia, its range comprising the India Subcontinent and Southeast Asia. Many of the modern edible dessert bananas are from this species, although some are hybrids with Musa halbisiana. Musa acuminata is an evergreen perennial, not a tree. The trunk is made of tightly packed layers of leaf sheaths emerging from completely or partially buried corms. The inflorescence grows horizontally or obliquely from the trunk. The individual flowers are white to yellowish-white in color.	Starchy varieties of banana and plantain are a key staple food crop, providing food security, nutrition and income for millions of smallholder farmers. Different types are used in a multitude of ways, including being eaten fresh, cooked, fried and brewed for beer.	Southern Asia	X	X	X	X	
78	Musa balbisiana	Bananas	It grows lush leaves in clumps with a more upright habit than most cultivated bananas. Flowers grow in inflorescences coloured red to maroon. The fruit are between blue and green. They are considered inedible because of the seeds they contain.	Starchy varieties of banana and plantain are a key staple food crop, providing food security, nutrition and income for millions of smallholder farmers. Different types are used in a multitude of ways, including being eaten fresh, cooked, fried and brewed for beer.	Southern Asia	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
79	Neocarya macrophylla	Gingerbread Plums	The gingerbread plum is a tree of up to 10 m high, although often less, and belongs to the Chryso-balanaceae family. The tree produces fruits in the form of an ellipsoid drupe, glabrous, yellowish-brown with grey warts on the sur-face, 4–5 cm long and 2.3–3.5 cm across, with an endo-carp embedded in a thick pulp. The flesh is soft and yellowish when fresh, with a peculiar flavor sometimes likened to avocado	It is edible and has been recorded as containing 62% oil, while 9% has been found in the endocarp. The kernels are usually roasted and enjoyed like cashews or almonds.	Western Africa and Central America	X	X	X	X	X
80	Opuntia monacantha	Prickly pear	Opuntia monacantha is a succulent, thorny shrub that grows almost tree-like with several branches and profusely expanded crown in branches that reaches a height of up to 5 meters. The oval to elongated shoots narrowed at the base are shiny green. They are quite thin and four to ten inches long. The widely spaced areoles have brownish glochids. The straight thorn (rarely two to three are present) is brown and between 3 and 4 centimeters long.	The prickly pear is used to build stockades for domestic animals – and is used as feed for the animals. Many farm houses in South Africa are enclosed in a Prickly Pear fence. The fruit is used today to make jams and various drinks.	Argentina, Brazil, Paraguay and Uruguay.				X	
81	Parinari curatellifolia	Mobola plum	Opuntia monacantha is a succulent, thorny shrub that grows almost tree-like with several branches and profusely expanded crown in branches that reaches a height of up to 5 meters. The oval to elongated shoots narrowed at the base are shiny green. They are quite thin and four to ten inches long. The widely spaced areoles have brownish glochids. The straight thorn (rarely two to three are present) is brown and between 3 and 4 centimeters long.	Medicinal applications of the mobola plum include using the bark and leaf extracts for pneumonia symptoms, cataracts and earache. Crushed leaves can be used as a dressing for broken bones or dislocations as well as to heal sores and cuts	Argentina, Brazil, Paraguay and Uruguay				X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
82	Parkia biglobosa	Locust bean	Parkia biglobosa is a perennial deciduous tree with a height ranging from 7 to 20 m, although it can reach 30 m under exceptional conditions. Occurs on a wide range of natural and semi-natural communities such as open savannah woodlands, but it is most conspicuous and abundant in anthropic communities, principally bush fallow and wooded farmland where cultivation is semi-permanent. The tree can also grow on rocky slopes, stony ridges or sandstone hills. It is a fire-resistant heliophyte.	Seeds are fermented to make dawadawa, a black, strong-smelling, tasty food high in protein. Whole pods are eaten by domestic stock, including cattle. The young seedlings are nutritious and heavily browsed by livestock. Seeds are rich in calcium, sodium, potassium and phosphorus.	WA, CA and EA	X	X	X		
83	Passiflora edulis	Passion Fruit	P. edulis is a perenial vine; tendrils are borne in leaf axil, and have a red or purple hue when young. There are two main varieties: a purple-fruited type, P. edulis f. edulis, and the yellow-fruited P. edulis f. flavicarpa. Usually the vine produces a single flower 5–7.5 cm wide at each node. The flower has 5 oblong, green sepals and 5 white petal. The sepals and petals are 4-6mm in length and form a fringe. The base of the flower is a rich purple with 5 stamens, an ovary, and a branched style. The styles bend backward and the anthers, which are located on top of the styles, have a very distinct head.	The yellow variety is used for juice processing, while the purple variety is sold in fresh-fruit markets. The yellow variety, is used to flavor yogurt and soft drinks. It is also used in juices, ice cream or pastries. It can be used in some alcoholic cocktails.	Beazil, Paraguay and Argentina			X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
84	Persea americana	Avocado	Persea americana is a medium to large tree, 9-20 m in height. The avocado is classified as an evergreen, although some varieties lose their leaves for a short time before flowering. The tree canopy ranges from low, dense and symmetrical to upright and asymmetrical. West Indian and some hybrid varieties are best adapted to a lowland tropical climate and relatively frost-free areas of the subtropics. Mexican varieties are more cold tolerant and not well adapted to lowland tropical conditions	The tree is grown for its nutritious fruit. The high oil content of the mature fruit gives the flesh a buttery texture which is neither acid nor sweet. The easily digestible flesh is rich in iron and vitamins A and B; providing a highly nutritious solid food, even for infants. Surplus fruit is an important food source for pigs and other livestock.	Antigua and Barbuda, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Guatemala, Honduras, Jamaica, Puerto Rico, St Lucia, St Vincent and the Grenadines, Trinidad and Tobago, United States of America, Virgin Islands (US)	X		X	X	
85	Phaseolus lunatus	Lima bean	The crop is hardy and may be advantageous in adverse conditions where other leguminous vegetables do not grow well. herbaceous species which includes both annual determinate bush types and perennial indeterminate climbing types, perennial due to the presence of large swollen tap roots. The bush types are short, about 0.6 m tall, whereas the climbing types are up to about 2-5 m.	It is an important source of protein for rural populations. Lima bean is cultivated primarily for its immature and dry seeds, which in tropical Africa are usually eaten boiled, fried in oil or baked. The leaves and stems may be turned into hay or silage. Juice from the leaves is used in nasal	South America and Central America	X	X		X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
86	Phaseolus vulgaris	Green Bean	It is a herbaceous annual plant grown worldwide for its edible dry seeds or unripe fruit (both commonly called beans). The main categories of common beans, on the basis of use, are dry beans (seeds harvested at complete maturity), snap beans (tender pods with reduced fibre harvested before the seed development phase) and shell (shelled) beans (seeds harvested at physiological maturity). The common bean is a highly variable species with a long history. Bush varieties form erect bushes 20–60 cm (8–20 in) tall, while pole or running varieties form vines 2–3 m (7–10 ft) long. All varieties bear alternate, green or purple leaves, which are divided into three oval, smooth-edged leaflets, each 6–15 cm (2–6 in) long and 3–11 cm (1–4 in) wide. The white, pink, or purple flowers are about 1 cm long, and they give way to pods 8–20 cm (3–8 in) long and 1–1.5 cm wide.	Phaseolus vulgaris has been found to bio-accumulate zinc, manganese and iron and have some tolerance to their respective toxicities, suggesting suitability for natural bio-remediation of heavy metal contaminated soils. Green beans are a low-calorie food that provides key nutrients. Its leaf is occasionally used as a vegetable and the straw as fodder. Bean leaves have been used to trap bedbugs in houses. Beans were used as device in various methods of divination.	Mesoamerica, America	X	X	X	X	
87	Plectranthus esculentus	Potato	The species is a perennial dicot herb and a member of the mint family. It is indigenous to Africa, where it is grown for its edible tubers. It can grow to be as tall as 2 metres. Some of the branches on the base bend down and grow into the ground that then can form oblong tubers, which are the fleshy underground stems. The plant also has yellow flowers. These flowers are two-lipped, and are on the short and crowded branches.	The tubers of Coleus esculentus are edible and nutritious, often eaten as a substitute for potato or sweet potato. Directly after cultivation it can be boiled or roasted. The stems have been used to sweeten gruel (porridge). The leaves can be cooked in sauces as well. C. esculentus has been said to help with digestive problems also used to treat stomach ache and abdominal pain. It has also been used as anthelminthics.	Africa	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
88	Plectranthus rotundifolius	African Potato	C. rotundifolius commonly known as native or country potato in Africa and called Chinese potato in India, is a perennial herbaceous plant of the mint family (Lamiaceae) native to tropical Africa. It is cultivated for its edible tubers primarily in West Africa, as well as more recently in parts of Asia, especially India, Sri Lanka, Malaysia, and Indonesia. It is closely related to the coleus plants widely cultivated as ornamentals and is now again placed in the genus Coleus, after being placed in the defunct genus Solenostemon and in Piectranthus.	The tubers of Coleus esculentus are edible and nutritious, often eaten as a substitute for potato or sweet potato. Directly after cultivation it can be boiled or roasted. The stems have been used to sweeten gruel (porridge). The leaves can be cooked in sauces as well. C. esculentus has been said to help with digestive problems also used to treat stomach ache and abdominal pain. It has also been used as anthelminthics.	Africa	X	X	X	X	
89	Psidium guajava	Guava	Psidium guajava is a large dicotyledonous shrub, or small evergreen tree, generally 3-10 m high, many branches; stems crooked, bark light to reddish brown, thin, smooth, continuously flaking; root system generally superficial and very extensive, frequently extending well beyond the canopy, there are some deep roots but no distinct taproot. It appears to have evolved in relatively open areas, such as savannah/shrub transitional zones, or in frequently disturbed areas where it is a strong competitor in early secondary growth. In some areas it is found in large thickets with as many as 100 plants in an area of less than half a hectare, although it is more often found in densities of 1-5 plants/ha.	Guava fruits may be eaten fresh or processed to produce paste, jellies or preserves. Dehydrated fruit is used to make guava powder	Colombia, Mexico, Peru, United States of America	X		X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
90	Psophocarpustetragonolobus (L) DC	Winged bean	Winged bean is an annual or perennial vine that thrives in hot and humid tropical conditions. It is grown widely, but mainly on a local scale. It has long growing duration (six to eight months from seed to seed) and indeterminate growth habit.	Almost all parts of the plant to be eaten, from the seeds, pods, and flowers, to the leaves and tuberous roots, with the stems and leaves used as fodder. It also serves well in crop rotation because of the nitrogen fixation capability. It has a high protein content of 29–37%, and its amino acid composition is almost identical to soybean with methionine and cysteine being limiting amino acids	Africa and India	X	X		X	
91	Ricinodendron heudelotii	Njansang, ground nut tree	Ricinodendron heudelotii is a tree of the fringing, deciduous and secondary forests common throughout the semi-dry, wooded-savannah zone of the region. It is a fast-growing tree, reaching up to 50 m in height and 2.7 m in girth; bole straight with short buttress; bark grey, smooth at first, becoming scaly with ageing; slash dark red, densely mottled with scattered pits and orange stone-cell granules.	The seeds are edible but are not valued as food in all areas where it grows. The kernels can be eaten after boiling in water, or in sauce as in Cote d'Ivoire, or mixed with fish, meat or vegetables. In Gabon kernels are roasted and made into a paste. Wood of R. heudelotii is not popular as a fuel as it burns very quickly. Fibre of R. heudelotii is perhaps suitable for paper pulp	Angola, Benin, Cameroon, Congo, Cote d'Ivoire, Democratic Republic of Congo, Gabon, Ghana, Guinea-Bissau, Kenya, Liberia, Nigeria, Senegal, Sierra Leone, Tanzania, Togo, Uganda, Zambia	X	X	X	X	
92	Saba comorensis	Rubber vines	Saba comorensis is a strong forest liana up to 20 m long on other trees. Stem lenticillate and exuding a white sticky latex when cut. It is very abundant in undisturbed forests, coastal areas and around the Great lakes region of Africa. The liana is very rare in open areas. It commonly associates with Antiaris toxicaria, Milicia excelsa, Khaya nyasica,Pachystela brevipes, P. msolo, Sterculia appendiculata, Sorindeia madagascariensis, Trema orientalis and Ficus spp.	The fruit pulp is edible, commonly found in market places. A refreshing sour drink can be made from the fruit. There is an export potential as the fruit does not rot easily.	Comoros, Ghana, Kenya, Malawi, Mozambique, Tanzania, Uganda	X		X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
93	Saba senegalensis	Nsaban, kabaa	Saba senegalensis is a liana up to 40 m long, often shrub like; trunk up to 20 cm in diameter. It is commonly found in riverine areas and open woodland. Bark rough or scaly. Leaves opposite, petiole 4-14.5 mm long; lamina 1.5-3 times as long as wide, apex rounded, obtuse, shortly acuminate or apiculate with 7-14 pairs of secondary veins, tertiary venation reticulate or scalariform, submarginal veins abundant.	The fruits are tasty, sweet-sour, yellow pulped and quite popular, often appearing in local markets in its fruit season. Fruits eaten as a sterility treatment. The leaves are eaten to stop vomiting, prepared in sauces and condiments as an appetizer with a salty taste. Bark decoctions are taken for dysenteriform diarrhoea and food-poisoning. Crushed leaf infusion has haemostatic/ antiseptic usage and the powdered root efficacious on children's burns. The latex is used for pulmonary troubles and tuberculosis. In Cote d'Ivoire the latex is used as an adhesive for poison preparations for arrows.	Burkina Faso, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Niger, Senegal, Tanzania	X		X		
94	Sclerocarya birrea	Marula	Sclerocarya birrea ssp. caffra is a medium to large tree, usually 9 m tall, but trees up to 18 m. It occurs in wooded grassland, riverine woodland and bushland and frequently on or associated with hills. It prefers a warm, frost-free climate but is also found at high altitudes where temperatures may drop below freezing point for a very short period in winter. The tree is frost sensitive and moderately drought resistant. It is single stemmed with a dense, spreading crown and deciduous foliage. It is known to be highly salt tolerant: in Israel it grows vigorously when irrigated with salty water.	All parts of the fruits are edible. The vitamin C content of the fruit is 54 mg/100 g, which is 2-3 times that of the orange. The seeds are high in fat (56-61%), protein (28-31%), citric acid (2.02 %), malic acids and sugar, phosphorus, magnesium, copper, zinc, thiamine and nicotinic acid. The pulp can be consumed raw or boiled into a thick, black consistency and used for sweetening porridge. The oil in the seed is rich in protein. The fruits are eaten by cattle and goats and a wide variety of game animals, including elephants, which often behave drunkenly when the fruits ferment in their stomachs.	Botswana, Democratic Republic of Congo, Eritrea, Ethiopia, Gambia, Kenya, Malawi, Mozambique, Namibia, Niger, Senegal, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
95	Solanum aethiopicum	African Eggplant	Solanum aethiopicum, the bitter tomato, Ethiopian eggplant, or nakati, is a fruiting plant of the genus Solanum mainly found in Asia and Tropical Africa. It is also known as Ethiopian nightshade, garden eggs, and mock tomato. It is a popular vegetable in north-east India, and is known as khamen akhaba in Manipuri and samtawk in Mizo. They are called Titay bii or simply bii in Darjeeling, Sikkim and Nepal and are relished with meat, particularly pork. These names are a result of its varied morphology, with ripe fruit often looking like a cross between an eggplant and a tomato, which are also from Solanum.	The leaves of Solanum aethiopicum are eaten as a leaf vegetable and are actually more nutritious than the fruit. The highly variable fruit of the plant is eaten both raw and cooked and is becoming more popular as a cultivated crop. These fruits are usually harvested while still green, before the skin becomes thick. The bitterness depends on the levels of saponin it contains, some with a sweet flavor and others very bitter. When the berries mature, they turn bright red because of high carotene content. It is used as an ornamental in Asia. In Nigeria, Igbo people use it as a substitute for kolanut especially for those who do not want to chew kolanut. In which case it is used to welcome guests at home or before resumption of a traditional ceremony.	West Africa	X		X		
96	Solanum nigrum	African Nightshade	Solanum nigrum, the European black nightshade or simply black nightshade or blackberry nightshade, is a species of flowering plant in the genus Solanum. Black nightshade is a common herb or short-lived perennial shrub, found in many wooded areas, as well as disturbed habitats. It reaches a height of 30 to 120 cm (12 to 47 in). The suited soil pH value is between 5.5 and 6.5. It is rich in organic matter, water and fertility on the strong soil growth, in the lack of organic matter, poor ventilation clay, its roots will be stunted, plant growth is weak, commodity is poor. It is difficult to grow under the condition of high temperature and high humidity, the plant grows slowly, the tender shoot is easy to aging fiber, and the commodity is poor.	Used as food, medicinal uses and leave as vegetable	Eurasia and introduced in the Americas, Australasia, and South Africa.		X	X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
97	Solanum scabrum	Nightshade	Solanum scabrum, also known as garden huckleberry, is an annual or perennial. An annual or short-lived perennial herb to 1 m tall, hairless or sparsely hairy. The leaves are usually ovate, 7–12 cm long and 5–8 cm wide, with petioles 1.5–7 cm long. The inflorescence is simple or sometimes branched with 9–12 flowers. The white corolla is stellate, 15–20 mm diam., and sometimes tinged purple and with yellow/green basal star. The berries are globular, 10–17 mm diam., purple-black. The seeds are 1.8–2.2 mm long, pale or stained purple.	It is grown as an edible leaf crop in Africa. Also, cultivated as a dye crop using the ripe berries.	The origin of the species is uncertain, although Linnaeus attributed it to Africa, but it also occurs in North America, and is naturalized in many countries.			X	X	
98	Sphenostylis stenocarpa	AAfrican Yam bean	Sphenostylis is a genus of flowering plants in the legume family, Fabaceae and is characterized by its fruit (legume) and stipulated leaves. It belongs to the subfamily Faboideae. Sphenostylis contains several species useful as food sources including Sphenostylis stenocarpa. The tuber grows as the root source, while the yam bean develops into the pod containing 20-30 seeds found above the ground. These seeds can be found in colors including brown, black, and red varieties. It grows as a vine to heights of about 3m and produces brightly colored flowers in 100–150 days.	The African yam bean is a legume that is rich in protein and starch and an important source of calcium and amino acids. It contains amino acids that are important for the development in early pre-school and school aged children and also those required for adults. The yam bean is a useful source of nutrients for many African communities with a nutritional value comparable to that of the soybean, although the cooking time for the yam bean is much longer (4–6 hours).	Africa			X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
99	Strychnos cocculoides	Natal orange	Strychnos cocculoides is a shrub or small tree, 2-8 m high, with a compact, rounded crown; bark thick, creamy brown, deeply corky and ridged longitudinally; young branchlets reddish or blackish-purple, densely spreading-pubescent or rarely glabrous, usually longitudinally fissured; spines stout, sharp, curved downwards, axillary and paired. It grows naturally in woodlands, mixed forests, deciduous woodlands and lowlands.	The fruit is used to make a dye that provides protection from insects to colour trays and containers. Ripe fruit is eaten fresh or is used to prepare a sweet-sour non-alcoholic drink. The soft, white, pliable, tough wood is used for tool handles and building materials. It is root is chewed to treat eczema; a root decoction is drunk as a cure for gonorrhoea, and pounded leaves are used to treat sores. The fruit is used in making eardrops, and a fruit preparation is mixed with honey or sugar to treat coughs. Roots, leaves and bark are used in treating disorders of the male organs.	Botswana, Kenya, Namibia, South Africa, Tanzania, Uganda, Zambia, Zimbabwe			X	X	
100	Strychnos species	Monkey Oranges	It is a tree crop. It produces, sweet-sour, yellow fruits, containing numerous hard brown seeds. Greenish-white flowers grow in dense heads at the ends of branches (Sep-Feb/Spring - summer). The fruits tend to appear only after good rains	It is an excellent source of vitamin C and also contain vitamin B.	Tropical and subtropical Africa	X	X	X	X	
101	Strychnos spinosa	African Orange	Strychnos spinosa is a thorny shrub or small tree 1-9 m in height. Bark grey, rough, tends to flake in rectangular segments but is not deeply fissured or corky; branchlets rather pale and thin, with or without short hairs, with hooked thorns; slash yellowish with green margin. Occurs in savannah forests all over tropical Africa and grows in open woodland and riverine fringes.	The roots are pruned to produce root suckers. A mixture of ground roots of S. spinosa and oil is applied to the skin as a fly repellent. The sweet-sour fruit pulp is edible but the seeds and unripe fruit are toxic; leaves are also eaten. It provides firewood and charcoal. The straight-grained wood planes well and is used in furniture making.	Ethiopia, Kenya, Madagascar, Mali, Mauritius, Seychelles, Sudan, Tanzania, Uganda, Zambia	X		X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
102	Syzygium guineense	Water berry	Syzygium guineense is a medium-sized or tall evergreen tree, 15-30 m high. It usually occurs in lowland rain forests, mountain rain forests, fringing riverian swampy forests and open Brachystegia - Faurea woodland. It usually grows in moist conditions, sometimes even in water, and is usually found along streams and wadis and on rocky ground in high rainfall savannah. The bark varies in subspecies and is greyish-white or silver mottled and smooth in young trees, turning rough, flaky, creamy, light grey, dark brown or black in older trees. Bark scales in rectangular flakes and produces red, watery sap if cut; slash is fibrous, even pale brown to dark red-brown. Crown rounded and heavy; stems thick and angular. Bundles of fibrous aerial roots, about 2 m up the bole, have been observed in Botswana.	The ripe, pleasant-flavoured fruits of S. guineense are gathered and eaten. Flowers provide good bee forage. It is used as firewood and in the production of charcoal. Fruit is used as a remedy for dysentery, while a decoction of the bark is used as an antidiarrhoeic. In traditional medicine, liquid from the pounded bark and roots, mixed with water, is used as a purgative.	Botswana, Eritrea, Ethiopia, Kenya, Lesotho, Mozambique, Namibia, Senegal, Somalia, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe	X		X	X	
103	Talinum fruticosum	Ceylon spinach	Talinum fruticosum is a herbaceous perennial plant. Common names include Ceylon spinach, waterleaf, cariru, Gbure, Surinam purslane, Philippine spinach, Florida spinach, potherb fameflower, Lagos bologi, and sweetheart. It is widely grown in tropical regions as a leaf vegetable. The plant grows erect, reaching a height of 30 to 100 cm (12 to 39 in). It bears small, pink flowers and broad, fleshy leaves.	As a leaf vegetable, T. fruticosum is rich in vitamins, including vitamins A and C, and minerals such as iron and calcium. Along with Celosia species, T. fruticosum is one of the most important leaf vegetables of Nigeria.	It is native to Mexico, the Caribbean, West Africa, Central America, and much of South America	X	X	X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
104	Tamarindus indica	Tamarind	Tamarindus indica is a large evergreen tree up to 30 m tall, bole usually 1-2 m, up to 2 m diameter; crown dense, widely spreading, rounded; bark rough, fissured, greyish-brown. It grows well over a wide range of soil and climatic conditions, occurring in low-altitude woodland, savannah and bush, often associated with termite mounds. It prefers semi-arid areas and wooded grassland, and can also be found growing along stream and riverbanks. It does not penetrate into the rainforest. A long, well-marked dry season is necessary for fruiting.	Fruit is marketed worldwide in sauces, syrups and processed foods. The juice is an ingredient of Worcestershire Sauce and has a high content of vitamin B (thiamine and niacin) as well as a small amount of carotene and vitamin C. The flowers, leaves and seeds can be eaten and are prepared in a variety of dishes. Tamarind seeds are also edible after soaking in water and boiling to remove the seed coat. Flour from the seed may be made into cake and bread. Roasted seeds are claimed to be superior to groundnuts in flavour.	Burkina Faso, Central African Republic, Chad, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Kenya, Madagascar, Mali, Mozambique, Niger, Nigeria, Senegal, Sudan, Tanzania, Uganda, Zimbabwe	X	X	X	X	
105	Telfairia occidentalis	Fluted gourd	Telfairia occidentalis is a tropical vine grown in West Africa as a leaf vegetable and for its edible seeds. Common names for the plant include fluted gourd, fluted pumpkin, ugu (in the Igbo language), and ikong-ubong (in the Efik and Ibibio languages). It is a member of the family Cucurbitaceae and is indigenous to southern Nigeria. The fluted gourd grows in many nations of West Africa, but is mainly cultivated in southeastern Nigeria and it is used primarily in soups and herbal medicines. It is typically grown vertically on trestle-like structures; however, it can be allowed to spread flat on a field.	The edible seeds can be boiled and eaten whole, or fermented and added to ogili. The fluted gourd has been traditionally used by indigenous tribes as a blood tonic, likely due to its high protein content. Flour produced from the seeds can be used for high-protein breads. Furthermore, the shoots and leaves can be consumed as vegetables. When T. occidentalis is prepared for herbal medicine, it is used to treat sudden attack of convulsion, malaria, and anaemia; it also plays a vital and protective role in cardiovascular diseases.	West Africa	X				

