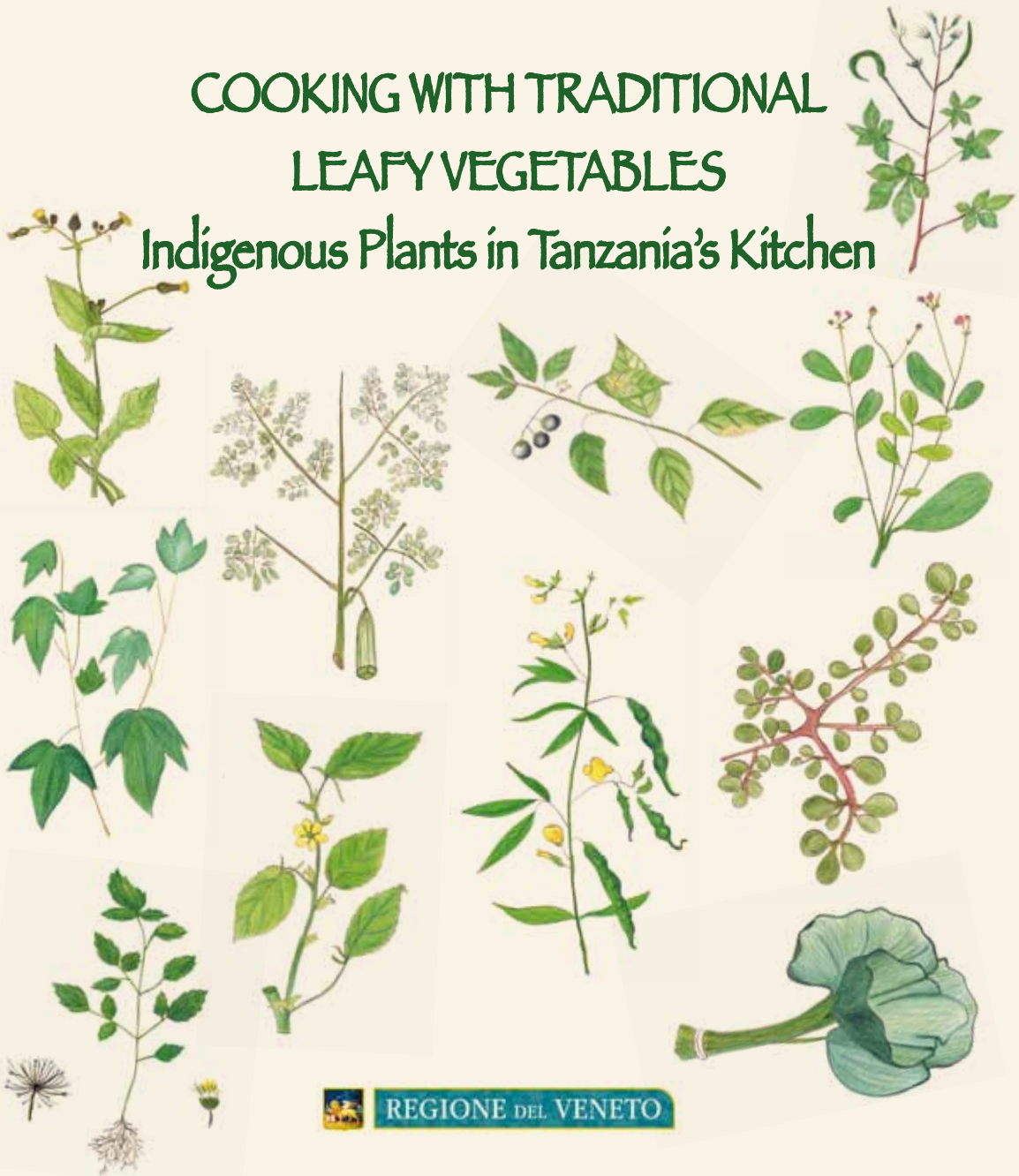
Slow Food®

Slow Food Foundation
for Biodiversity

COOKING WITH TRADITIONAL LEAFY VEGETABLES

Indigenous Plants in Tanzania's Kitchen



REGIONE DEL VENETO

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ISBN 9976 910 58-4

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Slow Food

Founded in Italy in 1989 to protect the pleasures of the table from the homogenization of modern fast food and fast life, Slow Food is an association with over 100,000 members in 153 countries across five continents. Slow Food promotes gastronomic culture, develops taste education, conserves agricultural biodiversity, safeguards traditional foods at risk of disappearance all over the world through the projects of the Slow Food Foundation, organizes events showcasing artisan products (Cheese in Bra, Italy, Salone del Gusto and Terra Madre in Turin, Italy, Slow Fish in Genoa, Italy) and publishes magazines, guides, recipe collections and essays.

Through the **Slow Food Foundation for Biodiversity** we build the capacity of food producers and defend biodiversity and food traditions by creating new economic models that are being put into practice all around the world: 300 Presidia – sustainable food production – projects, 800 Ark of Taste products and Earth Markets.

www.slowfoodfoundation.com

Through the worldwide **Terra Madre** network we give a voice to small-scale farmers and food producers and bring them together with cooks, academics and youth to discuss how to improve the food system collaboratively. Meetings are held at the global, regional and local level and resulting projects are promoting knowledge exchange around the globe.

www.terramadre.org

Our pioneering food and **taste education** projects help people to understand where food comes from, how it is produced and by whom, creating awareness, new markets, and positive social change.
With our membership we organize events and programs from the international to the local level that showcase sustainable agriculture and artisan food production, and connect producers with consumers.

www.slowfood.com

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Region of Veneto and Slow Food in Tanzania

In a more and more interdependent and globalized international scenario, development cooperation is becoming a strategic sector, not only for countries and supranational agencies, but also for the many public and private actors.

Regional authorities, in particular, play a leading role in the framework of decentralized cooperation, as they are able to activate resources in their territories and present themselves to beneficiary countries as trustworthy partners for the design and implementation of development policies.

In the last ten years, the Veneto Regional Authority has financed 642 project in 88 countries, subdivided into six large areas of intervention: 1) children and women's rights; 2) health and social issues; 3) training courses and access to primary education; 4) provision of infrastructures and know-how; 5) safeguard of the environment and water resources; 6) integrated development projects.

The cooperation with the Slow Food Foundation for Biodiversity is perfectly integrated in this context. Joint projects (which also involved the Chamber of Commerce, Industry, Crafts and Agriculture of Rovigo) were started in Brazil, Oceania (New Caledonia) and Tanzania, with the aim of improving the quality of life of rural and fishermen communities in these countries, thus reducing their socio-economic vulnerability, improving the sustainability of cultivation and production, promoting products and identifying new local, national and international markets.

Another important activity is the selection of new products which meet the necessary requirements to become Presidia. This is done through on-site visits to evaluate the quality and quantity of products, the identification of suitable local partners and the involvement of local groups of producers.

Promoting and supporting high quality local agricultural and food products is the aim of a third series of projects carried out by the Foundation. These involve producers in local and national events and help spread knowledge on Presidia products through the internet site of the Slow Food Foundation for Biodiversity.

All Presidia are created in cooperation with local institutional representatives, who are responsible for coordinating the related activities in future years, so as to ensure the sustainability of projects.

Shared goals, the adoption of joint strategies and the promotion of network activities demonstrate the shared will to follow the path of human and sustainable development. This is also the commitment of the Veneto Regional Authority.

Maria Luisa Coppola
Councillor of Economy and Development, Research and Innovation, Veneto Region

REGIONE DEL VENETO

www.regione.veneto.it

Acknowledgement

Writing a recipe book is not an easy task. It requires a lot of time, in particular when you are dealing with lesser-known ingredients, and experimenting with preparation methods in order to discover nutritious and tasty dishes.

This collection of recipes based on some of Tanzania's indigenous vegetables was developed by RESEWO in collaboration with many individuals and organizations. Special thanks go to the following:

• RESEWO members and all other participants who attended the capacity building workshop held on October 24-30, 2008 at VETA Institute in Dar es Salaam.

• TACAIDS for funding the capacity building workshop to facilitate the development of recipes using indigenous vegetables.

• THE SLOW FOOD FOUNDATION FOR BIODIVERSITY for funding, editing and printing this recipe book.

• All RESEWO members and stakeholders who shared their ideas and recommendations on the use of indigenous vegetables.

• Leaders of the Makumbusho Village at Kijitonyama, Dar es Salaam for allowing RESEWO to use their land for developing demonstration plots on the cultivation of traditional vegetables. The indigenous vegetables grown on these plots were used for developing the recipes in this book.

• Mikocheni Ward Executive Officer (WEO) in Kinondoni district for supporting RESEWO during preparation of the Kiswahili version of this book, and also for his assistance in tasting the recipes.

• Tanzania Food and Nutrition Centre (TFNC) for providing technical support and sharing their resources.

• Tanzania Traditional Energy Development Organization TATEDO for supporting RESEWO in many ways including technical support.

• The foundation for civil society for funding the first recipe book, "Kula Mboga za asili kwa Afya yako."

Introduction

Regent Senior Women's Group (RESEWO) works to promote the reintroduction of indigenous vegetables into theTanzanian diet, as these foods are important sources of nutrients that can help improve the health of our communities. With malnutrition continuing to be a problem across the country, we must realize that one of the key factors contributing to poor nutrition is low consumption of fruits and vegetables. Today, many people do not realize the importance of consuming an adequate quantity of vegetables and fruits in a daily diet. Moreover, many traditional foods are ignored and are fast disappearing from Tanzanian meals. To turn this around, RESEWO is involved in various activities to promote the cultivation and use of indigenous vegetables:

- Education and promotion regarding cultivation and use of indigenous vegetables.
- Distribution of indigenous vegetable seeds.
- Individual RESEWO members developing backyard vegetable gardens.
- Growing indigenous vegetables at the RESEWO gardens, located at the Village Museum Kijitonyama.

