Decentralised Vine Multipliers: Practice after Project?
Experiences from Marando Bora, Lake Zone Tanzania

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4th Annual SPHI meeting Kumasi, Ghana
7-9th October, 2013
Lake Zone, Tanzania

- 15m inhabitants (1/3 of Tz. Population)
- Sweetpotato 2\textsuperscript{nd} or 3\textsuperscript{rd} staple after: maize, rice, cassava, banana
- Livestock, fishing
- Climatic unpredictability affecting maize & rice production
- CBSD and BBW affecting cassava and banana
Two Models:

- Trained Decentralized Vine Multipliers (DVMs):
  - 88 DVMs multiplied & distributed vines to neighbouring farmers (~10-12km) targeted through a voucher system. DVMs source of knowledge for farmers (12 districts)

- Mass multiplication of planting material at centralised sites:
  - where vines were then harvested & transported to central points for mass dissemination. (4 districts)

- Reached 110,000 farmers
  - 74% women, between December 2010 – June 2012

- Research to compare cost-effectiveness of models & initial adoption (endline survey)
Hardening and primary multiplication

1. Pre basic seeds: TC plantlets from KEPHIS & TC Lab

2. Hardening: Maruku

3. Primary multiplication: Maruku
Three Tier Multiplication

Primary sites (2): research managed

Secondary sites (2): NGO managed

Tertiary (DVM) sites (88): farmer (group or individual) managed

Slide credit: CRS Tanzania (adapted)
Challenges during implementation

Technical
- SPVD infection on susceptible varieties: Ejumula, Jewel, Ukewere
- Weevil and mite infestation at some sites
- Mataya (wrong identification) and Kiegea (insufficient quantities) not available for dissemination to implementing partners
- Kabode in release pipeline in Tanzania
- Multiplication rates varied by variety, agro-ecology & management

Institutional & coordination
- Timeliness of delivery of Information Education & Communication (IEC) materials
- Harmonizing demand creation activities with actual availability and supply of vines
- Engagement with district councilors for advocacy & support
- Capacity to manage & supervise large number of DVMs
- Coordination among different partners and across different levels
- Short project duration
Decentralised Vine Multipliers: survey

- Follow up study in March 2013 visited all 88 DVMs:
  - questionnaire & observation of current multiplication practices
- Study objectives:
  - Use of different technologies which had been promoted by the project
  - Feedback on varieties preferred by DVMs and their clients
  - Feedback on participation in the pilot QDPM scheme
  - Whether or not DVMs were continuing and reasons
Preliminary findings: 
DVM composition & governance

• 72% of DVMs worked as a group & 28% were individual DVMs

• **Individual DVMs (n=25): 28% women**

• 940 farmers were members of the group DVMs
  • 51% female; 39% male and 10% youth

• **Group DVMs (n=63): 68% had 50% or more women**
  • 43% groups established prior to project
  • 30% groups registered with Government
  • 87% kept records of vine multiplication & sales
  • 70%/27% of group chairs were male/female
  • 57%/40% of group secretaries were male/female
  • 40%/55% of group treasurers were male/female

• **Previous experience**
  • 23% of all DVMs were involved in cassava multiplication (GLCI)
  • 18% of all DVMs multiplied & sold sweetpotato vines prior to project
Technology use

- March 2013: 61 (69%) DVMs multiplying vines for sale or for own use

- Multiplication technology:
  - 34% using rapid multiplication technology (RMT)
  - 61% using conventional spacing for vines & roots
  - 5% using combination
  - Higher % of female vs male majority groups practiced RMT

- Irrigation use:
  - 97% irrigated plots; majority with buckets and w/cans
  - 23% used motorized pumps; 12% treadle pumps

- Fertilizer use:
  - 87% used organic or inorganic fertilizer during project; 26% continued after project
  - Higher % of female vs male majority groups used fertilizer during & after project
Varietal preferences: DVMs & farmers

- **DVMs most productive variety:**
  - Polista (cleaned up popular local variety): 44%
  - Kabode (improved OFSP): 17%
  - Ukerewe (cleaned up popular local variety): 15%.