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
106	Triticum dicoccoides Koern	Emmer	Emmer is a hulled wheat. In other words, it has strong glumes (husks) that enclose the grains, and a semibrittle rachis. On threshing, a hulled wheat spike breaks up into spikelets. Wild emmer wheat spikelets effectively self-cultivate by propelling themselves mechanically into soils with their awns	Emmer's main use is as a human food, though it is also used for animal feed	Southeastern Turkey	X	X	X	X	X
107	Tylosema esculentum	Marama bean	Tylosema esculentum, with common names gemsbok bean and marama bean, is a long-lived perennial legume native to arid areas of southern Africa. Stems grow at least 3 metres, in a prostrate or trailing form, with forked tendrils that facilitate climbing. A raceme up to 25 millimetres (1 in) long, containing many yellow-orange flowers, ultimately produces an ovate to circular pod, with large brownish-black seeds. The plant is dormant over winter in its native home - South Africa, Namibia and Botswana - but might possibly remain evergreen in less harsh environments.	The seeds has high protein, oil content and can also be ground or boiled. The tuber is also edible. The foliage of the plant serves as forage for livestock and wildlife in Southern Africa because the leaves are highly palatable. Since the marama bean is used to grow in harsh environments it could be used as a feed crop in the drier parts of Africa. While using it as forage one does also protect the soil by conserving its moisture and preventing from soil erosion by wind and water. Furthermore, there would be a build-up in organic matter, which would be beneficial for soils which are poor in nutrients.	South Africa, Namibia and Botswana				X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
108	Uapaca kirkiana	Wild loquat	Uapaca kirkiana is a small to medium-sized evergreen or semi-deciduous tree with spreading multiple branches forming a dense rounded crown. The tree is found in lowland forest, secondary miombo woodland such as clearing and gaps, and open woodland. Grows in well-drained escarpments, with infertile sand or gravel soils of acidic reaction. Frost-free sites are most ideal. The trunk is short and stout, attaining a height of 5-12 m and diameter of 5-25 cm. The bark is dark grey or grey-brown, thick and deeply fissured. Branchlets short, thick with prominent leaf scars. The young shoots are covered with creamy-brown hairs.	Its fruit is edible, contains 1.8 mg/g ascorbic acid and is used to prepare sweetmeats or jams. Fruits can contribute to animal feed. The flush of leaves at the end of the dry season is utilized by cattle as fodder in the absence of more palatable alternatives. Flowers are valuable for honey production. A blue dye is made from the roots. An infusion made from the roots is used to treat indigestion and dysentery.	Angola, Burundi, Democratic Republic of Congo, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe		X	X	X	
109	Vangueria infausta	Medlars	Vangueria infausta is a deciduous tree 3-8 m in height with a short trunk and hanging branchlets. Bark pale grey-brown, peeling in untidy flakes; branches usually opposite with reddish tomentose young branchlets. It is found in all types of woodland, especially on rocky ridges and hillsides or in wooded grassland; also near the sea on sand dunes. It can withstand long periods of drought and frost. Widely distributed in savannah-like communities derived from forest (including forest remnants), and often in rocky or sandy places.	The fruits are eaten raw and the pulp sometimes soaked in water and then dried to use later. The pulp, when mixed with a little sugar and water, makes a good substitute for applesauce; it has a sweet and slightly sour taste. Seeds can be eaten roasted. Infausta is a good source of firewood. An infusion of the leaves is used in treating abdominal pain and for the relief of dental pain. In southern Africa, a decoction is used as a remedy for menstrual troubles. Also, farmers distil 'mampoer' from the ripe fruit.	Botswana, Kenya, Madagascar, Malawi, Mozambique, Namibia, South Africa, Tanzania, Uganda, Zimbabwe			X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
110	Vangueria madagascariensis	African Medlars	Vangueria madagascariensis is a profusely branched shrub or small tree, 2-15 m tall, with smooth grey bark and a whitish or cream slash. It is commonly found in evergreen forest, riverine forest, wooded bushland and wooded grassland throughout Africa and into Asia and Australia. It grows naturally in riverine-lowland forests and Brachystegia-Combretum woodland. The species is fire sensitive.	The ripe fruit pulp is edible and has a pleasant chocolate-like flavour. The fruit is also used to add flavour to beer. The pleasant-smelling flowers of the plant attract bees, and are therefore a suitable honey source.	Angola, Benin, Botswana, Cameroon, Central African Republic, Congo, Democratic Republic of Congo, Eritrea, Gabon, Ghana, Kenya, Lesotho, Mozambique, Namibia, Nigeria, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe	X	X	X	X	
111	Vangueria species	Medlars	It is a large shrub or small tree in the rose family Rosaceae. The fruit of this tree is also called the medlar. The fruit has been cultivated since Roman times, and is unusual in being available in winter. The trees are rugged and resilient. Before the fruit is stored, it is dried.	it is boiled for consumption into a thick liquid. It is popularly known to be used to flavour staple foods like maize porridge and is known to be packed with nutrients	Southwest Asia, southeastern Europe					
112	Vicia faba	Favabean	Vicia faba is a stiffly erect, annual plant 0.5 to 1.8 metres (1.6 to 5.9 ft) tall, with two to four stems that are square in cross-section. Crimson-flowered broad beans also exist, which were recently saved from extinction. The fruit is a broad, leathery pod that is green, but matures to a dark blackish-brown, with a densely downy surface; many modern cultivars developed for food use have pods 15 to 25 centimetres (5.9 to 9.8 in) long and 2–3 cm thick. V. faba has a diploid (2n) chromosome number of 12 (six homologous pairs). Five pairs are acrocentric chromosomes and one pair is metacentric	Broad beans are generally eaten while still young and tender, enabling harvesting to begin as early as the middle of spring for plants started under glass or overwintered in a protected location, but even the main crop sown in early spring will be ready from mid to late summer. Horse beans mature fully, are eaten as a pulse. The immature pods are also cooked and eaten, and the young leaves of the plant can also be eaten, either raw or cooked as a pot herb (like spinach).The beans can be fried, causing the skin to split open, and then salted and/or spiced to produce a savory, crunchy snack.	Algeria, Ethiopia, Egypt			X		X

