Mainstreaming Biodiversity Conservation and Sustainable Use for Improved Human Nutrition and Well Being: The case of Kenya

Regional Workshop on Inter-linkages between Human Health and Biodiversity- Maputo
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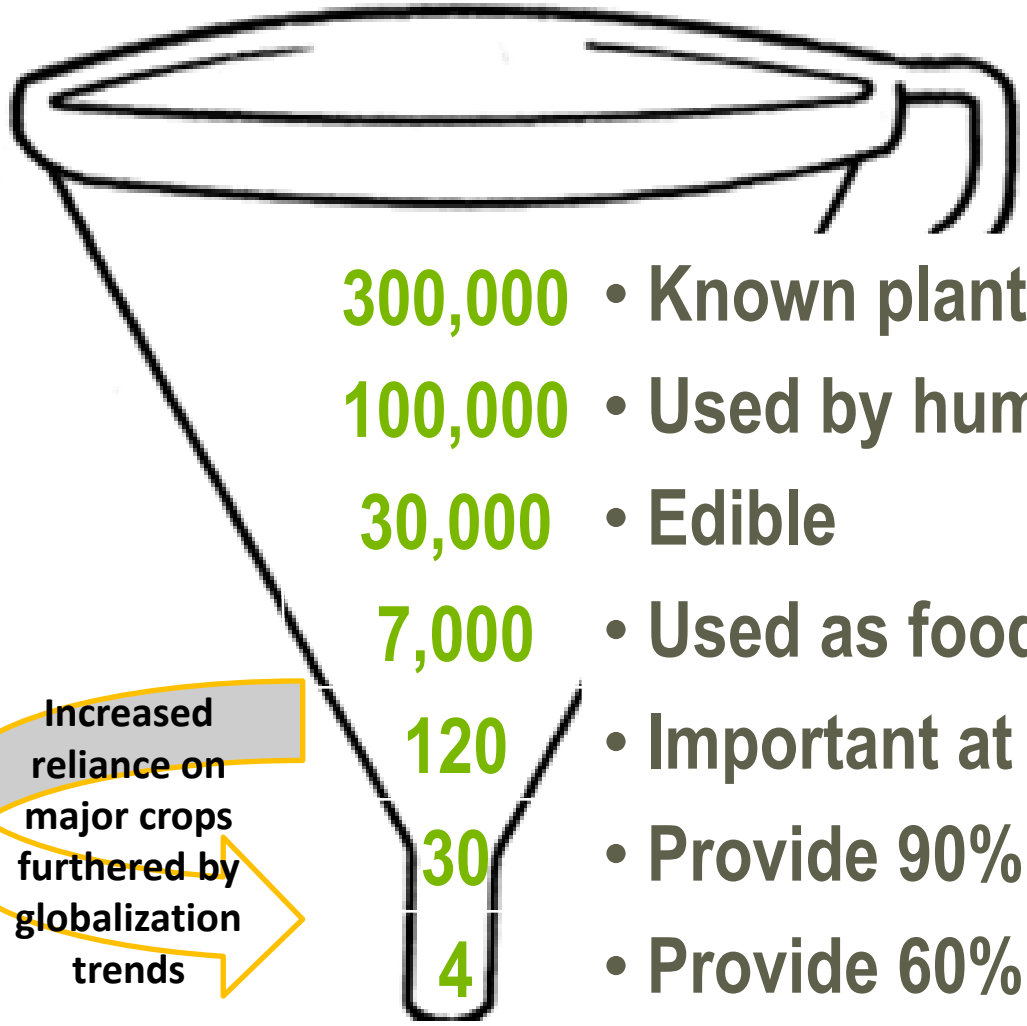
Narrowing of world's food basket



