LOCAL USES OF PREFERRED INDIGENOUS FRUIT TREES IN LAKE VICTORIA BASIN, RWANDA

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Introduction

- Farming communities in Africa have been relying not only on
  - ✓ crop farming
  - ✓but also on other food products that include fruit trees to earn a living

In East Africa, rural people periodically rely on wild fruits to

- ✓supplement their diet
- ✓generate cash income (Mithofer and Waibel, 2003)

Introduction

- Indigenous fruit trees (IFTs) have been valued by communities as multipurpose
  - ✓ Enhancing food security
  - ✓ Source of income
  - ✓ Medicine
  - ✓ Timber
  - ✓ Charcoal and socio-cultural values

(Akinnifesi *et al.,* 2007; Simitu, 2005, Sekyere, 2009)

Introduction (cont'd)

- IFTs are also maintained for environmental and ecological reasons:

- being stable
- adapted to climate change
- providing shade
- air purification

(Kalaba *et al.*, 2007)

Introduction (cont'd)

Problem:

Though IFTs contribute to rural communities' livelihood, they are however neglected and underutilized as they have not attracted the focus of many researchers

Aim:

- ✓documenting the available IFTs
- ✓establishing preferences and reasons for preferences

Introduction (cont'd)

- ✓analyzing description of preferred IFTs
- ✓Establishing potential benefits of IFTs in Rwanda

- ❑Gathering information on what local community know
  - ✓Could be a step to improve living conditions
  - ✓could improve awareness on IFTs domestication

Materials and methods

- **Study area**: 3 districts in Rwanda (Bugesera, Kirehe and Nyamagabe)

- Sampling and data collection:
  - ✓ Reconnaissance

  - ✓ Two sectors in each districts, two cells in each sector, two villages in each cell were sampled

  - ✓ Household survey (HHs):10 household representative per village

  - ✓ Focus Group Discussion (FGD): 10 household representatives per cell

Materials and methods (cont'd)

- Data analysis:

➢ Quantitative data were entered into SPSS for statistical summaries

➢ Qualitative data were systematically transcribed to generate themes

Results and discussion

Table 1. Inventory of Indigenous fruit trees in Rwanda

IFTs			Districts		
Scientific name	**Local name**	**Family name**	**Bugesera**	**Kirehe**	**Nyamagabe**
Ximenia caffra	*Amasasa*	Olacaceae	√	√	
Ancylobotrys amoenia	*Amakamire*	Apocynaceae	√	√	
Parinari curatellifolia	*Amanazi*	Chrysobalanaceae	√	√	
Sitrychnos sp.	*Amahonnyo*	Loganiaceae	√	√	
Garcinia buchananii	*Amasarasi*	Clusiaceae	√	√	
Lannea schimperi	*Imimuna*	Anacardiaceae	√	√	
Pappea capensis	*Imimena*	Sapindaceae	√	√	
Carissa edulis	*Iminyonza*	Apocynaceae	√	√	
Anona senegalensis	*Imisharamariya*			√	
Dovyalis macrocalyx	*Imitegengeri*	Salicaceae	√	√	
Myrianthus holstii	*Imyufe*	Urticaceae			√
Acokanthera schimperi	*Umusagwe*	Gentianales	√		
Haplocoelum foliolosum	*Imijwiri*		√		

IFTs identified

- **13 IFTs were documented in Rwanda**
  - ✓Only 11 IFTs are found in Bugesera
  - ✓10 IFTs were documented in Kirehe
  - ✓ 9 IFTs are found in both districts
  - ✓Nyamagabe: Only one IFT (*Myrianthus holstii)* was identified

Table 2. Preferred IFTs and reasons for preference

IFTs	% (N=300)	Reasons for preference
Myrianthus holstii	20.2 (1)	Edibility and abundance
Parinari curatellifolia	13.2 (2)	Edibility (particularly for children), and abundance
Garcinia buchananii	11.1 (3)	Edibility and abundance
Sitrychnos sp.	2.9	
Pappea capensis	10.3	
Ximenia caffra	10.4 (4)	Abundance, food for children and sweetness
Anona senegalensis	.5	
Ancylobotrys amoenia	.2	
Haplocoelum foliolosum	.2	
Carissa edulis	2.6	
Lannea schimperi	8.9	
Acokanthera schimperi	1.2	
Dovyalis macrocalyx	.2	

IFTs preferred

- *Myrianthus holstii, Garcinia buchananii, Ximenia caffra, and Parinari curatellifolia* are the most preferred IFTs in Rwanda

- Edibility, abundance, food for children are the most reasons for preference

Preferred IFTs

Parinari curatellifolia

Myrianthus holstii

Ximenia caffra

Major characteristics of preferred IFTs

IFTs	Color of the fruit	Taste of the fruit	Shelf life of the fruit	Yield estimation /tree
G. buchananii	-green (raw) -yellow (ripe)	-sour (raw) -sweet (ripe)	1 month when ripe	30 baskets/season
Parinari curatellifolia	Green (raw) Yellow (ripe)	-good smell, -sweet when ripe -size of irish potato	One week	5 bags (tree)

Preferred IFTS, use and description

Myrianthus holstii	**Green when raw and red when ripe (it is white inside)**	**Sour when raw and very sweet when ripe**	**6 days**	**200 kgs per tree for the whole period of harvesting**
Ximenia caffra	It is raw when green and yellow when ripe	Bitter when raw and bitter when ripe	2 weeks	1/2bag

Focus Group discussion

Uses of preferred IFTs

- ***G. buchananii***
  - is used as food. The ripe fruit is eaten and can be processed into juice.
  - The fruit is sold to generate money
  - Its bark is used as container for banana beer
  - The fruit treats stomach disorders when eaten, malaria using bark or roots. Decoction and syrup are methods of preparation of medicine

Uses of preferred IFTs

- ***P.curatellifolia***
  - ✓Food (fruit, juice),
  - ✓ beer
  - ✓Medicine, Market
  - ✓timber, firewood, shade

Myrianthus holstii

- The fruit is used as food
- timber , charcoal, medicine, market, appetizer
- Its roots are used to treats malaria and digestive disorders

✓ Decoction, infusion and syrup are the known ways used to prepare medicine

Uses of preferred IFTs

Ximenia caffra

- Fruits are eaten by children
- Fruits are sold (taken to local markets)
- Juice is mixed with water to treat cough and malaria
- Firewood

Conclusion and implications

- Communities knows a lot about IFTs
- Though most of IFT grow wild, they are considered as sustainable plant species with nutritive, medicinal and economic values to rural communities

- Once domesticated, IFTs can
  - ❖ provide communities with a lot of vitamins, and proteins that are very important for a healthy body

Conclusion and implications

- be an opportunity of income generation for communities
- help fight against diseases at zero expense
- help in planning and directing developmental research
- help in planning extension programs
- help in agricultural policy formulation

POLICY MESSAGE

- Clear policy on raising communities' awareness on on-farm management of IFTs
- Keeping consciously community knowledge on IFTs
- Integrating community knowledge on IFTs into agroforestry programme

THANK YOU VERY MUCH