Cooking with Traditional Leafy Vegetables was developed by RESEWO to compliment these activities, with the aim of encouraging more Tanzanians to use local varieties of vegetables in their cooking. The book has been written to demonstrate not only the preparation techniques but also the health and nutritional values of these vegetables. For all people, healthy eating begins with ensuring a variety of foods are consumed, providing a high level of vitamins and minerals through a balanced diet containing adequate quantities of fruits and vegetables as well as the other food groups. Testimonies from communities who have long consumed indigenous vegetables speak of the quality and importance of these vegetables for human health and, as this book reveals, their many medicinal values.

The multipronged approach promoted by RESEWO is fully shared by Slow Food, whose aim is to raise awarness among consumers about their daily diets. Slow Food advocates safeguarding traditional indigenous cuisine through the promotion of local recipes, the decentralization of food processing, and taste education activities. Activities such as these being undertaken by RESEWO will help to improve the nutritional status of all people, including those living with HIV/AIDS. Efforts to assist those affected by HIV/AIDS focus primarily on specific treatments but it is also important to understand the fundamental and important role of good nutrition.

A recipe book can also become an instrument that allows us to transform traditional knowledge into real tastes and aromas on our plates. These, in turn, can shape our memories, linking food to all things that make up our individual histories: family, seasons, events, etc. In this way, recipe books bring to life a collective heritage, and can practically help preserve products, producers and landscapes, particularly in the case of leafy vegetable. The only food varieties that disappear are the ones that we no longer eat, so cooking them in an appetizing way ensures that they continue to be used.

A recipe book, *Cooking with Traditional Leafy Vegetables* as been conceived has natural complement to practical activities "in field". In Africa, vegetable plots represent above all an accessible source of healthy food and extra income for local communities. In Africa Slow Food is promoting gardens as places to increase awareness of local plants and biodiversity, respect for the environment, the sustainable use of soil and water and the safeguarding of traditional recipes.
There are many kinds of garden: school gardens, primarily educational, with some produce used for school meals and some sold; community gardens, used for subsistence, with a small percentage of produce sold at the market; and urban and peri-urban gardens, primarily used to produce food to sell on the local market.
They are farmed sustainably, with composting, natural treatments for pests and rational water use, and planted with local varieties, intercropping fruit trees, vegetables and medicinal herbs.

Fresh indigenous vegetables are available from RESEWO gardens at the Village Museum Kijitonyama, as well as from some of Dar es Salaam's markets - especially blackjack and fame flower, which have become widely available in recent years.

To visit RESEWO gardening plot and learn more about the association's education activities please contact:
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From the Editor

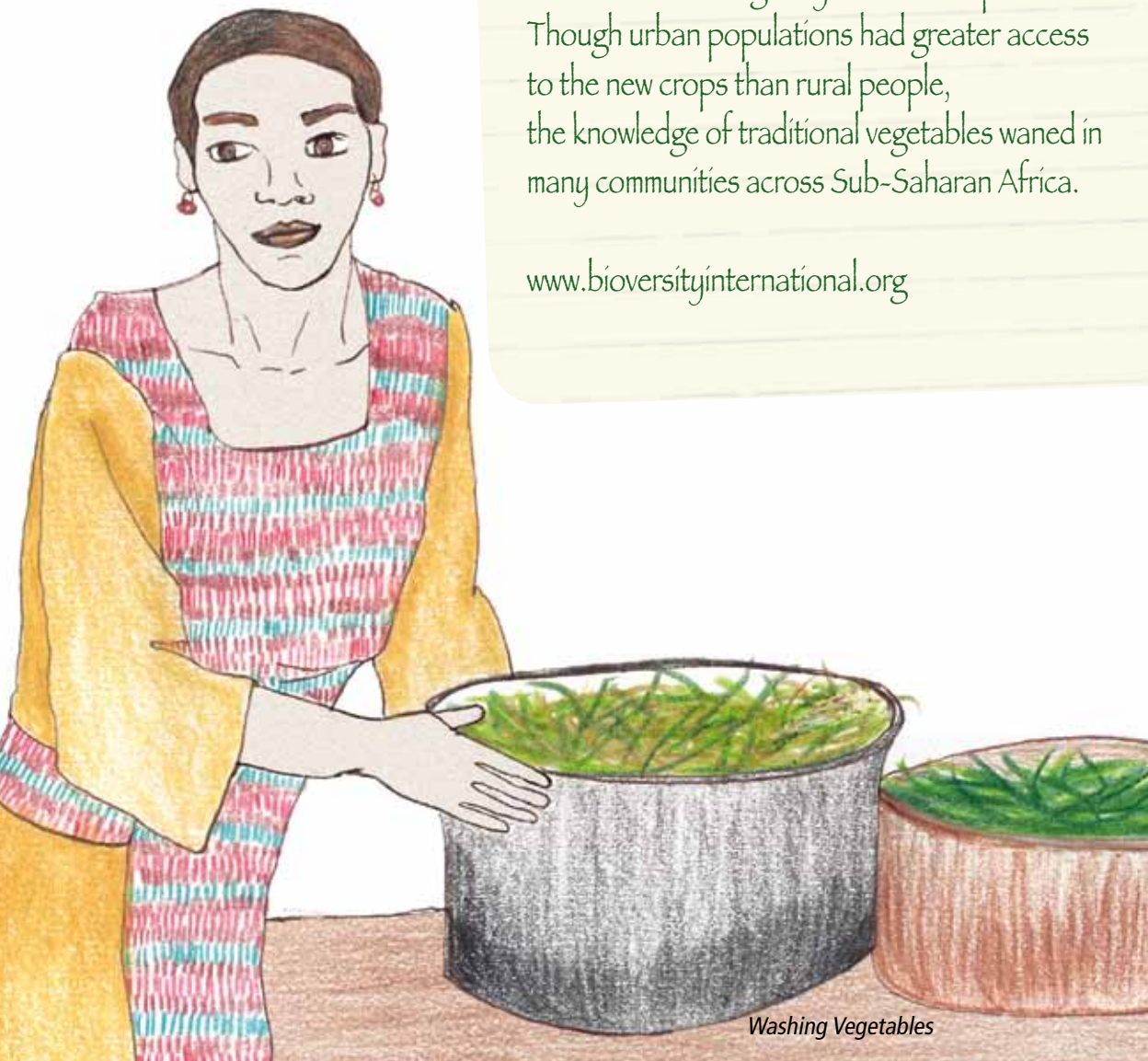
Cooking with Traditional Leafy Vegetables focuses on some of the native vegetables found across Tanzania, providing an introduction to their growing areas, local names and traditional uses in addition to a selection of recipes. The vegetables have been chosen for their high nutritional value and information on their medicinal uses is also provided. Furthermore, the book teaches us how to recognize and grow these vegetables and how to preserve some of them or use them to make teas. This information will be invaluable for all those who wish to discover the natural foods we have on our doorstep, to use them in our daily life, and assist Tanzanian communities to return to a more holistic approach to food.

With simple and easy to follow recipes, this book will be very helpful to many Tanzanian home cooks who are not familiar with indigenous vegetables and their important role in our local cuisine. The book will also be useful for schools and other educational institutions, organizations dealing with food and nutrition, health services and women's groups.

Esther Pendaeli
Editor

Sub-Saharan Africa contains an enormous variety of leafy vegetables, estimated to comprise between 800-1000 species. During the colonial era, African natives came to believe that their traditional foods, clothing, religions and medicine were inferior to the new novelties brought by the colonial powers. Though urban populations had greater access to the new crops than rural people, the knowledge of traditional vegetables waned in many communities across Sub-Saharan Africa.

www.bioversityinternational.org



Washing Vegetables

1. BLACKJACK

Kiswahili:	Kishona nguo
English:	Blackjack
Scientific names:	*Bidens Pilosa*

To find out more, see summary on page 42

Local names:

Nyamwezi:	Lekalamata
Gogo:	Mhangalale
Hehe:	Livanivani
Luguru:	Nyaweza
Nyaturu:	Mpangwe
Ngoni:	Kisosoki, Manyonyoli
Chagga:	Imbara, Makidongo
Haya:	Obukurura
Bondei:	Twanguo
Maasai:	Enderepeni
Matengo:	Injule
Sambaa:	Kitojo, Mbwembwe
Meru:	Ishashando

Where it grows

A wild herb found all over Sub-Sahara Africa that grows well on highlands and tropical areas with high rainfall. In addition to growing spontaneously in cultivated areas, wastelands and forests, blackjack is also farmed. It can be found across Tanzania.

Its uses

Blackjack is an edible vegetable, and is also used in medicine, fodder, herbal tea and as a spice. The leaves are also used to prepare blackjack tea and juice. Despite the variety of uses, some communities still view the plant as a weed only.

Nutritional and medicinal uses

Blackjack contains many essential nutrients, including a high level of vitamin A, vitamin C, iron and protein. As a medicinal plant it has traditionally been used for dietary anemia, helping blood flow, prevention of malaria, alleviating toothache, improving eye health and in treatment of wounds - including those experienced by people suffering from HIV/AIDS.

Sautéed blackjack

INGREDIENTS

2 ½ bunches blackjack leaves
2 onions
1 carrot
1 ½ tablespoons cooking oil
¼ teaspoon salt

METHOD

• Wash leaves thoroughly and trim off any unwanted parts.
• Peel, wash and dice carrots and onions.

•Heat oil in a saucepan and fry onions until soft.
• Add salt and the blackjack, stirring continuously.
• Add carrots and continue to stir the mixture on the heat until all ingredients are soft and cooked through.
This dish can be served with stiff porridge, rice or yams.