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
113	Vigna mungo	Black gram	Black gram (Vigna mungo (L) Hepper) is an erect, fast-growing annual, herbaceous legume reaching 30-100 cm in height. It has a well-developed taproot and its stems are diffusely branched from the base. Occasionally it has a twining habit and it is generally pubescent. The leaves are trifoliate with ovate leaflets, 4-10 cm long and 2-7 cm wide. The inflorescence is borne at the extremity of a long (up to 18 cm) peduncle and bears yellow, small, papilionaceous flowers. The fruit is a cylindrical, erect pod, 4-7 cm long x 0.5 cm broad. The pod is hairy and has a short hooked beak. It contains 4-10 ellipsoid black or mottled seeds	Seeds, sprouts and green pods are edible and much appreciated for their high digestibility and lack of flatulence induction. It is also grown for forage and hay.	Central Asia and India	X	X	X	X	
114	Vigna radiata	Mungbean	The mung bean (Vigna radiata), alternatively known as the green gram, maash, moong (from Sanskrit;, romanized: mudga), monggo, or munggo (Philippines) is a plant species in the legume family. The mung bean is mainly cultivated in East Asia, Southeast Asia and the Indian subcontinent. The green gram is an annual vine with yellow flowers and fuzzy brown pods. The English word mung originated (and used as is) from the Hindi word ('moong'), which is derived from the Sanskrit word ('mudga'). It is considered to be the hardiest of all pulse crops and requires a hot climate for germination and growth.	Mung beans are commonly used in cuisines across Asia. It is used as an ingredient in both savoury and sweet dishes.	East Asia, Southeast Asia and the Indian subcontinent			X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
115	Vigna subterranea	Bambara groundnut	Vigna subterranea (also known by its common names: Bambara nut, Bambara-bean, Congo goober, earth pea, ground-bean, or hog-peanut) is a member of the family Fabaceae. Ripens its pods underground. Optimal soils for Bambara groundnut production are sandy soils to prevent waterlogging. The production is best at the tropical wet and dry and the subtropical dry summer climate zones. Optimal temperature is between 19 °C and 30 °C. The minimal annual rainfall requirement is about 300 mm and optimal annual rainfall is between 750 mm and 1400 mm and should not exceed 3000 mm.	The seeds are used for food and beverage because of their high protein content and for digestive system applications. The entire plant is known for soil improvement because of nitrogen fixation. In West Africa, the nuts are eaten as a snack, roasted and salted, processed into cake, or as a meal, boiled similar to other beans.	The origin of the Bambara groundnut is West Africa and the region of cultivation is Sub-Saharan Africa's warm tropics.	X	X	X	X	
116	Vitellaria paradoxa	Shea	Vitellaria paradoxa is a small to medium-sized tree (min. 7) 10-15 (max. 25) m high; much branched, dense, spreading, round to hemispherical crown. The shea tree is a light-demanding species of open sites and parkland savannah; forming extensive pure stands in some areas but often also associated with other trees, such as Parkia biglobosa (nere). Avoids swampy areas, those liable to flooding for any length of time, moist heavy loam soils or watercourses. The extensive root system is essential for survival in the 5-7-month dry seasons of savannah climates. Can withstand quite severe fires.	It has played a significant role in soil and water conservation and environmental protection in semi-arid West Africa. The edible fruit pulp constitutes 50-80% of the whole fruit. They are rich in protein and sometimes eaten in a sauce. Shea-nut cake is used for livestock and poultry feed. Leaves and young sprouts serve as forage. Ashes from burnt wood are commonly used as the dye. The shea-butter tree is an important oil-producing plant, especially as it occurs where other such plants are rare. It is also useful in soap making.	Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Ghana, Guinea, Mali, Niger, Nigeria, Senegal, Sudan, Togo, Uganda	X	X	X		

