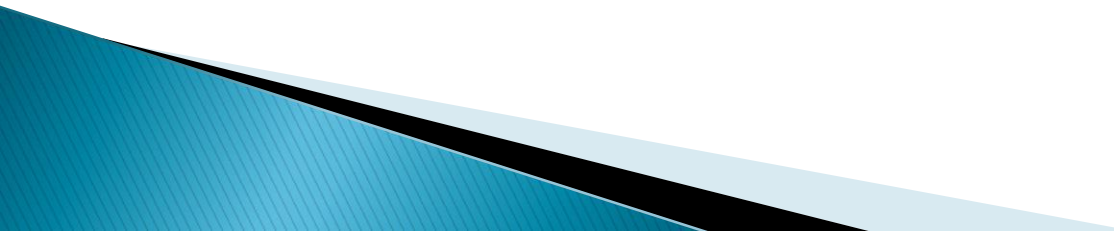


BANANAS IN TANZANIA

Mgenzi Byabachwezi
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History and diffusion of bananas

- Centre of origin of wild banana India, Papua New Guinea, Malaysia and Indonesia
 - The origin of edible banana is the Southern and southeastern Asia.
 - African highland banana cultivated in 500 to 1000 AD in the Great Lake Region of Africa (Tanzania, Uganda, Kenya, Rwanda, Burundi and Zaire)
 - Much evolution has occurred since then, resulting in the existence of about 150 varieties which are unique to the Great Lake Region
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Banana acreage and production in Tanzania

- The area under banana production is 469,590 ha.
- Acreage by hierarchy: Kagera, Kilimanjaro, Mbeya, Tanga, Arusha, Kigoma and others (Morogoro, Coast Regions and Zanzibar)
- FAO data 2013 shows that banana production is 5.7 tons/ha. This varies in different zones e.g Kagera is 55 t/ha after introduction of FHIA Bananas

FHIA 17 & 23



Enshakara/ndizi Bukoba/ndizi Uganda



Types and cultivars of banana

- East African Highland banana comprising AAA cooking and beer cultivars. Cooking varieties are starchy and normally cooked green include Luholole/Nshakara/ Ndizi Uganda or Bukoba/Halahala
- None EAHB beer cultivars include Kisubi/Harare/Zambia/Gurutu/Bloken (Pisang awak)(ABB)
- The roasting plantain such as Ziwa la Mwali/ Kikonjwa/ Gonja/ Mzuzu/ Itoke/ Mkono mmoja (AAB), Bluggoe (Kivuvu, Mkojozi).
- Dessert (banana eaten ripe and uncooked, including Ndizi sukari/Nyerere/Pukusa/Kipukusa/Kamara masenge (Nay poovan)(AB)
- Dessert Cavendish, e.g. Mtwike and Kimalindi (AAA)
- Dessert Gros Michel, e.g. Jamaica sweet (AAA)

Distribution of banana types

Banana type	Lake Zone	Northern Zone	Southern Highlands Zone	Eastern Zone	Zanzibar
Cooking	80	70	60	9	40
Beer	10	20	3	1	0
Dessert	8	6	7	70	10
Roasting	2	4	30	20	50

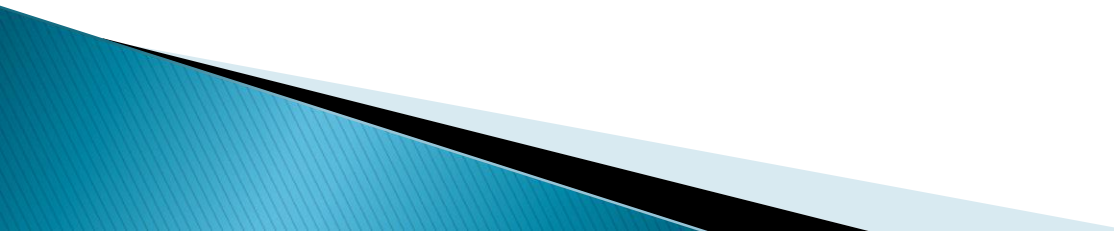
Uses of some selected common banana varieties by Zone