Blackjack and fame flower with groundnut

INGREDIENTS

2 bunches of fame flower
1 bunch of blackjack
2 onions
6 garlic cloves, crushed
1 carrot
1 tablespoon crushed groundnut
2 tablespoons of hot water
¼ teaspoon salt

METHOD

• Wash vegetables thoroughly and trim off any unwanted parts.
• Peel, wash and chop oinions.
• Heat oil in saucepan and then add onions, crushed garlic and salt, stirring until softened.
• Add the blackjack and cook until the leaves have softened and are cooked through. Add fame flower and stir until softened.
• Add finely chopped carrots.
• Mix groundnut with 2 tablespoons of hot water in a bowl and then add this mixture to the vegetables.
• Stir over heat until all vegetables are cooked through.
This dish can be served with stiff porridge, rice, cooked green bananas or boiled pounded maize.

Blackjack and fame flower with coconut

INGREDIENTS

2 bunches fame flower
2 bunches blackjack
2-3 medium tomatoes
2 large onions
12 cloves of garlic
1 hot pepper (optional)
1 small coconut
1 teaspoon salt
3 tablespoons cooking oil

METHOD

• Wash vegetables thoroughly and trim off any unwanted parts.
• Parboil blackjack and fame flower in half a cup of water until half cooked. Place on a plate to the side.
• Chop onions and crush garlic cloves.
• Wash and chop tomatoes.
• Prepare the coconut milk.
•Heat oil, add onions and fry until soft and then add garlic.
• Add tomatoes and stir.
• Add cooked blackjack and fame flower to the pan and stir.
• Add coconut milk to the pan. Stir well and cook until milk is absorbed.
• Continue to stir until the vegetables.
This dish can be served with rice, boiled cassava, cooked green bananas, yams or boiled pounded maize.

2. FAME FLOWER

Kiswahili:	Mchicha maua
English:	Fame flower
Scientific name:	*Talinum/Portulacifolium*

To find out more, see summary on page 42

Local names:

Bondei and Sambaa:	Tongwe
Zigua:	Kologwe
Kaguru:	Mbwimbwi
Mwera:	Nandele
Maasai:	Mbenek

Where it grows

This long-lived, drought-resistant, herbaceous shrub is found throughout the tropics and grows easily across most of Tanzania's regions. In Tanzania, the fame flower plant is only wild harvested and it is not currently cultivated on farms or in home gardens.

Its uses

Fame flower is used as a vegetable, although many people do not realize it is edible and also has various medicinal uses. The leaves are eaten as a cooked vegetable or raw as a salad, alone or with young stem parts. In Tanzania, the leafy stem are often cooked together with other vegetables or mixed with coconut milk or pounded groundnuts. The leaves can be stored dry for later use and the plant is also used as a fodder for cattle and goats.

Nutritional and medicinal uses

In Tanzania a leaf decoction is traditionally used as a remedy for constipation and the plant is credited with aphrodisiac properties. In northern Africa leaves are applied medicinally against eye diseases and the root against cough.

Fame flower with beef

INGREDIENTS

2 bunches of fame flower
1 large onion
6 cloves garlic
1 small carrot
1 small tomato
¼ kilo beef (steak)
½ teaspoon salt
3 tablespoons cooking oil

METHOD

• Wash and trim meat.
• Cut meat into small cubes and boil in two cups of water.
• Peel, wash and chop onion and carrots. Wash and chop tomato and peel and crush garlic.
• Drain meat from pan when cooked.
• Heat oil and add onions and fry until soft, then add carrots and garlic and continue to fry. Stir in tomato.
• Wash and chop fame flower, add to pan and stir.
• Add cooked meat and stir. Leave to continue cooking.
• Stir in salt just before removing from heat to serve.

This dish can be served with stiff porridge, rice, cooked green bananas, pancakes, sweet potatoes or boiled cassava.

Fame flower with spider plant

INGREDIENTS

1 bunch of fame flower
1 bunch spider plant
2 medium onions
1 medium tomato
1 small carrot
5 cloves garlic
2 tablespoons crushed groundnuts
½ teaspoon salt
1 tablespoon cooking oil

METHOD

• Wash green vegetables thoroughly and trim.
• Peel, wash and chop onions, carrots, tomato and crush garlic.
• Prepare groundnut milk.
• Heat oil and fry onions until soft.
• Add garlic, tomato, carrots and salt and stir.
• Stir spider plant into the mixture, cooking until the leaves become tender.
• Add fame flower and cook for around 5 minutes on high heat while continuing to stir.
• Stir in groundnut milk and cook for another 5 minutes before serving.

This dish can be served with stiff porridge, rice, yams, boiled cassava, pancakes or bread.

3. SPIDER PLANT

Kiswahili: Mgagani
English: Spider plant
Scientific name: *Gynandropsis gynandra*

To find out more, see summary on page 43

Local names:

Haya:	Mhilili/Nyausako
Nyamwezi:	Kakunguni
Sandawi:	Kekeneka
Zigua:	Mweganje
Sambaa:	Mgagani

Where it grows

The spider plant grows wild in the tropics and is well established in the highlands of Africa with rainfall of more than 500 millimeters. The vegetable can be found in Tanzania's markets, but it is only available in small quantities as it is not cultivated by farmers.

Its uses

Spider plant is used as an edible vegetable by rural communities across Tanzania and East Africa. To soften its bitter taste, it is usually mixed with other vegetables, such as fame flower, wild spinach, pumpkin leaves or black nightshade.

Nutritional and medicinal uses:

Spider plant is a good source of iron and beta-carotene and has been reported to help control blood pressure, toothaches, ear problems, colds, stomach pain and high fever.

Spider plant with coconut

INGREDIENTS

4 bunches of spider plant
1 medium coconut
2 medium tomatoes
1 medium onion
1 small carrot
1 tablespoon cooking oil
½ teaspoon salt

METHOD:

- Prepare one cup of coconut milk.
- Wash spider plant leaves thoroughly and drain.
- Peel, wash and chop onion and carrot. Wash and chop tomatoes.
- Heat oil in a saucepan, add onions and fry until soft.
- Stir in tomatoes and salt, and leave to cook for a few minutes.
- Stir in carrots.
- Add spider plant leaves to the mixture and stir, until the mixture is almost cooked completely.
- Heat coconut milk and add to the pan, stirring continuously until coconut milk is absorbed.
- Remove from heat and serve.

This vegetable dish can be served with stiff porridge, rice, yams or potatoes.

Traditional Tanzanian house

4. PURSLANE

Kiswahili: Tako da hasanni
English: Purslane
Scientific name: *Portulaca oleracea*

To find out more, see summary on page 44

Local names:

Bondei/Zigua: Dangadanga / Tako da Hasanii
Digo: Tako da Hasanii

Where it grows

Highly resistant to drought, this long-lived herbaceous shrub is grown throughout the tropics and in mild subtropical climates. Purslane can be found growing across Tanzania, in regions such as Tanga, Dar es Salaam, Coast, Morogoro, Kilimanjaro and Shinyanga, as well as many other African countries. It is a common weed in agricultural fields with rich soil, but it is not actually cultivated by farmers, and is difficult to find in the market.

Its uses

When young the whole plant is edible and is cooked either alone or mixed with other vegetables. This plant belongs to the fame flower family and can be prepared in a very similar way to fame flower.

Nutritional and medicinal uses:

Cooked Purslane has been traditionally used to help in preventing constipation and managing heartburn.

Purslane with groundnuts

INGREDIENTS

4 bunches of purslane
½ cup groundnuts
2 medium tomatoes
1 medium onion
1 small carrot
1 tablespoon cooking oil
¼ teaspoon salt

METHOD:

- Grind groundnuts into a fine powder
- Wash purslane thoroughly, drain and chop.
- Peel, wash and chop onion and carrot. Wash and chop tomatoes.
- Heat oil in a saucepan, add onions and fry until soft.
- Add tomatoes and salt, stir and leave to cook. Add carrots, stir.
- Add purslane leaves to the mixture and stir. Allow mixture to almost cook completely.
- Mix the groundnut powder with one cup of hot water and add to the fried ingredients.
- Add copped purslane into the mixture and cook for 7-10 minutes.

This vegetable dish can be served with stiff porridge, rice, yams or potatoes.

Traditional leafy vegetables are those plants whose leaves or aerial parts have been integrated in a community's culture for use as food over a long span of time. These vegetables are highly recommended due to their high nutritional value compared to the introduced varieties and are also important for food security.

5.0 HARE LETTUCE

Kiswahili: Mchunga
English: Hare lettuce
Scientific name: *Sonchus Luxurians*

To find out more, see summary on page 44

Local names:

Chagga: Mchunga
Luguru: Nsunga, Sunga
Pare: Mshunga – mboga
Sambaa: Kware, mshunga-mboga, Pwake
Maasai: Lekule

Where it grows

A common weed found in agricultural fields, especially abundant during the rainy season, which is able to grow in a wide variety of soils, from rich humus to sandy ground. It grows in east, south and western Africa: in pan tropical, highlands and Sub-Sahara.

Its uses

A well-known indigenous vegetable that is eaten widely across Tanzania and can be found in the markets in plentiful supply during the rainy season. It is particularly popular in the eastern costal areas, especially Tanga, and despite its high price the demand for it is not yet been met.

Nutritional and medicinal uses:

Many tribes who have used this vegetable for a long time have reported its usefulness in diseases and ailments such as diabetes, hernia, measles, malaria, stomach pain, blood pressure or body temperature problems, boils and other skin afflictions. It has been reported to be useful in helping with common health complaints of HIV/AIDS patients such as in alleviating stomach pains and sores on the throat, mouth and body.