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
117	Vitex doniana	Chocolate berries	Vitex doniana is a medium-sized deciduous tree, 8-18 m high, with a heavy rounded crown and a clear bole up to 5 m. Bark rough, pale brown or greyish-white, rather smooth with narrow vertical fissures. The bases of old trees have oblong scales. It is the most abundant and widespread of the genus occurring in savannah regions. A deciduous forest tree of coastal woodland, riverine and lowland forests and deciduous woodland, extending as high as upland grassland. Requires a high water table.	The fruit is sweet and tastes like prunes. It contains vitamins A and B and can be made into a jam. Leaves are often used as a herb for cooking. The leaves, pods and seeds are a good fodder. Wood is used for firewood, charcoal, furniture, carvings and boats. The bark yields a dye that can be used for cloth. The fruit is used to improve fertility and to treat anaemia, jaundice, leprosy and dysentery. The root is used for gonorrhoea, and women drink a decoction of it for backaches. The young tender leaves are pounded and the juice squeezed into the eyes to treat eye troubles. The tree has nitrogen-fixing roots. The fruit can be made into wine.	Angola, Botswana, Ethiopia, Kenya, Lesotho, Namibia, Niger, Senegal, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia	X	X	X	X	
118	Xanthosoma sagittifolium	Elephant ears	Xanthosoma sagittifolium, the arrowleaf elephant ear, arrowleaf elephant's ear, malanga or American taro, is a species of tropical flowering plant in the genus Xanthosoma, which produces an edible, starchy corm. Cultivars with purple stems or leaves are also variously called blue taro, purple taro, purplestem tannia, and purple elephant's ear among others. Taro is a different species that belongs to the genus Colocasia.	The tuber (called nampi or malanga) is also used in the cuisine of some countries. The shredded root is baked with chicken, fruit juices, salted meat, and spices in the popular Surinamese dish, pom. Eaten over rice or on bread, pom is commonly eaten in Suriname at family gatherings and on special occasions, and is also popular throughout the Netherlands.	Asia to Eastern Australia	X	X	X	X	X