Banana types	Lake Zone	Northern Zone	Southern Highlands Zone	Eastern	Zanzibar
Cooking	Nshakara Entobe Nyoya Kiguruwe Kijoge	Mtwishe Mshale Mlelembo Ndizi Uganda and Bukoba	Itoke/Ifufu or Mzuzu or Gonja Matooke*	Kimalindi Mtwishe Mshale Jamaica	Mzuzu Kimalindi Ndizi Bukoba Mtwishe
Beer	Nshambire, Mbire	Sirya, Kambani	Sirya, Kambani, Ndifu, Ndyari, Mwamnyira	Kisukari, Jamaica Mtwishe Kimalindi	None
Dessert	Kijoge Kanana Kiguruwe	Sirya Kambani	Kambani Kisukari	Mtwishe Kimalindi Kisukari Jamaica	Kisukari Kimalindi
Roasting	Gonja Nshakara	Mshale	Mzuzu or Itoke or Ifufu	Mzuzu Mkono wa Tembo or Gonja	Mkono wa Tembo (Gonja) Mzuzu

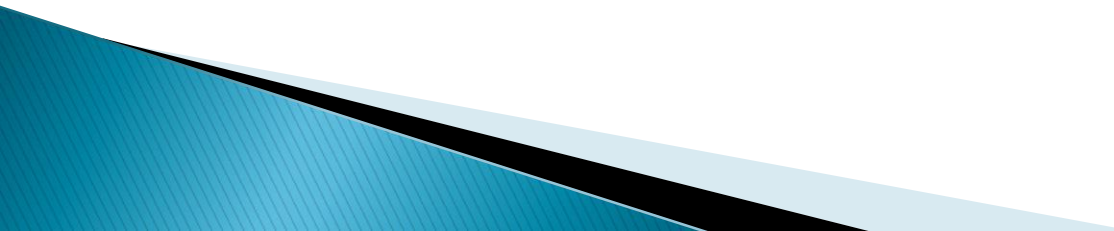
Banana constraints

- ***Banana weevils (Cosmopolites sordidus)***
- ***Nematodes (Pratylenchus goodeyi, Helicotilenchus multincinctus , Radopholus similis, Pratylenchus coffaea and Meloidogyne spp.)***
- ***Panama disease (FoC Race 2)***
- **Black and yellow sigatoka (Mycosphaerella *fijiensis* and *Mycosphaerella muscola*)**
- ***Poor soil fertility***
- ***Unfavourable climatic conditions***
- ***Poor crop management.***
- ***Poor marketing***

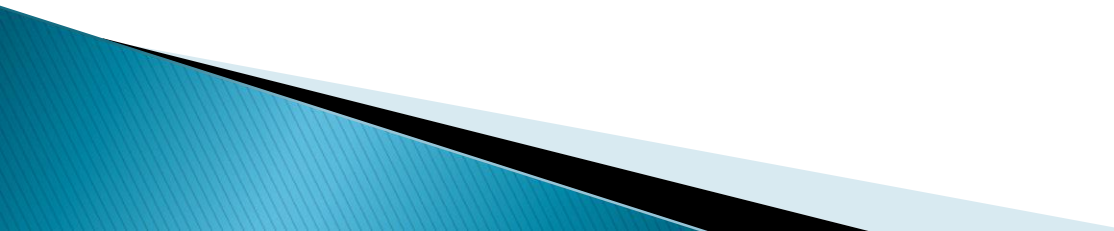
Source of reliable planting materials

- With outbreaks of pest resistant bananas and or replacement plant materials are needed
 - Farmers prefer different materials according to their needs
 - New banana varieties have been developed and need to be disseminated
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Available means of multiplying banana planting materials

- Conventional method
 - Complete and partial decapitation
 - Banana Macropropagator
 - Tissue culture method; available labs
 - CROP BIOSCIENCE – Arusha
 - SUA – Morogoro
 - ARI Mikocheni
 - KILIMORGANO – Mikocheni
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State of the art and current recommendations

- Traditionally, funds for banana research came from the Ministry of Agriculture
 - Beginning in the year 2000, banana researchers have been dependant on international organizations
 - I take this opportunity to congratulate all scientists who worked tirelessly to ensure the program continued to stand; by looking for funds from various sources
 - This also is my recognition to all donors who supported and are still supporting banana programs
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Issues that need urgent attention

1. Verification of BXW infection in Tanzania

- Since the outbreak of BXW in Kagera region in 2006 and later in Tarime, Sengerema, Geita and Ukerewe there was no investigations made to ensure that the disease have not affected other banana growing areas in the Northern, Southern, Coasts and or Zanzibar Islands. My proposal
 - Training of agriculture extension staff on the symptoms of the disease and how to get prepared (surveillance) before their areas are invaded. To be in Kagera