Hare lettuce with coconut

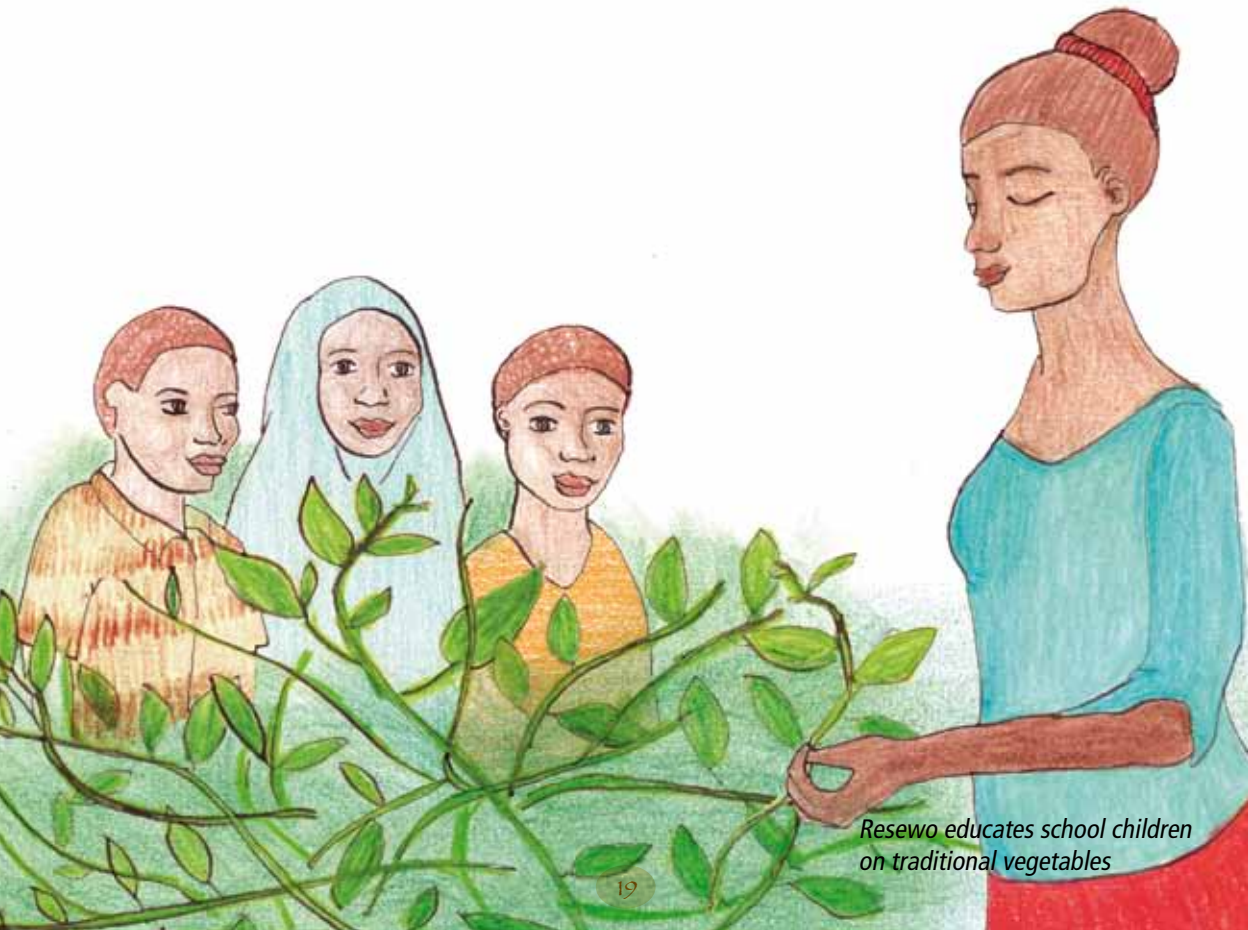
INGREDIENTS

4 bunches of hare lettuce
1 cup of coconut milk
2 tablespoons cooking oil
2 small carrots
1 teaspoon crushed garlic
2 small tomatoes

METHOD:

- Wash hare lettuce thoroughly.
- Peel, wash, and chop onions and carrots; peel and crush garlic and wash and chop tomatoes.
- Prepare coconut milk and heat in a pan.
- Heat oil in another saucepan and fry onions until soft.
- Add garlic and salt, stir, then add the tomatoes followed by the carrots and finally the hare lettuce.
- Stir the warm coconut milk into the mixture and continue cooking until all vegetables are tender.

This dish can be served with stiff porridge, rice or boiled cassava.



Resewo educates school children on traditional vegetables

6.0 SWEET POTATOS LEAVES

Kiswahili: Matembele
English: Sweet potato leaves
Scientific name: *Ipomea batatas*

To find out more, see summary on page 45

Local names:

Chagga: (Kimachame) Mare a fisoya
Zigua: Lunkutu
Bondei: Unkutu
Sambaa: Unkutu
Maasai: Likisoya

Where it grows:

Sweet potatoes grow across all of Africa, except for in the far north, and the tubers are readily available in the marketplace. They require a good water source and grow wild as well as being cultivated on farms. Many families also grow sweet potato for its edible leaves, which provide a supplementary income to the tubers.

Its uses

While sweet potato tubers are commonly eaten all over Tanzania, the use of the leaves in the kitchen is less known. It is a common green vegetable for poor rural people and is a staple food for most tribes in Tanzania, which also has medicinal properties and is fed to lactating cows and goats.

Nutritional and medicinal values

Sweet potato leaves are rich in iron and uses are good source of Vitamin A. Like other green leafy vegetables that contain a high amount of iron, eating sweet potato leaves can help red blood cell count. They have been used to help increase appetite, and when cooked (such as in the sautéed sweet potato leaves dish) are easy to swallow and so are particularly useful for HIV/AIDS patients who may have mouth and throat sores.

Sautéed sweet potato leaves

INGREDIENTS:

4 bunches of sweet potato leaves
2 medium tomatoes
1 onion
1 large carrot
1 teaspoon crushed garlic
3 tablespoons cooking oil
1 teaspoon salt

METHOD:

• Wash sweet potato leaves thoroughly. Trim off any unwanted parts and chop.
• Wash and chop the peeled onion and carrots; wash and chop tomatoes.
• Heat oil in a saucepan, add onion and fry until soft.
• Add tomatoes stir, add carrots and mix well, add garlic and salt, stir.
• Add sweet potato leaves, stir until cooked through.

This vegetable dish can be served with stiff porridge or any starch based dish.

Sweet potato leaves with fame flower

INGREDIENTS

3 bunches of sweet potato leaves
3 bunches of fame flower leaves
2 onions
2 tomatoes
1 teaspoon salt
3 tablespoons cooking oil

METHOD:

• Wash the sweet potato and fame flower leaves thoroughly and trim unwanted parts.
• Peel, wash and chop onions.
• Heat oil in saucepan, add onions and fry until soft.
• Wash and chop tomatoes, add to onions and continue to fry. Add salt.
• Add leaves to the mixture and stir.
• Cover to prevent steam from escaping allowing food to cook faster, add a little water if needed.
• Cook until vegetables are tender.

This vegetable dish can be served with stiff porridge, rice, potatoes, yams, boiled cassava or any starchy food.

Sweet potato leaves with sardines

INGREDIENTS

3 bunches of sweet potato leaves
2 large handfuls of sardines
2 tomatoes
3 onions
2 tablespoons cooking oil
1 teaspoon salt
6 garlic cloves

METHOD:

• Wash sweet potato leaves thoroughly, drain and trim unwanted parts.
• Peel, wash and chop onions; wash and chop tomatoes.
• Heat oil in a saucepan and fry onions until soft; add tomatoes and salt, leave to cook.
• Clean sardines and remove heads before washing thoroughly in hot water.
• Add sardines to the onion and tomato mixture, stir and cover.
• Add sweet potato leaves to the pan, and keep stirring until they are tender but not too soft.

This dish can be served with rice, stiff porridge, boiled cassava, sweet potatoes, yams, boiled crushed maize or cooked green bananas.

7.0 BLACK NIGHTSHADE

Kiswahili: Mnavu
English: Black nightshade
Scientific name: *Solanum villosum miller*

To find out more, see summary on page 46

Local names:

Chagga: (Kimachame) mnafu
Kizigua: Mnavu
Kimasai: Nyafu

Where it grows

Commonly found growing as a weed in agricultural fields in the tropics, this evergreen, short-lived shrub only grows during the rainy season. It is well established in the highlands of Africa where the rainfall is more than 500 mm.

Its uses

Widely used as a vegetable by rural people in Tanzania and East Africa. The plant can be dried to preserve it for non-fresh applications, including medicinal uses.

Nutritional and medicinal uses

Species of African nightshade have been shown to have high values of iron and beta-carotene. Farmers explain that the vegetable contributes to good eyesight but only those grown without industrial fertilizers are effective as medicinal plants. Nightshade has also been traditionally used to combat anemia, high blood pressure, diabetes and peptic ulcers.

Black nightshade with groundnut milk

INGREDIENTS

2 bunches of black nightshade leaves
2 tomatoes
1 onion
1 medium carrot
2 tablespoons of crushed groundnuts
2 tablespoons cooking oil
½ teaspoon salt

METHOD:

• Wash black nightshade leaves thoroughly and trim unwanted parts.
• Peel, wash and chop onions and carrots; wash and chop tomatoes.
• Prepare groundnut milk.
• Heat oil in a saucepan and fry onions until soft. Add tomatoes and salt, stir until cooked.
• Add the black nightshade leaves, keep stirring until almost cooked.
• Stir in groundnut milk and continue cooking until vegetables have finished cooking.