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
119	Xanthosoma spp	Cocoyams, Arrowroots	Xanthosoma is a genus of flowering plants in the arum family, Araceae. The genus is native to tropical America but widely cultivated and naturalized in other tropical regions. Several are grown for their starchy corms, an important food staple of tropical regions, known variously as malanga, otoy, otoe, cocoyam (or new bnocoyam), tannia, tannier, yautía, macabo, ocumo, macal, taioba, dasheen, quequisque," ape and (in Papua New Guinea) as Singapore taro (taro kangkong). The inflorescence in Xanthosoma is composed of a spadix with pistillate flowers at the base, a belt of sterile flowers offered as a reward for pollinators in the middle and staminate flowers on the upper part. Prior to opening, the inflorescence is enclosed within a leaf-like spathe.	The cormels are edible and rich in starch. The young, unfurled leaves of some varieties can be eaten as boiled leafy vegetables or used in soups and stews.	America	X				
120	Ximenia caffra	Sour plum	Ximenia caffra is a sparsely branched shrub or small tree to 6 m tall with a shapeless, untidy crown. Branches and twigs are armed with stout axillary spines and are glabrous or dense tomentose. Bark is grayish-brown to black, longitudinally fissured bark, red slash and rough on older, larger species. The tree is common in dry wooded bushland and wooded grassland especially on rocky hillsides and termite mounds, but is more abundant in coastal and lowland dry woodland. The common associate tree species are Acacia tortilis, Afzelia quanzensis, Brachystegia spiciformis, Grewia bicolor, Maytenus senegalensis, Terminalia sericea, among others.	The fruits are eaten raw, though bitter or sour, but refreshing and has an almond-like scent. The fruits are also suitable for preparing jam. The wood is used to make tool handles, spoons and in general construction. Oil from the seeds is used to soften leather, bowstrings, cosmetic products locally and for a general body ointment. The roots are used to treat abscess, severe stomachaches or colic, and against malaria, cough and bilharzia. It is used as a remedy for syphilis, hookworm, chest pains and generalized body pain. The roots are pounded and boiled with maize flour for porridge, which is eaten to prevent sterility in women. The roasted and pounded seeds are used for wounds.	Kenya, Malawi, Mozambique, South Africa, Tanzania, Uganda, Zambia			X	X	

SN	Scientific Name	Common Name	Description	Utilization	Origin	Distribution in Africa				
121	Ziziphus mauritiana	Jujube, ber	Ziziphus mauritiana is a spiny, evergreen shrub or small tree up to 15 m high, with trunk 40 cm or more in diameter; spreading crown; stipular spines and many drooping branches. Bark dark grey or dull black, irregularly fissured. It is a hardy tree that copes with extreme temperatures and thrives under rather dry conditions. Fruit quality is best under hot, sunny and dry conditions, but there should be a rainy season to support extension growth and flowering, ideally leaving enough residual soil moisture to carry the fruit to maturity. Native to the tropical and subtropical regions, Z. mauritiana is more widespread in areas with an annual rainfall of 300-500 mm. It is known for its ability to withstand adverse conditions, such as salinity, drought and waterlogging.	Fruit is eaten fresh or dried and can be made into a floury meal, butter, or a cheeselike paste, used as a condiment. Also used for candy making and pickling. The fruit is a good source of carotene, vitamins A and C, and fatty oils. A refreshing drink is prepared by macerating fruits in water. Z. mauritiana is used to stupefy fish in Ethiopia. A suitable species to aid in fixation of coastal dune sand.	Afghanistan, Algeria, Australia, Bangladesh, China, Egypt, India, Indonesia, Iran, Kenya, Libyan Arab Jamahiriya, Malaysia, Nepal, Pakistan, Thailand, Tunisia, Uganda, Vietnam	X	X	X	X	X