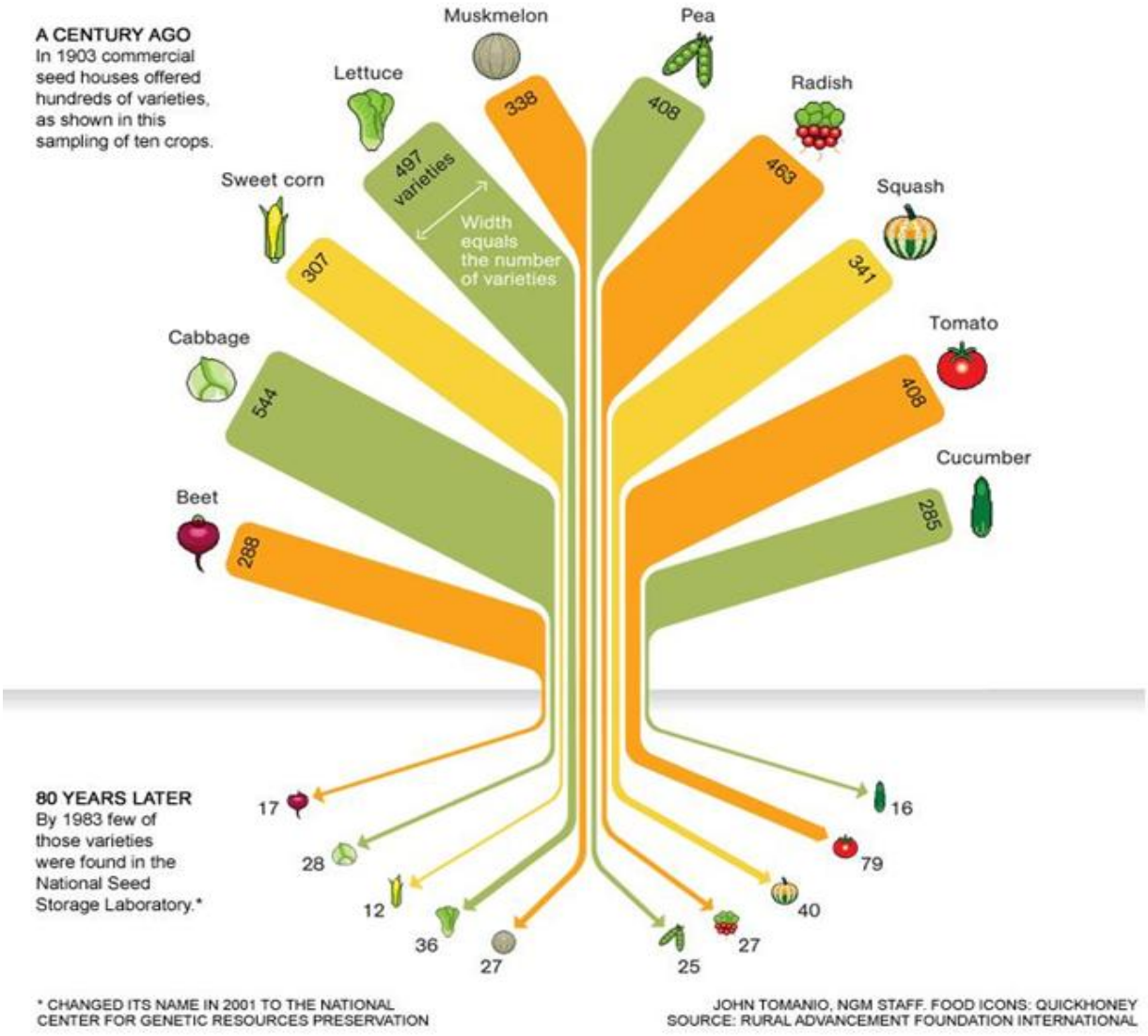
300,000	• Known plant species
100,000	• Used by humankind
30,000	• Edible
7,000	• Used as food at local level
120	• Important at national scale
30	• Provide 90% of plant calories
4	• Provide 60% (rice, wheat, maize, potato)

Increased reliance on major crops furthered by globalization trends

Source E. Frison, Bioversity 2012

A highly concerning global challenge

National Geographic 2011
Study conducted in 1983 by the Rural Advancement Foundation International gave a clue to the scope of the problem. It compared USDA listings of seed varieties sold by commercial US seed houses in **1903** with those in the US National Seed Storage Laboratory in **1983. The survey, which included 66 crops, found that about 93 percent of the varieties had gone extinct.**