This vegetable dish can be served with stiff porridge, rice and other starchy foods.

8.0 WILD MLENDA

Kiswahili: Mlenda
English: Wild mlenda
Scientific Name: *Corchonus tritocularies*

Local names:

Kingoni: Hindawatu, mlenda ufuta

Where it grows

Mlenda grows spontaneously in almost all the regions across Tanzania and grows particularly well in tropical forests.

Its uses

Mlenda is a popular vegetable collected from the wild for home consumption and for sale at local markets. It is only rarely cultivated on a small scale.
The plants are grazed by animals, including cattle, and in some countries the stem fibers are used for rope making.

Nutritional and medicinal uses

The leaves are rich sources of potassium, iron, copper, manganese and zinc and are an important high-energy source for both humans and animals.

Wild mlenda with cassava leaves

INGREDIENTS

3 bunches wild mlenda
1 teaspoon salt
2 tomatoes
2 onions
1 bunch cassava leaves
1 cup groundnuts

METHOD:

- Wash mlenda leaves thoroughly.
- Boil the mlenda and cassava leaves until tender.
- Pound the boiled leaves together.
- Prepare the groundnut milk.
- Boil 2 cups of water in a pan and add the pounded leaves and stir.
- Cook until soft.
- Add onions, tomatoes, groundnut milk and salt to the mixture; continue to stir until well cooked.

This vegetable dish can be served with stiff porridge, rice, potatoes, boiled cassava or other starchy foods.

9.0 GREEN PIGEON PEA

Kiswahili: Mbaazi
English: Pigeon pea
Scientific name: *Cajanus cajan*

To find out more, see summary on page 46

Local names:

Kingoni: Kunde miti, mbangi
Kisambaa: Mbaazi
Kizigua: Malazi

Where it grows

Green pigeon pea grows as a weed in agricultural fields in the tropics, in all types of soils aside from water logged or saline soils. It is well established in the highlands of Africa with rainfall of more than 500 mm.

It uses:

Pigeon peas are eaten as a fresh green pea, picked when the pod is green, or allowed to mature into a brown pod from which dry beans are harvested and stored. Foliage is used as fodder, mulch and green manure; roots are used for their medicinal properties.

Nutritional and medicinal uses:

Pigeon pea is rich in potassium, phosphorus, magnesium and calcium and has a good amount of iron, vitamin A and niacin. Pigeon peas are traditionally used as a cure for cough, gas troubles, acidity, stomach pain and piles.

Young green pigeon peas dish

INGREDIENTS

3 bunches green pigeon peas
2 onions
1 large tomato
2 tablespoons cooking oil
2 small carrots
1 cup coconut milk

METHOD:

• Heat a saucepan of water and in the meantime shell the pigeon peas.
• Wash peas thoroughly and add to water once hot, cooking until tender. Drain peas.
• Peel, wash and chop onions and carrots.
• Heat oil and fry onions until soft. Add tomatoes and peas, leave to cook.
• Add enough coconut milk to cover the mixture, stirring continuously to prevent the liquid from curdling.
• Keep stirring until the mixture is cooked.

This dish can be served with stiff porridge, rice, boiled crushed maize, potatoes, yams or pancakes.

Traditional Tanzanian house

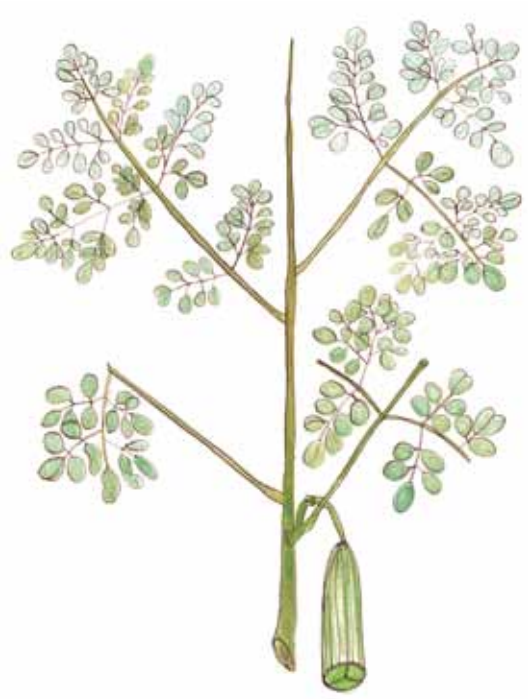
10. MORINGA

Kiswahili: Mlonge, Mzunze
English: Moringa or Radish Tree
Scientific name: *Moringa oleifera*

To find out more, see summary on page 48

Local names:

Many people call this plant by its scientific name "Moringa".



Where it grows

Moringa grows in all tropical and sub-tropical countries and in plenty along the shores of the Indian Ocean. Moringa originally comes from the sub-Himalaya region of North West India, but now it is grown in many countries. In Tanzania moringa grows well but its use is limited because many people have a poor knowledge of its uses.

Its uses

Moringa grows in all of Africa's tropical and sub-tropical countries, in particular along the shores of the Indian Ocean, and prefers low altitudes of 0-500m. Moringa originally comes from the sub-Himalaya region of northwest India.

Its uses

Its fresh and dry leaves, young fruits, roots and flowers can all be used in cooking and medicine. In addition, the leaves are used as an animal feed, the flowers' pollen attracts bees for honey production, it is used in the production of soap and other cosmetic products and fresh moringa leaves are used to make a tea.

Nutritional and medicinal uses:

Moringa leaves and flowers are very nutritious, with high amounts of Vitamin A (over three times that of carrots), Vitamin C (seven times that of oranges), calcium (approximately 140 times that of cow's milk) and potassium. It has been used to help in the management of complications of HIV and AIDS.

Preserving moringa leaves

Moringa leaves are dried and ground to make a flour, which is added to dishes such as mashed potatoes and maize or millet porridge to increase their nutritional value.

Moringa leaves with beans

INGREDIENTS

2 cups moringa leaves
1 cup dry beans
1 cup of diced beef, fish or chicken
1 large tomato
3-4 cloves garlic
1 large onion
½ teaspoon salt
2 tablespoons cooking oil
½ cup coconut milk

METHOD

• Boil beans and the meat or fish of your choice until cooked.
• Wash moringa leaves thoroughly, trim and chop.
• Peel, wash and chop onions and fry in oil until soft.
• Peel, wash and crush garlic and add to onions.
• Wash and chop tomatoes, add to the mixture and continue to fry.
• Add moringa leaves to the mixture, stir and continue to fry.
• Add salt and cook until all vegetables are cooked through.

This vegetable dish can be served with stiff porridge, rice and other starchy foods.

Moringa with sweet potato leaves

INGREDIENTS

2 cups of moringa leaves
2 bunches sweet potato leaves
3 tablespoons cooking oil
1 teaspoon crushed garlic
1 onion
1 tomato
1 small carrot
½ cup coconut milk
½ teaspoon salt

METHOD

• Wash moringa and sweet potato leaves thoroughly and trim.
• Prepare coconut milk and heat gently in a separate pot.
• Peel onion, garlic and carrots and wash together with tomatoes.
• Chop onion, tomato and carrot, and crush garlic.
• Heat oil in saucepan and fry onions until soft. Add salt and garlic and stir.
• Add carrot and tomato, stir until mixture is soft. Add moringa and sweet potato leaves and stir until cooked.
•Add warm coconut milk and stir until it is completely absorbed.

This dish can be served with stiff porridge, boiled cassava, rice or other starchy foods.

The Slow Food Foundation
for Biodiversity promotes
a sustainable agriculture
that respects the environment,
traditions and cultural identities.

11. MALABAR SPINACH

Kiswahili:	Ndelema
English:	Malabar spinach
Scientific name:	*Basella alba*

To find out more, see summary on page 56

Local names:

Chagga: Inyiri
Luguru: Delega
Sambaa: Ndeemo

Where it grows

Malabar spinach grows in almost all of Tanzania's regions, especially in Kilimanjaro, Arusha, Tanga, Mbeya, Iringa, Ruvuma, Morogoro and Dar es Salaam. It is a climbing plant, which grows spontaneously in forests, bushland and farmlands provided there is a rich enough soil and available water and grows best in a cool to moderate climate. The plant is now also cultivated and it is sold in the marketplace, although it is not found as readily as spinach, black nightshade or okra.

Its uses

Malabar spinach is used in a similar way to any green leafy vegetable and its root is also edible.

Nutritional and medicinal uses:

Malabar spinach is valued for its iron content and for this reason has been traditionally recommended for pregnant women and children. It is also a good source of Vitamin A and has been used to maintain health of the skin and eyes. Malabar spinach is recommended for HIV/AIDS sufferers, as it eases constipation and is soft and easy to swallow, particularly for those with mouth and throat sores.

Malabar spinach omelet

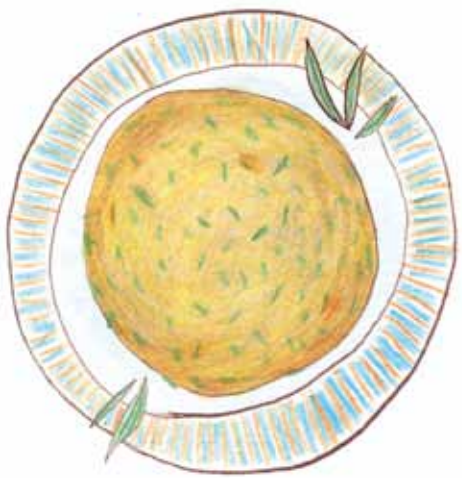
INGREDIENTS

4 large malabar spinach leaves
1 tablespoon milk
2-3 large eggs
2 tablespoons cooking oil
¼ teaspoon salt

METHOD

• Wash malabar leaves thoroughly, drain and trim unwanted parts.
• Blanch leaves for one minute in enough boiling water to cover them completely.
• Remove leaves from water and drain and cut leaves into small pieces.
• Break eggs into a bowl, beat and add milk.
• Mix malabar spinach with egg mixture, add a pinch of salt.
• Heat oil in a saucepan or frying pan and cook mixture over a low heat while stirring frequently.
• Cook the mixture through, ensuring the omelet remains soft.

