

Consumption of Dryland Indigenous Fruits to Improve Livelihoods in Kenya. The Case of Mwingi District.



P. Simitu ^{1,2,*}, R. Jamnadass ¹, R. Kindt ¹, J. Kungu², and J. Kimiywe ²

¹World Agroforestry Centre (ICRAF), PO Box 30677, 00100 GPO, Nairobi, Kenya

²Kenyatta University, P.O. Box 43844, 00100 GPO, Nairobi, Kenya

* Corresponding author. Tel.: +254 020 7224176;

Fax: +254 020 7224001.

E-mail address: p.simitu@cgiar.org

Introduction

- Dry areas of Kenya rely on alternative food products such as indigenous fruits to supplement their diets.



Hyphaena compressa

Introduction continued....

- Kenya has an estimated 400 indigenous fruit plants, most of which are not fully exploited



Tamarindus idica

Introduction continued....

- This is because these species have not been fostered by agricultural and forestry institutions.



Ximenia americana

Introduction continued....

- IFTs show great potential for providing food, vitamins and income to communities e.g



Scleocarya birrea tree and fruit

Sclerocarya birrea fruit

contain 180 mg of vitamin C per 100 g, surpassing exotic lemon, orange and mango.

Introduction continued....

- Experts have recommended a daily intake of ~ 200 g of fruits for a healthy diet, East Africa consumption is only ~ 40 g.



Berchemia discolor tree and fruit

Introduction continued....

- Increased IFT consumption therefore has strong potential to reduce existing micronutrient deficiencies among populations of dryland Kenya, especially in mothers and children



Vangueria infausta tree and fruit

Introduction continued....

- survey conducted to establish intake levels of indigenous fruits in the drylands of Mwingi District in Kenya.



Balanites aegyptiaca

Introduction continued....

- Study assessed patterns of consumption and perspectives and practices of use and cultivation of IFTs by smallholder farming communities.



Dobera glabra tree

Objective

- To provide a baseline for evidence-based strategies to promote both consumption and cultivation of IFTs in the region in order to lift fruit consumption toward the recommended level.



Annona senegalensis (wild casur apple)

Materials and methods

- Survey was undertaken in Mwingi District, an area with a high prevalence of poverty (70%) and probability of food crop failure (66%).



Mwingi district

- Data was collected in two agro-ecological zones (LM5 and IL6)

Materials and methods cont...

- A stratified random sampling design was employed, equal numbers of women, men, girls and boys (children < 18 years old) were interviewed.



Carissa spinarum

Materials and methods cont.....

- 104 householders were surveyed, 26 by each gender/age



Vitex payos

Materials and methods cont.....

- A combination of pre-designed and semi-structured questions and visual aids were used to collect detailed and



Baobab

reliable data on the frequency and quantity of fruit consumption over time.

Results

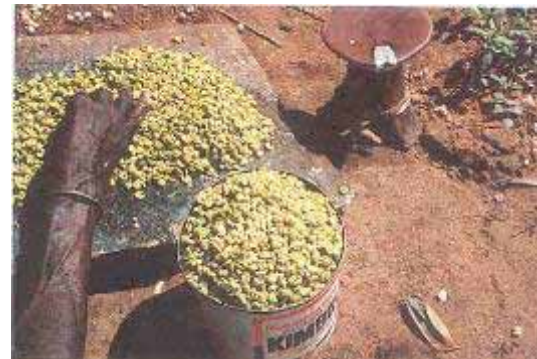
A total of 57
Indigenous
edible fruit
species were
documented
as useful to local
communities



Azanza garckeana

Results

- Despite this large number, the average consumption of indigenous fruits per person per day was only 19 g, most of which was harvested from wild stands (table1)



Boscia coriacea

- The consumption of exotic fruits was even lower (9.1g) and focused on market days when small quantities could be purchased

Results

Table 1. Indigenous fruit consumption in Mwingi District, Kenya, based on responses from 104 interviewees

Month	Consumption in grams per person per day by age				
	<=9yrs	10-19yrs	20-49yrs	>=50yrs	Average
January	6.6	7.1	5.4	6.4	6.4
February	26.1	28.0	14.0	10.2	21.1
March	35.2	36.4	26.4	11.6	29.7
April	27.1	30.3	21.0	7.2	23.8
May	11.4	10.6	6.2	6.3	9.0
June	31.7	25.5	27.0	13.0	25.1
July	33.6	26.5	29.4	12.6	26.5
August	29.4	25.0	20.3	11.0	22.2
September	18.3	13.7	10.3	9.6	12.8
October	21.3	21.5	11.1	7.0	16.5
November	19.6	22.4	11.4	7.3	16.7
December	19.1	20.5	10.0	4.5	15.5
Average	23.6	22.5	16.6	9.1	19.2

Results conti.....

- Generally, the consumption of indigenous fruits by children was much higher than for adults, and there appears to be a general trend in which consumption reduces with age (Table1).



A Strychnos fruit

- However, adults do continue to consume selected fruits, such as *Adansonia digitata* and *Tamarindus indica*.
- For many fruits, adults view them as food only for children.

Results conti.....

- Seasonal variation appears to be an important factor contributing to low fruit consumption, because months of high consumption correspond with the fruiting periods of important species (Table1).



Zizyphus mauritania

Results conti.....

- There is very little planting of indigenous fruit trees on the farm. Only 6% of the households indicated that they have planted any of the IFTs.



Annona senegalensis

Results conti.....

- Many farmers prefer protecting IFTs that exist. 58% of the households had protected at least one indigenous fruit tree on their farm.



Ficus sycomorus

Conclusion

- If bottlenecks to use are addressed, the promotion of indigenous fruits in dryland Kenya could lead to significant changes in the diversity and total amount of fruit that is consumed and marketed by local communities, with significant health benefits.



Cordia monoica

Conclusion cont.....

- From a domestication perspective, there is a need to enhance access to improved germplasm and to develop appropriate management, production and processing systems.



Pachystigma schumannianum

Recommendation

- More research and development needed on IFTs regarding utilization and conservation.



Uvaria scheffleri



**THANK YOU FOR
LISTENING
&
INTERESTS TO
PROMOTE
CONSUMPTION OF
INDIGENOUS
FRUIT FRUITS
TO IMPROVE
LIVELIHOODS
IN THE DRYLANDS**