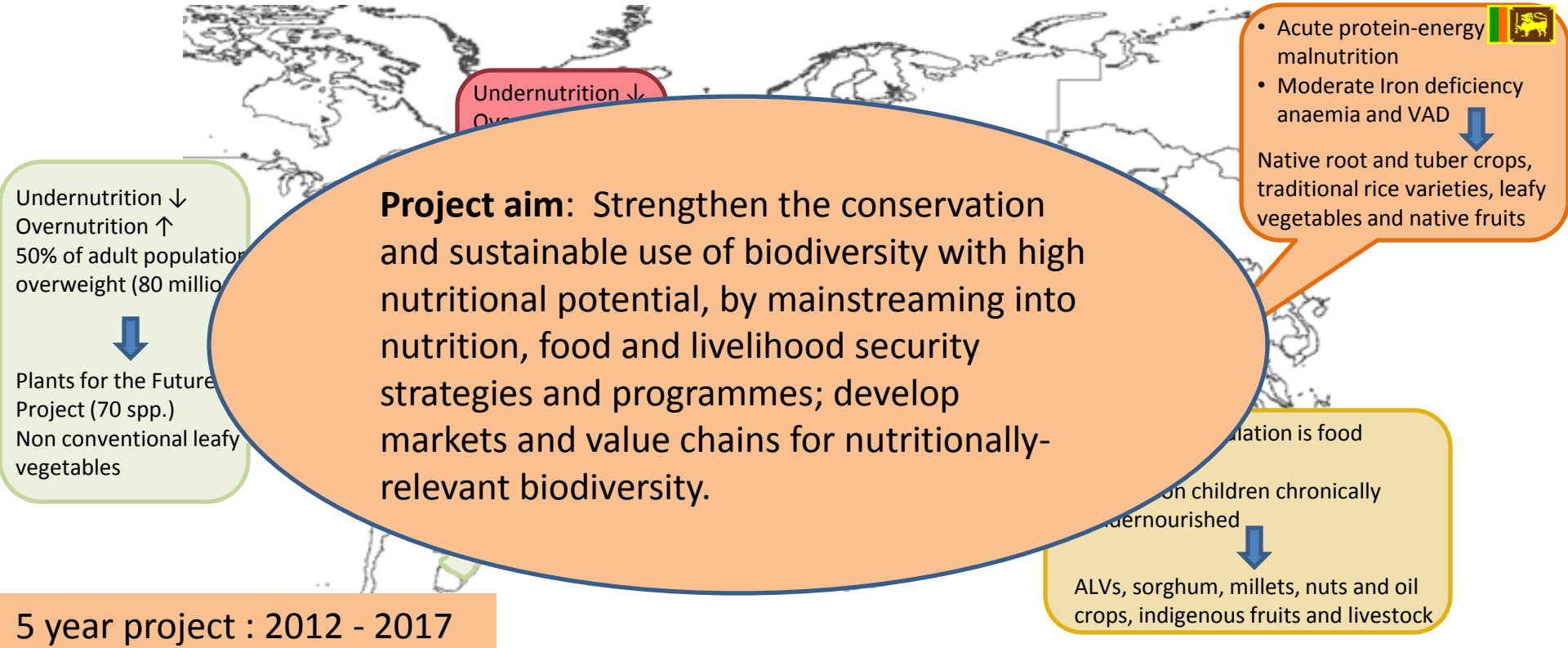
BFN BIODIVERSITY FOR FOOD AND NUTRITION

Source E. Frison, Bioversity 2012

Nutritional benefits
Case of African leafy vegetables

Per 100 gm	Amaranth (leaf)	Cleome	Nightshade	Cabbage
Iron mg	8.9	6.0	1.0	0.7
Calcium mg	410	288	442	47
ß carotene ųg	5716	10452	3660	100