Serve this dish with stiff porridge, potatoes, boiled crushed maize, cassava, potatoes, chips, bread or pancake.



12. KIMANSHIGHA

Kimanshigha is an indigenous vegetable which does not have a Kiswahili, English or scientific name yet.

Local names:

Chagga: Kimanshigha
Zigua: Nkangajaka

Where it grows

Kimanshigha grows wild in areas of rich soil and shade such as forests and along rivers, and is also cultivated on farms and in home gardens. It is a climbing plant and grows especially well in Kilimanjaro, Kagera, Arusha, Morogoro, Iringa and Ruvuma regions of Tanzania.

Its uses

While kimanshigha leaves are not well known as an edible plant by the current generation of Tanzanians, they are the basis of the traditional dish Nyanyi-Kitalolo in which they are mixed with beans, green bananas or maize and milk. The Chagga and Meru communities report that the leaves increase milk production of dairy cattle.

Nutritional and medicinal uses:

Kimanshigha has traditionally been used to treat stomach pains, particularly in young children. In the past mothers used to chew the leaves and give the mixture to their babies, however nowadays the leaves are pounded or blended to make a juice. Adults chew four clean leaves three times a day until the stomach is cured.

Nyanyi-Kitalolo

INGREDIENTS

4 bunches young kimanshigha leaves
1 cup beans
4-5 soft green bananas
1 liter fresh or sour milk

METHOD

• Boil dry beans in water until soft. Do not drain.
• Peel bananas, cut into pieces and wash thoroughly to remove the sticky sap.
• Add the bananas to the cooked beans. Add some water and return to heat.
• Wash the kimanshigha and add to the bean and banana mixture.
• Continue to cook without letting the mixture dry out.
• Mash bananas until soft.
• Add the fresh or sour milk - if sour milk is used, set aside a portion of the dish before adding the milk for those who prefer fresh milk.

This dish has a very high nutritious value and is very easy to swallow, making it suitable for children, elderly people, women who have just given birth, as and HIV/AIDS sufferers.

Sauteed Kimanshigha

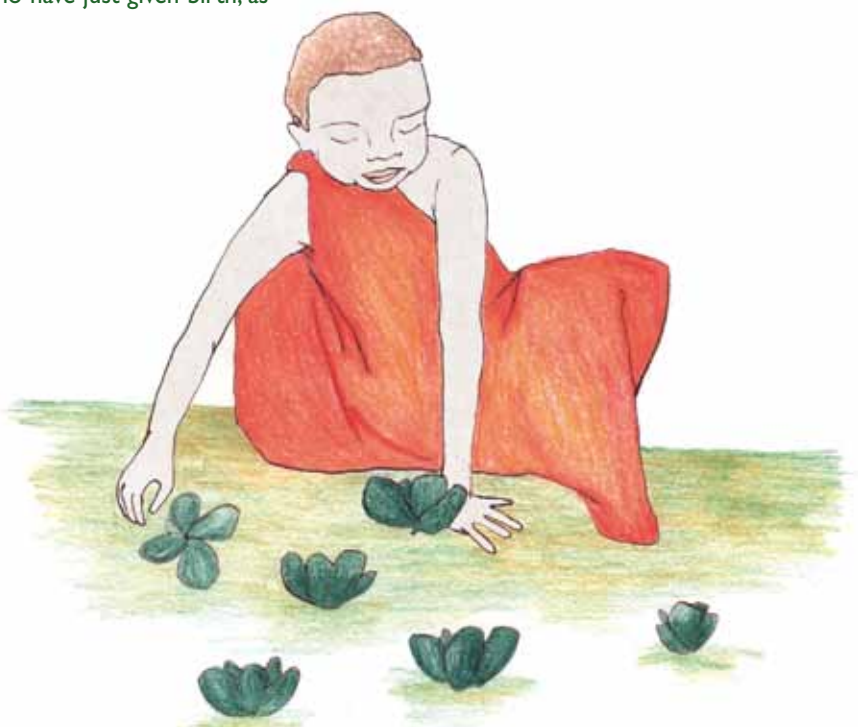
INGREDIENTS

4 bunches kimanshigha leaves
2 medium onions
1 large carrot
3 tablespoons cooking oil

MEDHOD:

• Wash leaves thoroughly and trim off any bad parts.
• Peel, wash and dice onions and carrot.
• Heat oil in a saucepan and fry onions until soft.
• Add salt and the kimanshigha, stirring continuously.
• Add carrots and continue to stir the mixture on the heat until all ingredients are soft and cooked through.

This dish can be served with stiff porridge, rice or yams.



Picking vegetables

13. SOFT YAMS

Where it grow:

Yams are a staple food for countries across West Africa and many countries in Asia, South America and the Caribbean also rely heavily on yam. While yams can play a very important role in food security, unfortunately they are becoming less common in Tanzania and more difficult to find in the market.

Its uses

In Tanzania, soft yams are usually served as an accompaniment to indigenous vegetable dishes such as fame flower, malabar spinach or any other green leafy vegetables.

Nutritional and medicinal uses

Yams are high in vitamin C, dietary fiber, vitamin B6, potassium, and manganese and are low in saturated fat and sodium. By promoting a good potassium-sodium balance in the human body, this food can help protect against osteoporosis and heart disease. Yam generally has a lower glycemic index than potato, which means that they will provide a more sustained form of energy, and give better protection against obesity and diabetes.

Soft yams with groundnut

INGREDIENTS

1 small or ½ large yam
4 bunches malabar spinach or fame flower
3 tablespoons crushed groundnut
1 large or 2 medium onions
6 cloves garlic
3 medium tomatoes
4 tablespoons cooking oil
1 chili pepper (optional)
½ teaspoon salt

METHOD:

1. Wash yams thoroughly and peel. Wash again and cut into pieces the size of an egg
2. Place yams in a saucepan of water that doesn't quite cover them and put on the heat.
3. Wash and chop onions, tomatoes and chili (optional) and add to the yams with salt; cover and leave to boil.
4. Add oil or groundnut milk, continue to cook until yams are soft.
5. Add the washed vegetable leaves, cover and leave to cook until ready.

Soft yams with beans

INGREDIENTS

1 medium soft yam
1 cup dry beans
2 medium tomatoes
3 tablespoons cooking oil
2 medium onions
1 large carrot
½ teaspoon salt

METHOD:

1. Cook the beans in a pot of boiling water, until they are tender but not completely dry.
2. Wash yams thoroughly and peel. Wash again and cut into pieces.
3. Boil yams in a saucepan of water that doesn't quite cover them until soft.
4. Wash and chop tomatoes, onions and carrot.
5. Heat oil in a saucepan and fry onions until soft. Add carrots and stir. Add tomatoes leave to simmer until they are soft.
6. Stir well until you have a thick sauce of carrot, onion and tomatoes.
7. Mix the yams and beans together and pour the vegetable sauce over this mixture.
8. Add a small amount of hot water to the saucepan and scrape up the remaining sauce on the pan. Add to the yam and bean mixture.
9. Cover and cook the mixture on a low heat until ready to serve.

Mashed soft yams

INGREDIENTS

2 medium soft yams
3 tablespoons cooking oil
2 medium onions
2 cups fresh milk
salt

METHOD:

• Wash yams thoroughly and peel. Wash again and cut into large pieces.
• Boil yams in a saucepan of water that doesn't quite cover them.
• Peel, wash and chop onions. Add to the yams and cook until tender.
• Add oil and mash yams until soft and smooth.
• Heat the milk and gradually add it to the yam mash until the mixture is thick and smooth.
• Add salt to taste.

Fried yams with vegetable sauce

INGREDIENTS

2 medium soft yams
3 eggs
4 tablespoons wheat flour
4 bunches fame flower, malabar spinach or blackjack
¼ teaspoon salt
½ liter cooking oil
2 tablespoons margarine
1 cup chicken, meat or fish stock
2 medium tomatoes
1 carrot
1 onion
1 small eggplant

METHOD

• Wash yams thoroughly and peel. Wash again and cut into neat pieces.
• Boil the yams in water, and in the meantime mix the flour, egg and water into a thick batter.
• When cooked, roll yams in the batter.
• Heat most of cooking oil in a saucepan.
• When hot, deep fry yam pieces in the oil until golden brown and drain.
• To prepare the vegetable sauce, peel and chop the onion into small pieces and fry in the remaining oil until soft.
• Wash and chop the carrot, tomato and eggplant. Add the carrots, and when tender add the tomato and fry until a thick consistency is obtained.
• Add the eggplant and fry at a reduced heat until cooked.
• Add washed leaves, mix well and add salt and stock.
• Cover cook for a short while, stir, and cover until the sauce is ready.
• Serve with the fried yams.

Soft yams with meat and vegetable sauce

INGREDIENTS

2 medium soft yams
250 grams meat (any type)
1 large onion
6 cloves garlic
1 large tomato
½ teaspoon salt
1 large bitter tomato (nyanya chungu)
3 bunches green leafy vegetables
3 tablespoons cooking oil

METHOD

• Wash, trim off the fat and chop the meat into cubes; season with salt and garlic.
• Cook meat on medium heat until cooked through.
• Wash yams thoroughly and peel. Wash again and cut into small pieces.
• Boil yams until tender but not too soft.
• Add cooked meat to the boiled yams, cover and continue to cook.
• Wash and chop all of the vegetables into small pieces and add to the yams and meat.
• Stir on a low heat until the vegetables are cooked through.