- **Farmer feedback:**
  - Polista: more roots & high production, drought tolerant, high DM content, disease resistant, resembles local varieties, palatable, healthy vines, early maturing
  - Kabode: more roots & high production; preferred by children; drought tolerant, attractive colour, high DM content, disease resistant, healthy vines
  - Ukerewe: more roots & high production, palatable, high DM content, early maturing, resembles local varieties hence acceptable,
  - Ejumula: attractive orange colour, palatable,
  - Jewel: more roots and high production, early maturity, attractive orange colour
Knowledge & learning

- **2012: 4-5 visits by extension agent**
- **Most useful advice:**
  - Weeding multiplication beds
  - Bed preparation
  - Rouging to remove diseased plants
- **QDPM inspection visits:** 12% of DVMs had participated in pilot. Reported advantages
  - Production of healthier planting material, free from pests & diseases;
  - Identification of pests & diseases; rouging of diseased plants;
  - Production of marketable vines
- **Interest in continuing inspection visits**
  - Production of healthier & marketable vines
  - Healthy vines produce quality roots
Voucher system

- **DVMs key actors in voucher system**
  - farmers paid 100 Tsh and DVMs reimbursed by project 500 Tsh for 200 cuttings

- **Advertising:**
  - 76% of DVMs had signboards
  - Village meetings, schools, leaflet distribution
  - Radio

- **60% DVMs reported no disadvantages to the voucher system**
  - “…the system was good because every member was aware of the number of vouchers used so there was not cheating for members”

- **Main disadvantages**
  - “Farmers not used to buying vines”
  - Late payment or reimbursement for the vouchers
  - Lack of sensitization on the voucher system
Continuation of vine multiplication

- 84% of DVMs stated *intention* to continue
- DVMs multiplying in July-December 2012 (post project)
  - 46% group DVMs
  - 42% individual DVMs
  - 44% were multiplying for sale
- March 2013: 69% were currently multiplying
- *Intention and practice depends on*
  - Season (short rains or long rains)
  - Objective: vines only or vines and roots
  - Individual circumstances: need to identify alternative site, family illness, group dynamics
Continuation of vine multiplication

- **Stated reasons for abandoning multiplication:**
  - Wildlife damage; flooding or lack of reliable water source
  - Group dynamics
  - Local tradition and culture not conducive to selling of vines
  - Community thinks that vines should continue to be subsidized or that there is not market for vines without vouchers

- **Stated reasons for continuing:**
  - The need for “marando bora” in the community was high
  - Income generation from roots and vines
    - Project: Tsh 600 for 200 cuttings
    - Post project: Tsh 1,166 for 200 cuttings
Discussion

- Can DVMs act as link between research & farmers?
  - Sourcing & *maintaining* clean planting material (net tunnels)
  - Good agricultural practices for vine & *root* production
  - Location for OFT & Demo plots

- **Selection criteria for DVMs?**
  - Gender
    - Group DVMs may be more appropriate for women
    - Moral economy – social enterprises
    - Additional funds required to address gender specific constraints

- **Strengthening capacity of DVMs?**
  - Supervision & mentoring
  - Demo plots
  - Labeling of PM important: traceability, DVM visibility, information to farmers
  - QDPM inspection
Discussion

- Piggy backing sweetpotato onto another RTB e.g. cassava?
  - SP & cassava agro-ecologies not the same
  - SP requires higher water & management requirement
  - Higher supervision from field staff needed
  - Organisation & project paradigm default: resulted in male cassava multipliers vs sweetpotato is a woman’s crop

- Disease identification and management:
  - Differentiate between pathogen symptoms and nutrient deficiencies
  - Influence of agro-ecology and management levels
  - Identify optimal period to “flush through” clean material (Virus Degeneration Studies)
Discussion

- **Decentralizing & managing diversity**
  - Agro ecologies, market context, DVM objectives

- **Factors influencing sustainability**
  - Group/individual vine enterprises
  - Agro-ecology, seasonal conditions and timing
  - Pipeline of new varieties
  - Market integration (roots) and vine demand
  - Mixed enterprises: vines & roots; sweetpotato & other crops; profit & social objectives
Thank you!
Acknowledgements!

The Gates Foundation; CRS: Lembris Laizer & Amsalu Gebreselassie; KIMKUMAKA: Zephaniya Ihuya, Beatus, Swalala; TAHEA: Mama Kapande, Mr. Bundala and Joseph Mabala; RUDDO: Father, Innocent; BRAC: Ezekiel Kabwe, Samson Mollel; MFEC, CDoS, MRHP; DALDOs and district crop protection staff; HKI: Margaret B., and Sonii David; LZARDI (Maruku and Ikiriguru) Everina, Kulembeka, Innocent, Mafuru; Mikocheni ARI: Joseph Ndunguru and Nessie Luambano; Regional Plant Health Office, Mwanza: Dorothy Lusheshanija; NRI: Richard Gibson; CIP: Sam Namanda, Kirimi Sindi, Luka Wanjohi, Priscilla Wainaina, Sammy Agili, Jan Low and Reuben the champion tea maker!