Source E. Frison, Bioversity 2012



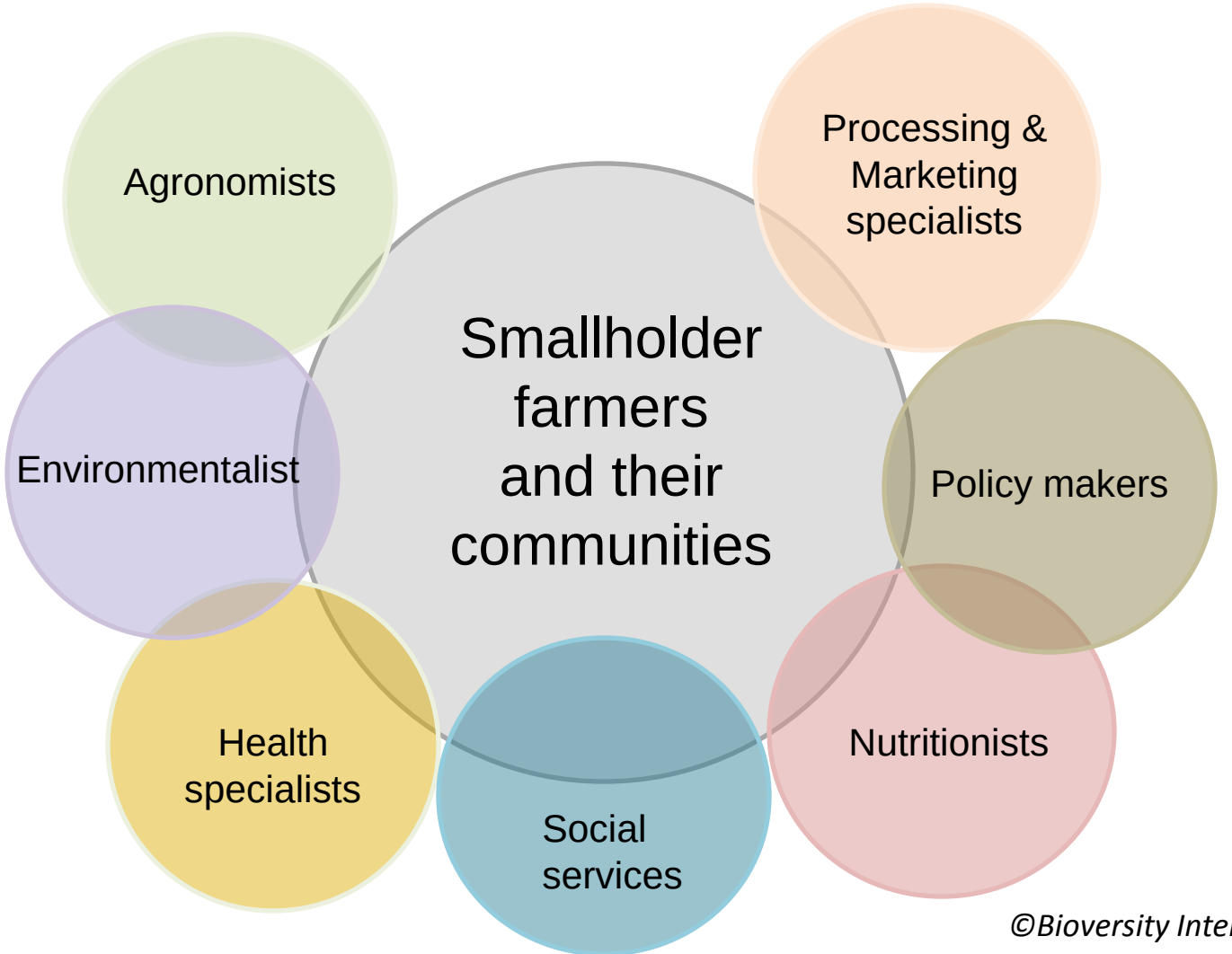
5 year project : 2012 - 2017

PROVIDE EVIDENCE – Demonstrate the nutritional value of local BFN and the role it plays in promoting healthy diets and strengthening livelihoods

INFLUENCE POLICIES - Use the evidence to influence policies and markets that support the conservation and sustainable use of BFN for improved human nutrition and wellbeing

RAISE AWARENESS – Develop tools and best practices for scaling up the use BFN in development programmes, value chains and local community initiatives.

Involvement of a variety of actors



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Project Components Activities and Outputs

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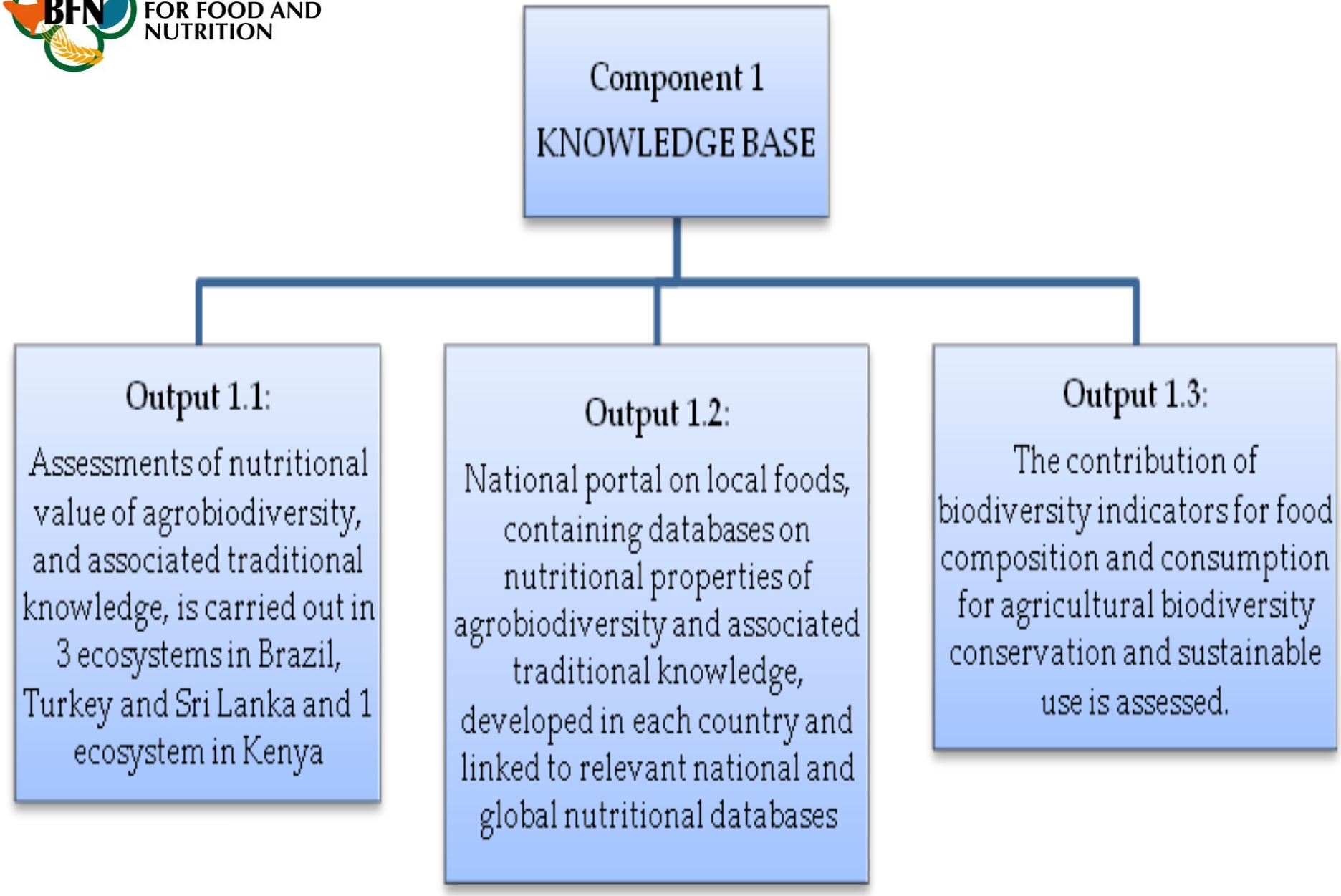