Appendix 3:

Status and progress of research on underutilized and forgotten crops in Africa

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
1	Faidherbiaalbida (T-Fr)	Apple ring acacia	Distributed throughout the dry zones of Africa, predominantly in the east and southern Africa (Orwa et al. 2009), is animportant agroforestry species for land restoration (PROTA 2018)	Published, Chang et al. (2018a, b)	RNA sequenced	In the pipeline
2	Vignasubterranea (A-OS)	Bambara groundnut	Originated in western Africa and grown for seeds in sub-Saharan semi-arid tropical regions of Nigeria, Cameroon and easternAfrica (Tanzania, Uganda) (PROTA 2018)	Published, Chang et al. (2018a, c)	RNA sequenced	Partially done
3	Lablab purpureus (A-LS)	Hyacinth bean	Consumed as a vegetable in tropical Africa (Nigeria and Kenya, Rwanda, and Ethiopia) (PROTA 2018)	Published, Chang et al. (2018a, d)	RNA sequenced	Partially done
4	Sclerocaryabirrea (T-Fr)	Marula tree	Occurs throughout sub-Saharan Africa except the humid zones. A wine called Amarula is commercially made from fruits in southern Africa (PROTA 2018)	Published, Chang et al. (2018a, e)	RNA sequenced	In the pipeline
5	Moringaoleifera (T-LFV)	Drumstick	Indian in origin but now naturalized in Africa and found throughout tropics and subtropics of Africa (PROTA 2018), is used as a leafy and fruit vegetable	Published, Chang et al. (2018a, f)	RNA sequenced	Partially done
6	Solanum aethiopicum (A-LV)	African eggplant	Found across the tropical sub-Saharan Africa, especially western, central, and some parts of eastern Africa (Uganda) Schippers(2000; Maundu et al. 2009), consumed as a leafy vegetable	Published, Song et al. (2019)	RNA sequenced	Yet to begin
7	Digitariaexilis (A-G)	Fonio	Consumed in the form of grains, is cultivated in western Africa since ancient time and now is grown scattered across the same region (PROTA2018)	Final assembly	Yet to begin	Yet to begin
8	Eleusinecoracana (A-G)	Finger millet	An African-origin cereal, is found to be growing in all the semi-arid and arid tropics of Africa in eastern, western, and southern regions (USDA 2019). Grains are consumed in the form of flour or fermented to make edible drink	Final assembly	RNA sequenced	Partially done

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
9	Gynandropsisgynandra (A-LV)	Spider plant	Generally found distributed all over the Africa near agricultural land and human settlements, but grown in drier zones of southern Africa in South Africa, Zimbabwe etc. (PROTA 2018), and is consumed as a leafy vegetable	Final assembly	In the pipeline	Partially done
10	Annona cherimola (T-Fr)	Cherimoya	Fruit tree, also referred to as custard apple is grown in tropical Africa specifically in western Africa (Algeria, Egypt, Libya, Somalia, and South Africa) (USDA 2019)	Final assembly	In the pipeline	Yet to begin
11	Artocarpusheterophyllus (T-Fr)	Jackfruit	Originally from Southeast Asia (India), and now naturalized in Africa and found to be growing in western and south-western Africa (Orwa et al. 2009)	Final assembly	In the pipeline	Yet to begin
12	Artocarpusaltilis (T-Fr)	Bread fruit	It is a naturalized widely found across Africa, mainly in tropical sub-Saharan Africa CABI 2018)	Final assembly	In the pipeline	Yet to begin
13	Celosia argentea (A-LV)	Cockscomb	It is used as a leafy vegetable and medicinal plant in Kenya, Congo, Benin, and Ethiopia grown on scattered plots in home gardens and priced during dry seasons (PROTA 2018)	Data generation on	In the pipeline	Yet to begin
14	Phaseolus vulgaris (A-LV, FV)	Common bean	Widely grown all over Africa with the main countries being Burundi, Kenya, Rwanda, DR Congo, Tanzania, Uganda, and Sudan (Wortmann et al. 1998). The green pods and young or dried seeds are consumed as food	Data generation on	Yet to begin	In the pipeline
15	Solanum nigrum (A-LV)	Black or African nightshade	Consumed as fruits or leaves. There is no exact information about its distribution (PROTA 2018), but found in tropical sub-Saharan regions of Africa (USDA 2019)	Data generation on	In the pipeline	Yet to begin

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
16	Adansoniadigitata (T-LV, F)	Baobab	Occurs naturally all over the sub-Saharan Africa. Fruits and leaves are consumed in various parts of Africa. Except for a few countries in central Africa (Rwanda, Burundi, Djibouti, and Uganda), it is found all over sub-Saharan Africa (PROTA 2018)	Data generation on	Tissue collected	In the pipeline
17	Anacardiumoccidentale (T-Fr)	Cashew nut	Found and grown in coastal and humid countries in eastern Africa (Kenya, Mozambique, Gambia, Sudan, Tanzania, Uganda) (Orwa et al. 2009)	Data generation on	In the pipeline	Yet to begin
18	Dovyaliscaffra (T-Fr)	Kei apple or wild apricot	Fruit tree found in southern Africa (South Africa, Botswana, Namibia, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Zimbabwe) and introduced in Ethiopia, Kenya, Sudan, Tanzania, and Uganda (Orwa et al. 2009)	Data generation on	In the pipeline	Yet to begin
19	Parinaricuratellifolia (T-Fr)	Mbola plum	Found in almost all the sub-Saharan Africa (Orwa et al. 2009), is grown for fruits	Data generation on	Yet to begin	In the pipeline
20	Parkiabiglobosa (T-Fr)	Monkey cutlass tree or African locust bean	Produces edible fruits and seeds the tree is a native of western Africa and found distributed across central and eastern Africa (Orwa et al. 2009; PROTA 2018)	Data generation on	In the pipeline	Yet to begin
21	Saba senegalensis (WCL-Fr)	Saba	Produces edible fruits and is found in western Africa and eastern-most Africa (Orwa et al. 2009)	Data generation on	Yet to begin	Yet to begin
22	Uapacakirkiana (T-Fr)	Wild loquat	It is a native fruit species of southern Africa (Angola, DR Congo, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe (Orwaet al. 2009))	Data generation on	In the pipeline	In the pipeline
23	Vitellariaparadoxa (T-Fr, OS)	Shea butter tree	Native of western Africa, but found across sub-Saharan belt till Sudan and Ethiopia (Orwa et al. 2009). Kernels, seed oil, and pulp are consumed by locals and seed oil is widely used in cosmetic and confectionary industry	Data generation on	In the pipeline	In the pipeline

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
24	Casimiroa edulis (T-Fr)	White sapote	Fruit tree widely found in Tanzania and South Africa (Orwa et al. 2009)	Data generation on	In the pipeline	Yet to begin
25	Dacryodes edulis (T-Fr)	African plum or Safou	Native fruit species of western Africa, but also distributed in central Africa (Orwa et al. 2009). Fruits are eaten raw or after boiling or roasting	Data generation on	In the pipeline	Yet to begin
26	Ziziphusmauritiana (T-Fr)	Jujube	Fruit species naturalized in Africa which is grown in western, central, and eastern Africa (Orwa et al. 2009)	Data generation on	In the pipeline	Yet to begin
27	Tamarindusindica (T-Fr)	Tamarind	Found across sub-Saharan western, central, and eastern Africa (Orwa et al. 2009), produces edible sour fruit which is used as a part of culinary preparations or consumed as juice	Data generation on	Tissue collected	Yet to begin
28	Syzygiumguineense (T)	Water berry	Fruit tree found in its native range of eastern and southern Africa (Orwa et al. 2009)	Data generation on	Tissue collected	Yet to begin
29	Irvingiagabonensis (T)	African bush mango	Native fruit species of western Africa and is found distributed across central and eastern sub-Saharan Africa till Uganda and Sudan (Orwa et al. 2009). Fruits can be eaten raw, but some tree parts are also used in the local dye industry	Data generation on	Yet to begin	Yet to begin
30	Ricinodendronheudelotii (T-Fr, Sp)	Groundnut tree	Native tree of western Africa and found distributed across central and eastern sub-Saharan Africa (Orwa et al. 2009). The fruits are edible and after drying are used a spice	Data generation on	Tissue collected	Yet to begin
31	Detariummicrocarpum (T-Fr)	Sweet dattock	Occurs in the drier regions of west and central Africa (PROTA 2018). The fruit can be eaten raw or fruit pulp can be dried and stored.	Data generation on	Yet to begin	Yet to begin
32	Garcinia livingstonei (T-Fr)	Wild mangosteen	Fruit tree found across southern and eastern Africa (Orwa et al. 2009)	Data generation on	Yet to begin	Yet to begin