14. INDIGENOUS LEAFY VEGETABLE TEAS

Blackjack tea

INGREDIENTS

1 handful of mature blackjack leaves
5 cups water
sugar (optional)

METHOD

• Wash leaves thoroughly, trim and discard any damaged parts.
• Chop leaves into small pieces.
• Boil water in a saucepan, add the prepared leaves, and simmer until a brown color is obtained.
• Strain the tea and pour into a thermos flask or teapot.
• Add sugar to taste.

Moringa tea

INGREDIENTS

1 hand full of moringa leaves
5 cups water
sugar (optional).

METHOD

• Wash leaves thoroughly, trim and discard any damaged parts.
• Boil water in a saucepan, add the prepared leaves, and simmer until required light green tea color is obtained.
• Strain the tea into a thermos flask or teapot.
• Add sugar to taste.

Lemongrass tea

INGREDIENTS

1 hand full of lemongrass
5 cups water
sugar (optional)

METHOD

• Wash lemongrass thoroughly and crumble the leaves.
• Boil water in a saucepan, add the lemongrass and simmer until a light green/yellowish tea color is obtained.
• Strain the tea into a thermos flask or teapot.
• Add sugar to taste.

Blackjack and lemongrass tea

INGREDIENTS

½ hand full of blackjack leaves
½ hand full of lemongrass
5 cups water
sugar (optional)

METHOD

• Wash blackjack leaves and lemongrass thoroughly.
• Crush lemongrass.
• Boil water in a saucepan, add blackjack leaves and lemongrass, and simmer until the desired strengthen of tea is obtained.
• Strain tea and put in a thermos flask or teapot.
• Add sugar to taste.

Moringa and lemongrass tea

INGREDIENTS

½ hand full of moringa leaves
½ hand full of lemongrass
5 cups water
sugar (optional)

METHOD

• Wash moringa leaves and lemongrass thoroughly.
• Crush lemongrass.
• Boil lemongrass in the water.
• Add moringa leaves and simmer until the desired greenish tea color is obtained.
• Strain tea into a thermos flask or teapot.
• Add sugar to taste.

15. COOKING AND NUTRIONAL TIPS

PREPARING VEGETABLES

• Use clean, safe water for both washing and cooking vegetables.
• Trim and discard all damaged or inedible parts of the vegetable.
• Use a sharp knife free from rust.
• If removing the skin, vegetables should be peeled thinly to preserve nutrients.
• If parboiling vegetables, chop them afterwards to retain nutrients.
• Vegetables naturally contain a substantial amount of sodium, so only add minimal salt during cooking.
• Use the water used to cook vegetables as a stock for soups and sauces: it will have a good flavor and also contain nutrients.

PREPARING TEAS

• Fresh milk may be added to increase nutrients.
• Ground ginger and/or cardamom can be added to give the tea a spicy flavor.
• Add lemon juice to give the tea a citrus tang.

GENERAL NUTRITION

• Include fresh fruit as well as protein rich foods such as meat, fish or legumes and complex carbohydrates in your day for a healthy and balanced diet.
• Try to source as fresh produce as possible. The longer that fruit and vegetables are kept after picking the more their nutrient content will decrease.
• Cook and handle vegetables in ways that will preserve their nutrients:
• Steaming and stir-frying are the best methods to preserve nutrients.
• When boiling in water, do not cook longer than necessary.
• Use vegetables immediately after they are cut. Exposure of cut vegetables to the air will diminish nutri-

ents over time.
• To do not leave vegetables in the sun. When preserving vegetables by drying, do this in the shade.
NOTE:
RESEWO is aware of the importance of indigenous vegetables in a daily diet for good health and nutrition and the particular need to ensure the ill can access a nutritious diet. However, RESEWO stresses that these indigenous vegetables do not cure HIV/AIDS, but rather high quality nutrition is beneficial for the health of all people.

16. PREPARING COCONUT AND GROUNDNUT MILK

Coconut milk

To make approximately 1 cup of thick coconut milk, use 1 medium coconut and 1/2 cup of warm water.

METHOD:

• Wash hands thoroughly.
• Break coconut in half and remove the white flesh from the shell.
• Grate the white nut using a hand grater, called a mbuzi locally.
•Mix the grated coconut with ½ cup of warm water in a bowl.
• Pour the mixture through a sieve into another bowl, squeeze out all the milk.
• Repeat the procedure to extract more milk from the coconut.
•The coconut milk is ready for use.

Groundnut (peanut) milk

Use ½ cup of groundnuts to 1 cup of warm water.

METHOD:

• Roast the groundnuts until they are light brown.
• Roasting makes it easier to remove husks and improves the flavor.
• When cool remove husks by rubbing them between your hands.
• Grind the roasted groundnuts in a mortar to obtain a fine powder.
• Mix the crushed nuts with the warm water until a creamy consistency is obtained.

17. RECIPES FOR SIDE DISHES

Boiled green bananas

INGREDIENTS

4 soft green bananas
½ liter water
¼ tsp salt
½ lemon

METHOD

• Half fill a large bowl with cold water and add the juice from ½ lemon.
• Peel the bananas carefully to remove all of the green skin.
• Cut the bananas into half lengthwise then across into 2 or 3 sections.
• As you cut the bananas, drop the pieces into the basin of water and lemon juice (to prevent bananas from turning black).
• Rinse the bananas and put them into boiling salted water.
• Boil until soft. Remove from heat and serve.

Boiled pounded maize

INGREDIENTS

120g pounded maize
2 liters water
¼ tsp salt

METHOD

- Soak pounded maize overnight
- Boil pounded maize until soft, adding more hot water each time it starts to dry out.
- When soft add salt and stir well.
- Remove from heat and serve.

Boiled cassava

INGREDIENTS

2 medium cassava
½ liter water
1 pinch salt

METHOD

- Wash cassava to remove all soil.
- Peel cassava and cut into half lengthwise and remove the woody pith.
- Cut into small pieces and wash again.
- Boil the water with a pinch of salt, and add the cassava.
- Boil until soft, remove from heat, drain and serve.

Boiled sweet potatoes

Method and quantities as for boiled cassava, however, sweet potatoes require a shorter time to cook as they are a softer tuber than the cassava.

Stiff porridge

INGREDIENTS

240g maize flour
½ liter water.

METHOD

- Put water on stove to boil.
- Make a paste with a small amount of flour and water and add to the boiling water.
- Stir well using a large wooden spoon or mwiko.
- Add the remaining flour and mix well to a stiff consistency.
- Keep stirring, getting rid of any lumps, until porridge is cooked through.
- Remove from heat and serve hot.

Note: Fresh milk can be used instead of water together with a little margarine.

Boiled yams

INGREDIENTS

2 medium yams
¼ tsp salt
1 liter water

METHOD

- Wash yams thoroughly to remove soil.
- Peel and cut the yams into small pieces.
- Put the yams into boiling salted water and simmer until tender.
- Remove from heat and serve hot.

Botanical Information on Selected Traditional Indigenous Vegetables of Tanzania

Scientific name: *Bidens pilosa*
Common name: Blackjack

Ecology: a wild herb found all over Sub-Saharan, Africa, growing well on high lands with high rainfall.
Uses: edible vegetable, medicine, fodder, herbal tea, spices
Description: weedy herb less than 50cm tall, green stem, yellow flowering inflorescence, with sticky hears seeds, hence its Kiswahili name kishona nguo.
Propagation: seedlings
• Seed information: number of seeds per kilogram > 10,000. Germination is uniform and takes one week, with flowering after one month. No pre-seed treatment before broadcasting.
• Seed storage: can keep viability for one year at room temperature
Management information:
• Soil type: grows on all types of soils except sandy soils.
• Planting specifications: 6X6cm preferred standard specification but mass broadcasting is done following intensive thinning after two weeks.
•Fertilization: application of animal manure or composite and wood ash gives best foliage growth.
• Harvesting: picking by pollarding.
• Pre-harvest: when its taller than 30cm.
• Post-harvest: weeding, manuring and watering just after pollarding.
Other economic importance: Known to many tribes in Africa but with minimal knowledge of its use.

Scientific name: *Talinum Portulacifolium*
Common name: Fame flower

Ecology: highly resistant to drought, long-lived herbaceous shrub grown throughout the tropics and in mild subtropical climates in Africa, Australia and North America.
Uses: edible vegetable, medicine.
Description: herbaceous herb up to 30cm high with clustered growing. Stem suckers develop only when

terminal bud tip is damaged. Contains soft fibrous tissue.

Propagation: vegetative propagation

• Seed information: non-viable seeds.

• Seed storage: not applicable, but vegetative scions can last for several months before planting.

Management information:

• Soil type: all types of tropical soils including waterlogged soils.

• Planting specifications: 30 X 30cm as the plant produces a lot of root suckers which and fill the space.

• Fertilization: can grow in poorly fertilized soils but application of animal manure speeds the vegetative growth.

• Harvesting: pricking the terminal shoots.

• Pre-harvest: watering one week before harvesting gives good shooting of the suckers.

Other economic importance: also used as green manure.

Scientific name: *Gynadropsis gynandra*
Common name: Cat whispers/Spider plant

Ecology: grows as a weed in agricultural fields in the tropics. Well established in the highlands of Africa with rainfall of more than 500 millimeters .

Uses: vegetable for most of the rural people in Tanzania and East Africa.

Description: evergreen shrub, short-lived: grows only during rainy season.

Propagation: seedlings and wildlings

• Seed information: tiny seeds shelled in a pea-like noodles. Seeds per kilogram 600,000 – 900,000.

• Seed storage: viability less than one year.