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Component 2

POLICY & REGULATORY FRAMEWORK

Output 2.1:

Cross-sectoral national policy platforms for mainstreaming agricultural biodiversity conservation and sustainable use into nutrition, health and education programmes established

Output 2.2:

National and international policy guidelines and recommendations that promote the mainstreaming of agricultural biodiversity conservation and sustainable use into nutrition, health and education developed

Output 2.3:

New marketing options for biodiversity foods with high nutritional value identified and developed

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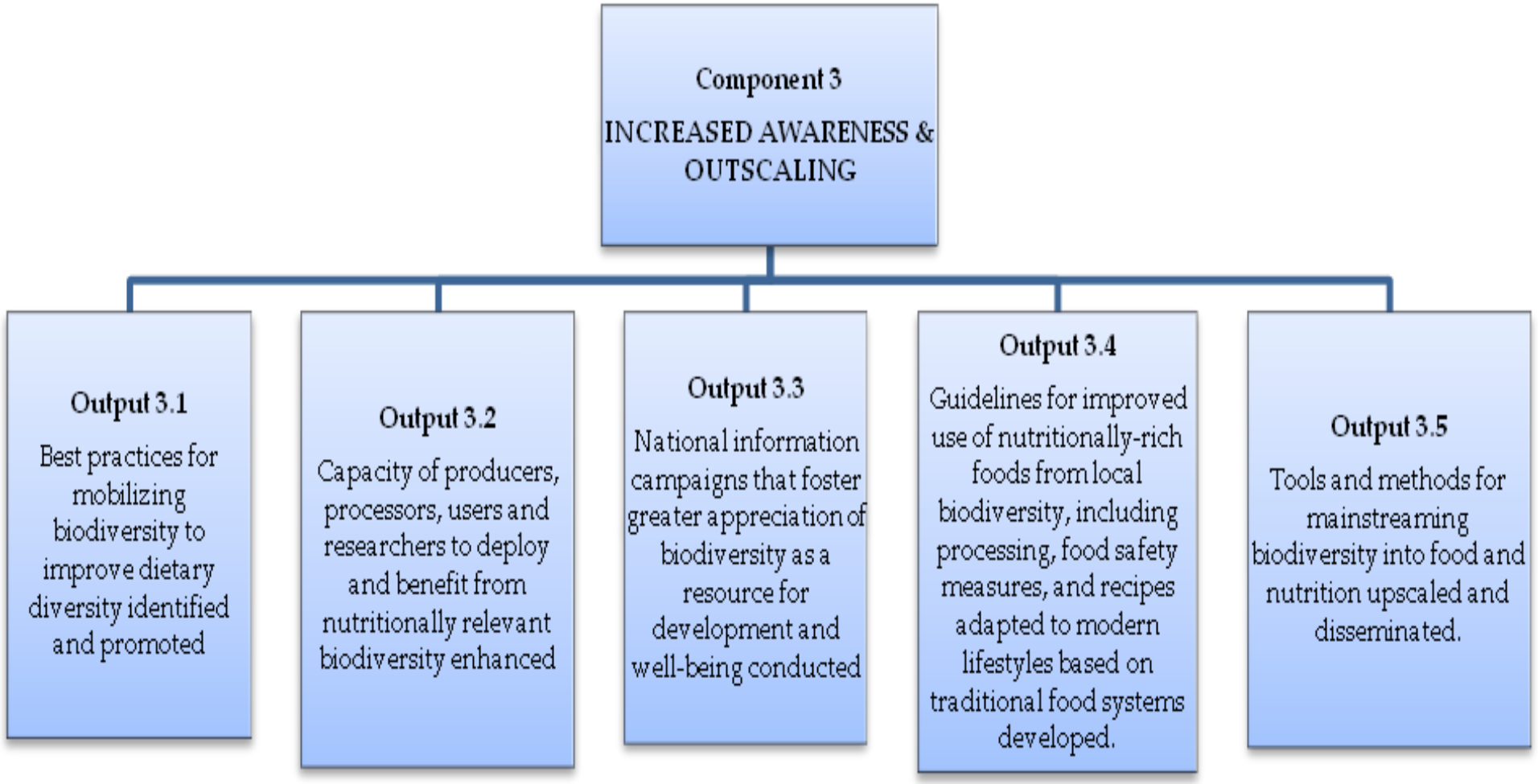