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
33	Dioscoreaalata (TDd) (PT-T)	Water yam	Introduced tuberous root vegetable crop naturalized in Africa. It is primarily grown predominantly in western Africa (Obidiegwu et al.2009)	Data generation on	By collaborator	In the pipeline
34	Macrotylomageocarpum (A-PS)	Kersting's groundnut	It is a pulse crop with similar growth habit as peanut. The seeds are consumed after cooking or roasting and can be made into flour for various uses. It is suggested to have originated from Western Africa and grown as a minor crop in West African Savanna zone, Cameroon, Tchad, and also reported to be grown in Mauritius, Tanzania, and Fizi (Ayenan and Ezin2016)	Yet to begin	Yet to begin	In the pipeline
35	Strychnoscocculoides (T-Fr)	Monkey orange	Native fruit tree of southern Africa, is also found in Botswana, Kenya, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe (Orwa et al. 2009)	Yet to begin	In the pipeline	In the pipeline
36	Strychnosspinosa (T-Fr)	Kaffir orange	Mainly found in eastern Africa (Kenya Ethiopia, Sudan, Tanzania, Uganda) and Mali, Zambia, and Madagascar (Orwa et al. 2009),which is eaten as raw fruit	Yet to begin	Tissue collected	Yet to begin
37	Vitexdoniana (T-Fr)	Allanblackia	Native tree of Tanzania and found only in the humid tropical regions of the country (Orwa et al. 2009). The edible seed oil is in high demand locally and internationally and is used in cosmetics and confectionary industry	Yet to begin	Tissue collected	Yet to begin
38	Allanblackiastuhlmannii (T-Fr, OS)	Allanblackia	Native tree of Tanzania and found only in the humid tropical regions of the country (Orwa et al. 2009). The edible seed oil is in high demand locally and internationally and is used in cosmetics and confectionary industry	Yet to begin	Tissue collected	Yet to begin

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
39	Annona reticulata (T-Fr)	Bullock's heart	Naturalized fruit species in Africa from central America, is predominantly grown in South Africa and sporadically in other tropical African countries (Orwa et al. 2009)	Yet to begin	Tissue collected	Yet to begin
40	Vangueriamadagascariensis (T-Fr)	Wild medlar	Fruit tree, is found in east, southern, and southwest Africa (Orwa et al. 2009)	Yet to begin	In the pipeline	Yet to begin
41	Passiflora edulis (WCL-Fr)	Passion fruit	It is naturalized fruit species found in sub-Saharan Africa and in grown in eastern and southern African countries (USDA 2019)	Yet to begin	In the pipeline	Yet to begin
42	Brassica carinata (A- LV)	Ethiopian kale	It is being cultivated in Ethiopia since thousands of years, and also grown in east and southern Africa to some extent (PROTA 2018)	By collaborator	-	In the pipeline
43	Dioscorearotundata (PT-T)	White yam	Probably originated in west Africa,where it is extensively cultivated (Aighewi et al.2015)	By collaborator	-	In the pipeline
44	Lens culinaris (A-LS)	Lentils	Are grown in tropical parts of Africa,predominantly in eastern and southern Africa(PROTA 2018)	By collaborator	-	In the pipeline
45	Musa acuminata (NWF-Fr)	Musa acuminate	It is sequenced as one of the parentsof widely cultivated triploid banana.	Other group	-	In the pipeline
46	Allium cepa (A-RV)	Onion	It is an introduced root (bulb) vegetable speciesto Africa and is grown across tropical west, east,and southern Africa (PROTA 2018)	By collaborator	-	Yet to begin
47	Amaranthus tricolor (A-G)	Amaranth species	It is being consumed as leafy vegetable, isintroduced from tropical Asia, but is now naturalizedin Africa and grown in west, east andsouthern Africa (PROTA 2018)	By collaborator	-	Yet to begin
48	Carica papaya (P-Fr)	Papaya or paw paw	In Africa, it is grownfor its fruit in east and southern Africa as fruitcrop (da Silva et al. 2007)	By collaborator	-	Yet to begin

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
49	Citrulluslanatus (A-Fr, OS)	Egusi melon or west African melon	The fruit species originated from western Kalahariregion of Namibia and Botswana. Apart fromsouthern Africa, now it is also found across MediterraneanAfrica (PROTA 2018)	By collaborator	-	Yet to begin
50	Cucurbita maxima (A-FV)	Pumpkin	Reported from many countriesin tropical Africa and probably occurs in all thecountries (PROTA 2018), where it is grown as afruit vegetable	Done by CuGenDB; http://cucur bitgenomic s.org (Zhenget al. 2019)	-	Yet to begin
51	Eragrostistef (A-G)	Tef	Originated in northern Ethiopia. It is cultivatedfor its grains and cultivation is confined mainly toEritrea and Ethiopia (PROTA 2018)			Yet to begin
52	Ipomoea batatas (PR-RV)	Sweet potato	Introduced root tuber species toAfrica, but now it is grown extensively in all thetropical Africa primarily in eastern and westernAfrica (Glato et al. 2017)	By collaborator		Yet to begin
53	Musa acuminata AAA Group (Matoke) (NWF-Fr)	Matoke or East African highland bananas	Originatedin African great lakes region, is eaten as fruitvegetable in Uganda, Tanzania, Burundi, DemocraticRepublic of Congo, Kenya, and Rwanda(PROMUSA 2017)	By collaborator		Yet to begin
54	Momordicacharantia (A-FV)	Bitter gourd	Fruit vegetable probably domesticatedin India and southern China, occurs almostthroughout tropical Africa and occasionally cultivatedin east Africa (PROTA 2018)	By collaborator		Yet to begin
55	Mangiferaindica (T-Fr)	Mango	Naturalized fruit tree in Africa andis grown in tropical parts of Western, and easternAfrica (Orwa et al. 2009)	By collaborator		Yet to begin
56	Macadamia ternifolia (T-Fr)	Macadamia nut	Introduced nut tree speciesgrown in Ethiopia, Kenya, Malawi, South Africa,Tanzania, Zimbabwe (Orwa et al. 2009)	By collaborator		Yet to begin
57	Perseaamericana (T-Fr)	Avocado	Introduced fruit tree in Africa, which is grown almost all over sub-Saharan Africa(Orwa et al. 2009)	By collaborator		Yet to begin

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
58	Psidiumguajava (T-Fr)	Guava	Naturalized fruit tree grown in Ethiopia,-South Africa, Uganda, Togo, Senegal, and Nigeria(Orwa et al. 2009)	Other group		Yet to begin
59	Morus alba (T-LV, FV)	Mulberry	Grown in eastern and southern Africa(Orwa et al. 2009), where the fruit is consumedfresh or as juice	Other group		Yet to begin
60	Vigna radiate (L.) R.Wilczek	Mung bean	Mung bean originated in India or the Indo-Burmese region where it has been cultivated for millennia. is cultivated in many tropical African countries. In certain areas of Kenya, especially the Eastern Province, mung bean is the principal cash crop (Mogotsi, 2006).	Published, Kang et al. (2014)	RNA sequenced	In the pipeline
61		African yam bean	African yam bean is grown in West Africa, particularly in Cameroon, Cote d'Ivoire, Ghana, Nigeria and Togo (Porter 1992)	Yet to begin	In the pipeline	In the pipeline
62		Okra	Okra originated from the Abyssinian center, an area that includes Ethiopia, a portion of Eritrea, and the eastern, higher part of the Anglo-Egyptian Sudan. ... From Arabia okra spread over North Africa, completely around the Mediterranean, and eastward (Sharma, 1993).	Yet to begin	In the pipeline	In the pipeline
63	Dioscorea spp.	Bush yam		Published, Scarcelli et al. (2019)	RNA sequenced	In the pipeline

