

NATIONAL LEVEL POST HARVEST MANAGEMENT (PHM) CONFERENCE

“Reducing Post-harvest Losses for Improved Food
Security and Industrialization”

University of Dar es Salaam

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Audifas Gaspar

Dr. Christopher Mutungi

Dr. Adebayo Abass

International Institute of Tropical Agriculture

- Agricultural intensification projects aim at identifying best practices.
- Innovative arrangements for increasing agricultural productivity.
- An increase in land productivity without corresponding proper handling may heighten postharvest losses at a greater magnitude than 40%.

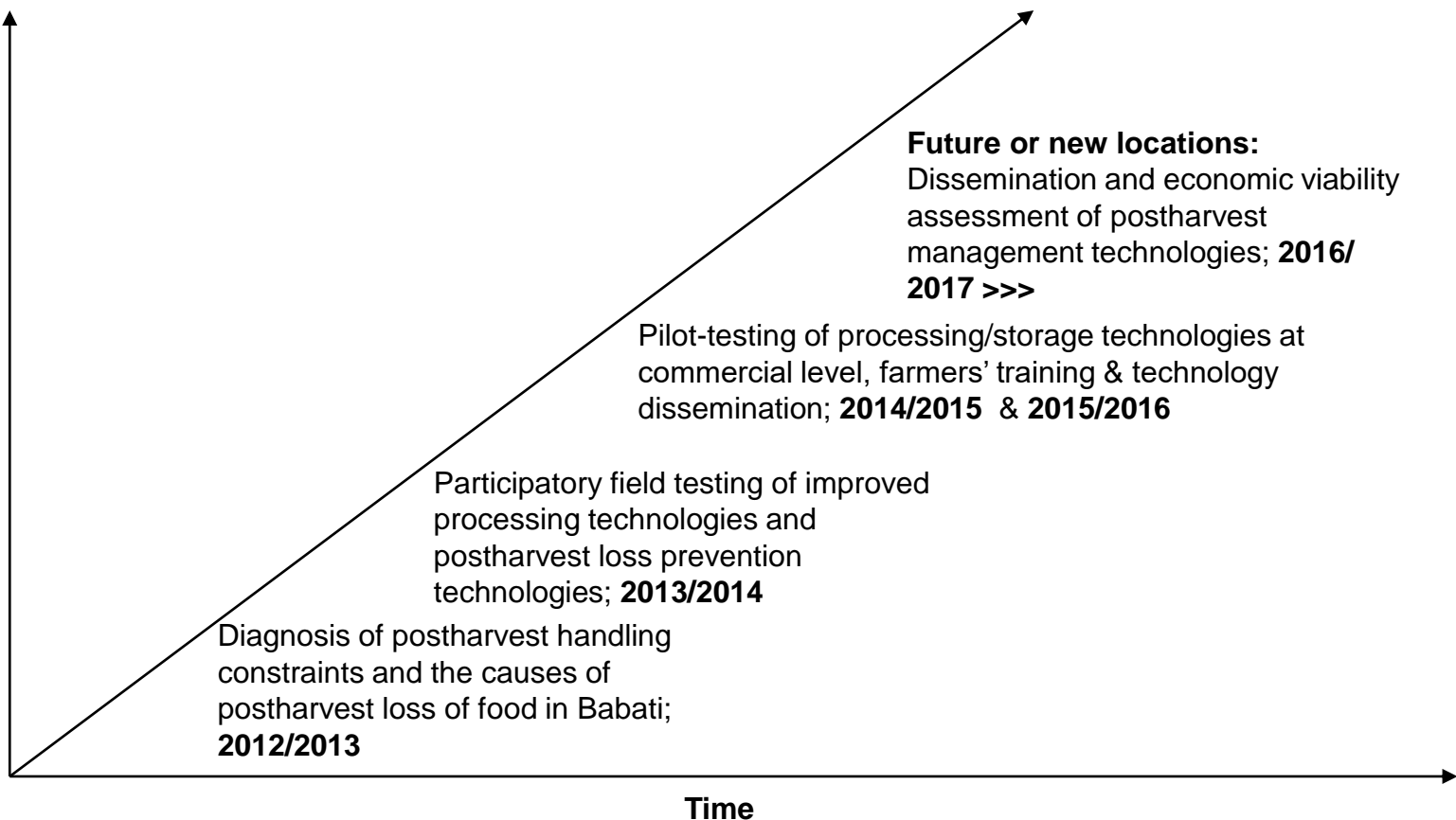
- Lack of effective postharvest storage technologies
- Postharvest pests (causing 20-30% loss)