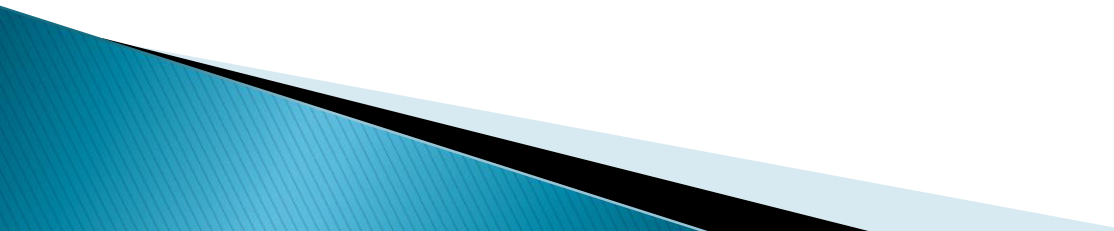
OR

- Training from their areas while making random surveys in some village to assess the situation pertaining BXW

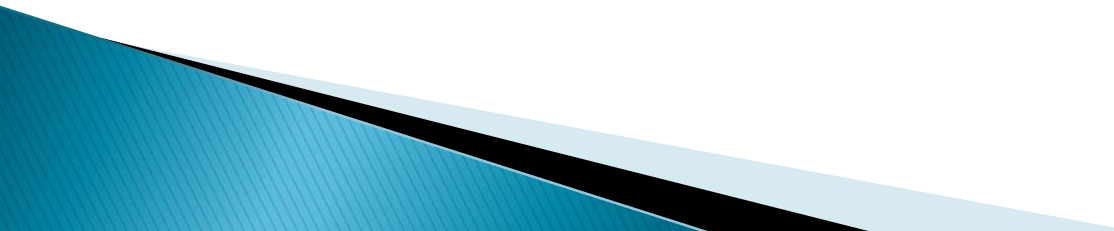
2. Surveillance for FoC TR4

- It is reported and confirmed that Fusarium Oxysporum Tropical Race 4 (FoC TR4) has caused a great damage to banana plantations in Mozambique some 150 km from the Tanzania Mozambique
- The disease affects all Cavendish bananas and highland bananas have not yet confirmed to be resistant
- Like for BXW, a rapid survey is needed along the border of Tanzania and Mozambique to verify if the disease have not crossed
- The whole of Tanzania is at risk because:
 - the disease is also in Jordan where Zanzibar people frequent commute
 - the fungi is transported in the soil and is in China. Used machinery can be the source of inoculation
 - business persons who go to far east can bring the fungi on their shoes

3. Collect and update banana acreage and production in Tanzania

- Currently there is no reliable data on banana acreage in Tanzania
 - Tanzania exports bananas to neighbouring countries but no reference records of amount exported in reference years, what income gained from bananas etc
 - Without proper records we cannot defend the importance of the crop
 - While making proposals we cannot indicate the target of expected changes after interventions
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4. Establishing a register of who is who in banana research

- There is no list of scientists who work on bananas in Tanzania
 - We sometimes come across published articles some with information that is not realistic and sometimes quoting scientists on issues that are not true
 - This list needs to be in place before the end of June 2016
 - We will ask the Institute Directors to send us the list of scientists working on bananas, their projects and who is funding them
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Recommendations for future banana research and development

i. Weeds

- The physical damage of weeds to bananas, in terms of competition for nutrients and hosting harmful insects, is not yet quantified

ii. Variety testing

- Although already being done, this is a continuous process


iii. Wind breaks

- Wind breaks, especially if formed by multi-purpose trees, might be a solution, but has not yet been investigated

iv. Mulching materials and techniques

v. Coffee-banana intercropping techniques and use of other intercrops

vi. Nematodes

- Damage, distribution, control etc
 - That is why we are here, please keep it up
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Acknowledgements

- ▶ BMGF
 - ▶ MALF
 - ▶ DRD
 - ▶ SRI
 - ▶ Researchers in the Project **“Establishing the Base for Effective and Sustainable Management of Major Plant-Parasitic Nematodes Affecting Banana in Tanzania”**
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The value of banana is not limited to food, beer and income but has many other uses

THANK YOU



THANK YOU