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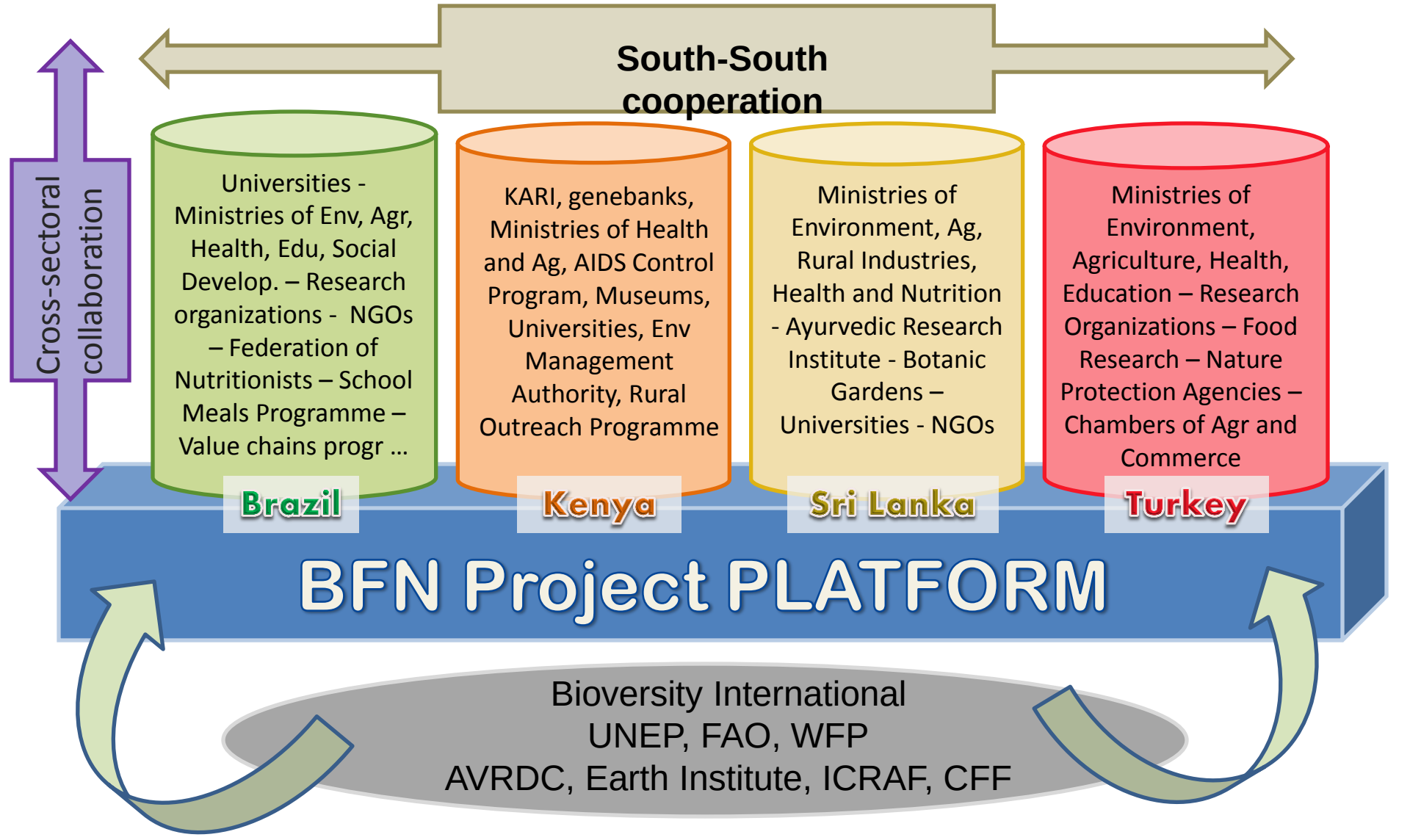
Project Institutional Framework and Implementation Arrangements