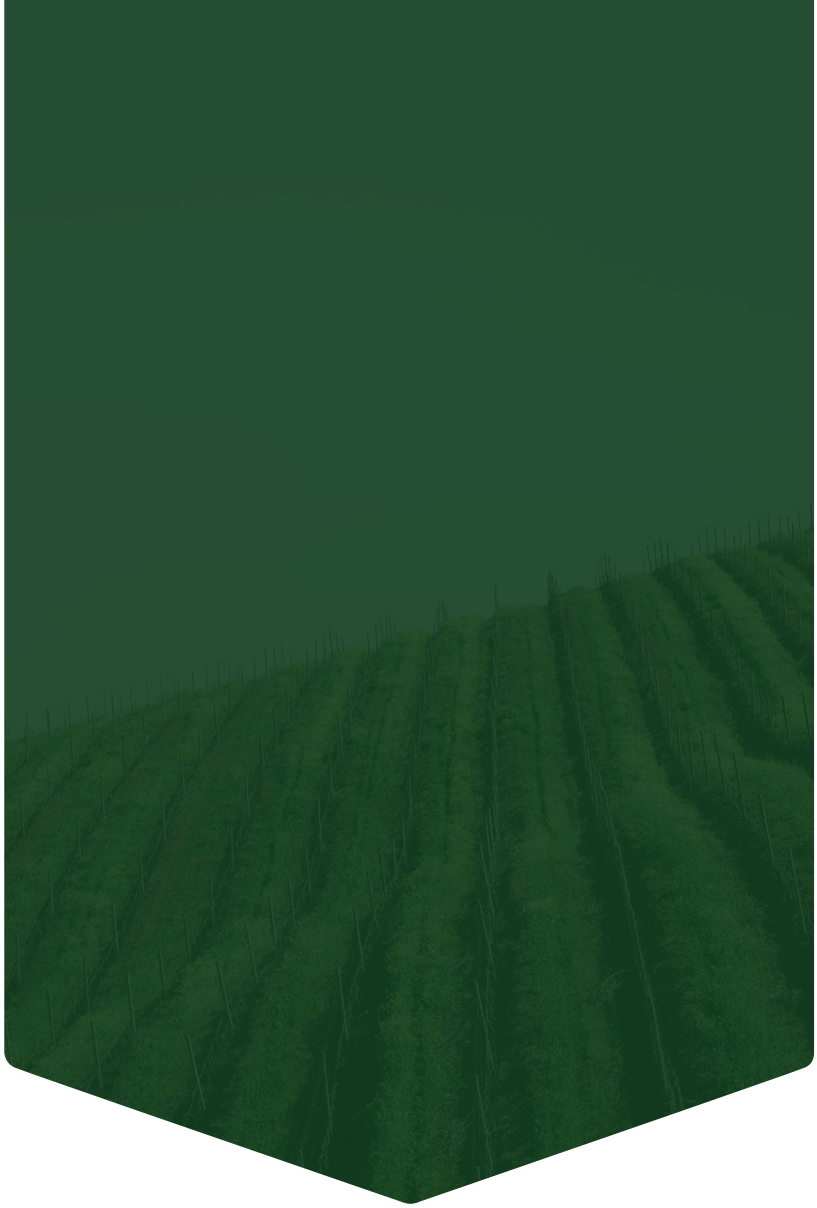
S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
64	Corchorus olitorius	Cochorus	The geographical origin of Corchorus olitorius is often disputed, because it has been cultivated since centuries both in Asia and in Africa, and it occurs in the wild in both continents. Some authors consider India or the Indo-Burmese area as the origin of Corchorus olitorius and several other Corchorus species. However, the presence in Africa of more wild Corchorus species and the larger genetic diversity within Corchorus olitorius point to Africa as the first centre of origin of the genus, with a secondary centre of diversity in the Indo-Burmese region (Fondio et al., 2011)	Published, Islam et al., 2017	RNA sequenced	In the pipeline
65	Vigna unguiculata	Cowpea	It is grown in the semi-arid tropics covering Africa, Asia, Europe, the United States, and Central and South America. It originated and was domesticated in Southern Africa	Published, Lonardi et al. (2019)	RNA sequenced	In the pipeline
66	Glycine max L.	Soybean	soya bean (Glycine max) is a species of legume native to East Asia, widely grown for its edible bean, which has numerous uses	Publised, Schmutz et al. (2010)	RNA sequenced	In the pipeline
67	Phaseolus lunatus L.	Lima bean	Lima bean originated from Guatemala, Mexico and Peru. Once domesticated, it spread throughout the Americas, and the Spaniards imported it to the Pacific Islands and the Philippines. It later spread to South-East Asia while the slave trade resulted in the introduction of the lima bean to Western and Central Africa (Heuzé et al., 2015).	Published, Garcia et al. (2021)	RNA sequenced	In the pipeline
68	Zea mays	Maize		Published, Jiao et al. (2017)	RNA sequenced	In the pipeline

S/No	Species name (growth habit/type of crop)	Common Name	Distribution in Africa	Whole Genome sequencing status (WGS)	Transcriptome Sequencing status	Re-sequencing status
69	Phaseolus vulgaris	Kidney bean	Phaseolus vulgaris originated from Central and South America, where it was cultivated as early as 6000 BC in Peru and 5000 BC in Mexico. It was introduced to the Old World by the Spaniards and the Portuguese. It is now widespread and cultivated as a major food crop in many tropical, subtropical and temperate areas of the Americas, Europe, Africa and Asia (Wortmann, 2006)	Published, Schmutz et al. (2014)	RNA sequenced	In the pipeline
70	Cajanus cajan	Pigeon pea	The origin of Cajanus cajan is either North-Eastern Africa or India (Ecocrop, 2016)	Published, Varshney et al. (2012)	RNA sequenced	In the pipeline

Appendix 4:

Map showing the origin of forgotten food across the globe


Commodity Name
Acacia (Apple-ring)
African bush mango
African Eggplant
African Gnetum
African Mangosteen
African Medlars
African Nightshade
African Orange
African persimmon
African Potato
African Yam bean
Aizen, Nabedega
Allanblackia
Avocado
Balanites
Bambara groundnut
Bananas
Baobab
Barley
Bitter yam
Bittergourd
Black gram
Breadfruit
Butterfruit
Canarium nut, Ramy nut
Cape tomato
Carissa
Cashew
Celosia
Ceylon spinach
Chocolate berries
Coconut
Cocoyams, Arrowroots
Custard Apple
Drum stick
Elephant ears
Emmer
Enset
Ethiopia Mustard
Ethiopian Oats
False yam
Favabean
Finger Millet
Fluted gourd
Fonio
Geocarpa groundnut
Gingerbread Plums
Grain amaranth
Green Bean
Groundnut
Guava
Gumvines
Horned Melon
Horse gram
Icacina
Imbe
Jack bean
Jack Tree
Jujube, ber
Jute mallow
Kei Apple
Kersting's groundnu
Lab lab Bean
Lentils
Lima bean
Locust bean
Mango
Mangosteen
Marama bean
Marula
Medlars
Melon
Mobola plum
Monkey Oranges
Mucuna
Mulberry
Mungbean
Natal orange
Nightshade
Njansang
Nsaban, kabaa
Okra
Onion
Papaya
Passion Fruit
Pigeon pea
Potato
Prickly pear
Pumpkin
Roselle
Rubber vines
Safou, African plum
Shea
Sickle Senna
Sour plum
Spiderplant
Star apple
Sugarplums
Sunn hemp
Sweet detar
Sweet Detar
Sweet Potato Leaves
Sword bean
Tamarind
Taro
Tef
Tree grapes
Veg tallow tree
Vegetable amaranth
Vine spinach
Water berry
Watermelon
White sapote
Wild Custard Apple
Wild loquat
Winged bean
Yams
Yoruban bologi



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