Management information:

• Soil type: all types of soils except sandy and waterlogged soils

• Planting specifications: 20-30 centimeters

• Fertilization: manure fertilization gives best result and cross fertilization is commonly done by wind and insects.

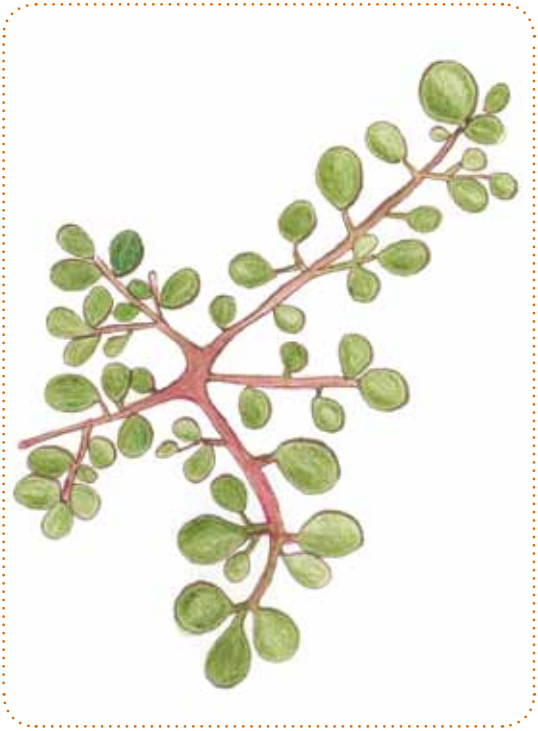
• Harvesting: pricking the young green shoots before flowering.

• Pre-harvest: just before blooming.

• Post harvest: can be dried and preserved for future uses.

Other economic importance: medicinal and stubborn weed in maize fields.

Scientific name: *Portulaca oleracea*
Common name: Purslane



Ecology: highly resistant to drought, long-lived herbaceous shrub grown throughout the tropics and in mild subtropical climates.
Uses: edible vegetable, medicine
Description: herbaceous herb up to 30cm tall, clustered growing. stem suckers develop only when terminal bud tip is damaged. Contains soft fibrous tissue.
Propagation: vegetative propagation
• Seed information: non viable seeds
• Seed storage: not applicable, but the vegetative scions can last for several months before planting.
Management information:
• Soil type: all types of tropical soils including waterlogged soils.
• Planting specifications: 30 X 30cm, as the plant produces a lot of root suckers which fill the space.
• Fertilization: can grow in poorly fertilized soils but application of animal manure speeds the vegetative performance.
• Harvesting: pricking the terminal shoots.
• Pre-harvest: watering one week before harvesting gives good shooting of the suckers.

Other economic importance: also used as green manure.

Scientific name: *Sonchus luxurians*
Common name: Hare Lettuce

Ecology: a common weed in agricultural fields and pan tropical especially in high lands and Sub-Sahara. Largely growing during rainy season.
Uses: vegetable, medicine, fodder and green manure
Description: herbaceous short-lived dark green plant. Flowering in sixty days giving lightly-feathered winged seeds.
Propagation: seeds and stumps
Seed information: heary seeds simply propagated by

wind and rain run-off.
• Seed storage: Short lived, avoid storage.

Management information:

• Soil type: all types of soils except water-logged soils
• Planting specifications: broadcasting followed by spaced thinning.
• Fertilization: grows well in animal manure and compost.
• Harvesting: ready to harvest at its half life meaning 30 days after broadcasting.
• Pre-harvest: watering important in order to promote multiple shoots.
• Post harvest: can be sun-dried and stored for future use.

Other economic importance: well known to cure different diseases both for livestock and humans.

Scientific name: *Ipomea batata*
Common name: Sweet potato

Ecology: creeping plant, evergreen and grows all over tropics especially in wetlands.
Uses: green vegetables, edible roots.
Description: creeping slenderer-like crippler, flowering yellow and pink. It grows as wild plant in highlands of east and central Africa. Well adapted to coastal climates. Is now a staple food to most tribes in Tanzania
Propagation: by cutting

• Seed information: non viable seeds.
• Seed storage: not applicable.

Management information:

• Soil type: land and sandy clay-loam soils.
• Planting specifications: in ridges 2cm x 5cm.
• Fertilization: animal manual preferable.
• Harvesting: picking green leaves every after three days.
• Pre-harvest: watering before and after picking necessary to boost the green foliage.
• Post harvest: can be sun-dried and stored for future use.

Other economic importance: common green vegetable for poor rural people. Also medicinal and good for lactating cows and goats.

Scientific name: *Solanum villosum*
Common name: Black Nightshade

Ecology: grows as a weed in agricultural fields in the tropics. Well established in the highlands of Africa with rainfall of more than 500 mm .
Uses: vegetable for most rural people in Tanzania and East Africa.
Description: evergreen shrub, short-lived: grows only during rainy season.
Propagation: seedlings and wildlings
Seed information: tiny seeds shelled in a peas-like noodles. Seeds per kilogram: 600,000 – 900,000.
Seed storage: viability less than one year.
Management information:
• Soil type: all types of soils except sandy and waterlogged soils.
• Planting specifications: 20-30 centimeters.
• Fertilization: manure fertilization gives best result. Cross fertilization is commonly done by wind and insects.
• Harvesting: pricking the young green shoots before flowering.
• Pre-harvest: just before the blooming
• Post harvest: can be dried and preserved for future uses.
Other economic importance: medicinal and stubborn weed in maize fields.

Scientific name: *Cajanus cajan*
Common name: Pigeon pea

Ecology: the genus is now recognized to have 32 species. It reached West Africa and West Indies early as a food crop. It is hard drought resistant.
Uses: firewood, food (fruits and seeds), fodder (foliage), bee forage, mulch, green manure, nitrogen fixation, soil conservation and soil improvement.
Description: a slender shrub 2-5m, annual or perennial, becoming woody with age.
Propagation: direct sowing

• Seed information: seeds highly susceptible to insect attack. Germination rate very high. Soaking in water for one day before sowing is important
• Seed storage: Stores well if put in dry cool place free from insects.

Management information:

• Soil type: grows in all soils except saline and water-logged.
• Planting specifications: 50cm X 50cm.
• Fertilization: animal manure application gives good yield.
• Harvesting: done through clear felling or picking individual green pods.
• Pre-harvest: not applicable.
• Post harvest: storage in insect free place.

Other economic importance: roots extract are used for stomachache and as an aphrodisiac.

Scientific name: *Moringa Oleifera*
Common name: Moringa or Radish Tree

Ecology: native to western Himalayas and India but now planted all over the tropics. Naturalized in coastal area of East Africa, prefers low altitudes 0-500m.

Uses: food, spices, medicine, forage, soil improvement, live fence, water purification, tannin, oil and windbreak.

Description: a deciduous tree up to 10m, usually smaller, pale feathery foliage with long capsules, grows to 45cm.

Propagation: direct sowing, seedlings, cuttings of more that 1m can be done successfully.

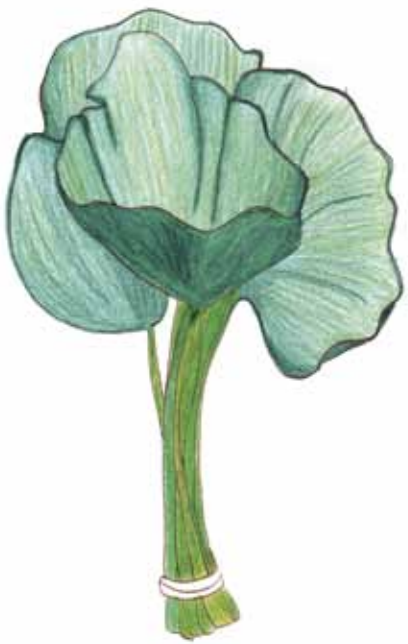
• Seed information: number of seeds per kilogram: 4000-5000. Germination rate 60 – 70% in 60-75 days.
• Seed storage: can be stored up to one year if kept in dry place.

Management information:

• Soil type: grows on well-drained sandy soils with a high water table but is also drought resistant.
• Planting specifications: 5m x 5m.
• Fertilization: not necessary as its taproot develops faster to access nutrients in deep soils.
• Harvesting: picking dry pods.
• Pre-harvest: timing of ripening season is important as seeds are susceptible to insect attack.
• Post harvest: sore in a dry, well-ventilated place.

Other economic importance: the ben oil from seeds keeps its quality and so can lubricate precision machinery, also used for salad oil, soap and cosmetics.

Scientific name: *Basella alba*
Common name: Malabar Spinach



Ecology: grows as weed, in the forest, in agricultural fields in the tropics. It is a wild creeping plants. Well known to ancient of Africa as ever green indigenous vegetables eaten cooked or with out cooking.
Uses: makes nutritious relish to eat with main dish makes tasty roasted banana sandwich, slice and stock. Helps with indigestion. Popular cooked with milk and beans a traditional way.
Description: creeping indigenous vegetable a common weed in the high rainfall zones e.g Kilimanjaro Region in Tanzania.
Propagation: seeds and Vegetatively propagated.
Seed Information: with stripes. The seed coat or cover is porous and seal are round and small.
Seed Storage: seed can be dried in their coat they can be stored when dried.
Storage period 6 months.

Management Information:
· Soil type: grows well in high rainfall, water logged soils
· Planting specification: as climbers, it must be provided with supporting crops e.g. coffee tree or a wall or stand.
· Fertilization: manure application and frequent watering is necessary.
· Harvesting: picking green leaves.
· Pre-harvest: not necessary.
Post harvest: can be dried for future.
Other economic importance :
Used as good fodder for dairy cattle.

Notes

Notes

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