Biodiversity for Food and Nutrition Project



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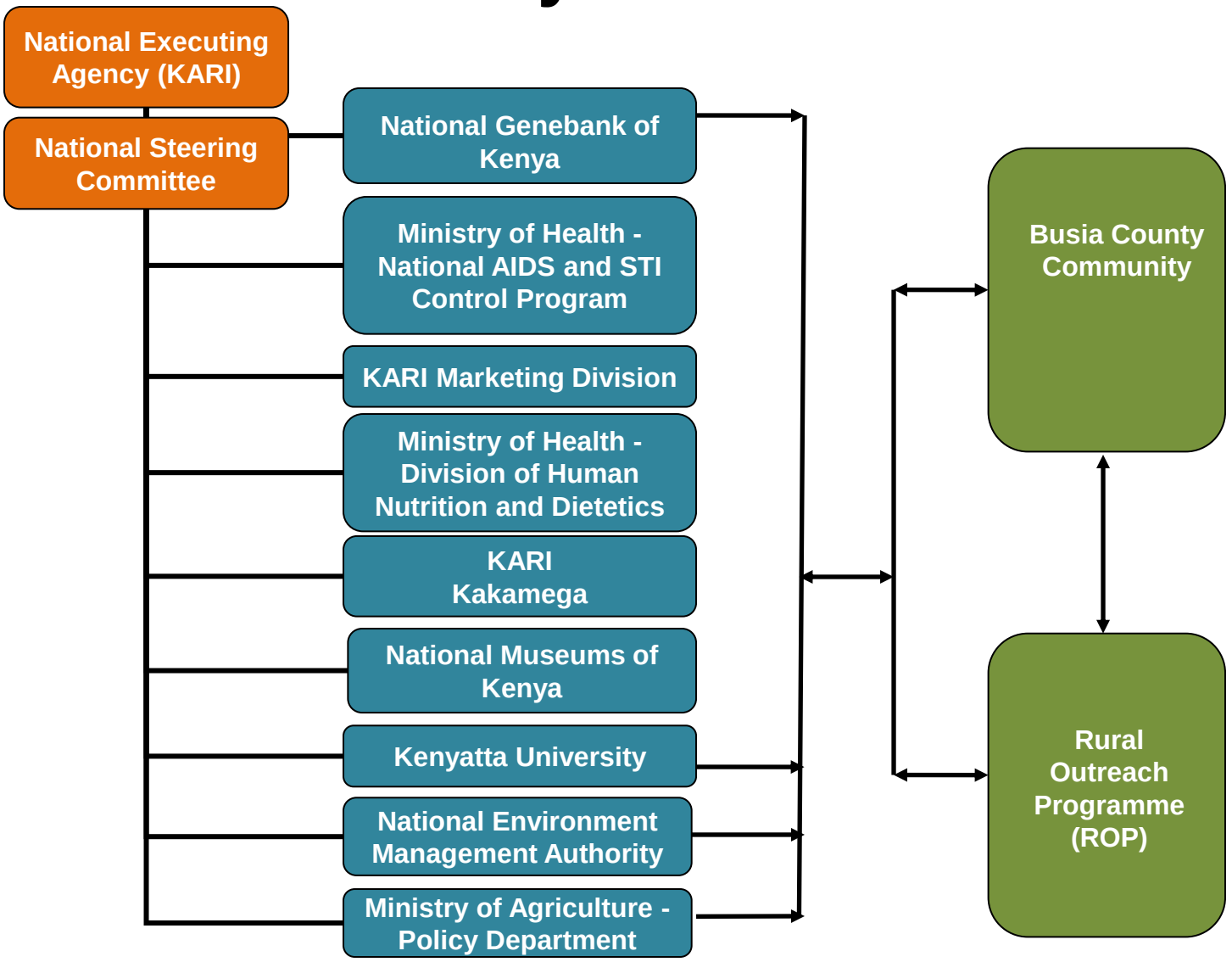
Kenya



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Pilot site baseline surveys

- Assess current availability of local biodiversity for food and nutrition, traditional food lists, availability and utilisation
- Assess food-associated traditional knowledge including food harvests, preparation and storage
- Documentation of indigineous knowledge, loss of food options /dietary diversity

African leafy vegetables marketing in Busia Town

Traders sorting and displaying ALVs for sale on a road side market in Busia (K)

Cowpea (Vigna spp)

(Luhya, Likhubi Swahili -(Kunde)

- Variety “Lel Kwach” used in management of stomach aches
- Variety “Ikhwaike ” used in treating STI (indwasi) and preventing miscarriage

Mushrooms

- Used in the treatment for measles

Ximenia americana

English: wild plum; Luhya (Bukusu): kumutuli-kumubukusu; Teso: olimu, elamai; Luo: olemo (red fruit), olimbochok (yellow fruit); Swahili: mtundukula, mtundakula, mpingi

- Fruit is edible
- Root bark used in tonic drink/tea
- Bark & root a dye source
- Seed oil a preservative & good for beauty care
- Wood used in building
- Leaves fodder

Mondia whitei

Luhya: Omukombero; Kikuyu: Mũhukũra

- For asthmatics
- Muscle relaxant
- Mouth freshener
- Male strength

Urtica massaica

English: Stinging nettle; Luhya: Isambakhulu; Kikuyu: Hatha, thabai; Kipsigis: Siwot; Luo: Ayela; Maasai: Entamejoi

- Used against hair loss
- Constipation
- Indigestion
- Ulcers
- Anaemia
- High blood pressure
- Night sweats
- Diabetes

Tylosema fassoglensis

Bukusu: kumuchayu, chingayu; Maragoli: imbasa; Kamba: Ivole; Luo: ombasa; Maasai: esinkarua; Samburu: dalamboi

- Young pods and seeds eaten, raw or roasted as groundnuts
- Leaves fodder
- Tuber used in medicine for backache & other illness
- Sold in many markets

Croton macrostachyus

English: Croton; **Luhya** – musutsu; **Kikuyu**, **Meru:** Mutundu; **Luo** – Ngong'ngo' ; **Kipsigis**, **Nandi** – tebeswet

- Wound healing
- Veterinary medicine
- Sap, leaves, root and bark
  - skin rashes
  - flu

Myrsine africana

Kamba: Muketa munini; Kikuyu: Mugaita; Kipsigis: osegeteti; Maasai: olsegetiti

- Fruits effective on worms
- Wide medicinal use
- Arbotifacient
- Vermifuge, Anthelmintic,

Searsii pyroides (Rhus natalensis)

English: rhus; Luhya (Bukusu): kumusangura kumusecha, (Tachoni): obusangura; Teso: ewayo, ebubu; Sabaot: sirwa; Luo: sangla, osangla; Swahili: mkono chuma

- Fruits edible
- Roots taken in soup
- Roots a source of dye
- Leaves a fodder
- Tender shoots and leaves chewed as khat (miraa)
- Twigs used a toothbrush

Strychnos henningsii

Borana: karaa; Giriama: mbathe; Kamba, Kikuyu: muteta; Maasai: entuyesi; Meru: muchimbi; Pokot: chapkamkam; Mbeere: mutambi; Samburu: nchipilikwa; Somali: hadesa

- Roots, stems and stem bark boiled in soup for fitness and painful joints (Kikuyu, Maasai, Kamba)
- Fruits used for flavouring beer (Mbeere)
- Root decoction & leaves drunk in soup or honey to treat malaria & rheumatism (Pokot)

Toddalia asiatica

Luhya: luabare; Kikuyu: mururue; Kamba: maluia

- Roots for management of HIV
- Strong anti-biotic and anti-viral properties
- Has a wide medicinal use

Zanthoxylum gilletii

English: African satinwood; Luhya: Shikhoma; Bukusu: Kumusikhu; Luo: Sogo maitha; Kikuyu: Muchagatha

- Bark used in cough medicine
- stem used for sore gum as toothbrush

Terminalia brownii

Luo: Manera, onera; Kamba: muuuku; Embu, Mbeere, Tharaka – mururuku; Somali: Harar, biiris; Kipsigis: Moissot

- Bark decoction emetic, used for fevers, pneumonia and colds
- Ground bark used in old wounds
- Bark used for stomach aches, fresh cuts as bandage
- Arbotifacient
- Used to make dogs infertile

Conclusions

- Recognizing and promoting dietary diversity, food cultures and their contribution to good nutrition
- Appreciating synergies between human health and sustainable use of biodiversity

Help towards achievement of Aichi targets 1, 4, T, 13 and 14.

Biodiversity for Food and Nutrition Project

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AVRDC The World Vegetable Center

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There is always room for more

Thank You