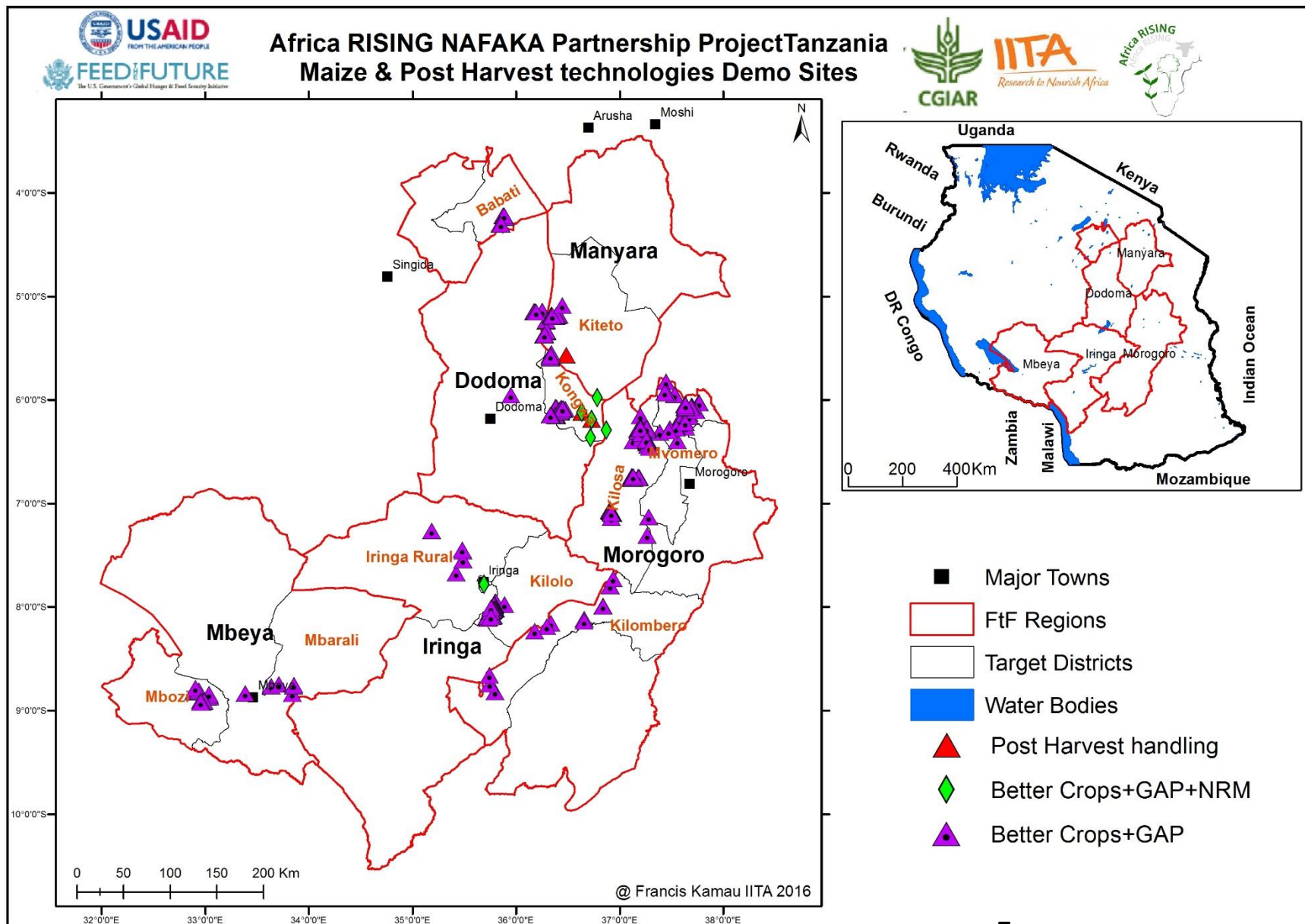


- Less revenue due to the high postharvest losses, further aggravating poverty.
- Possible higher cost of production

Activities in last 5 years

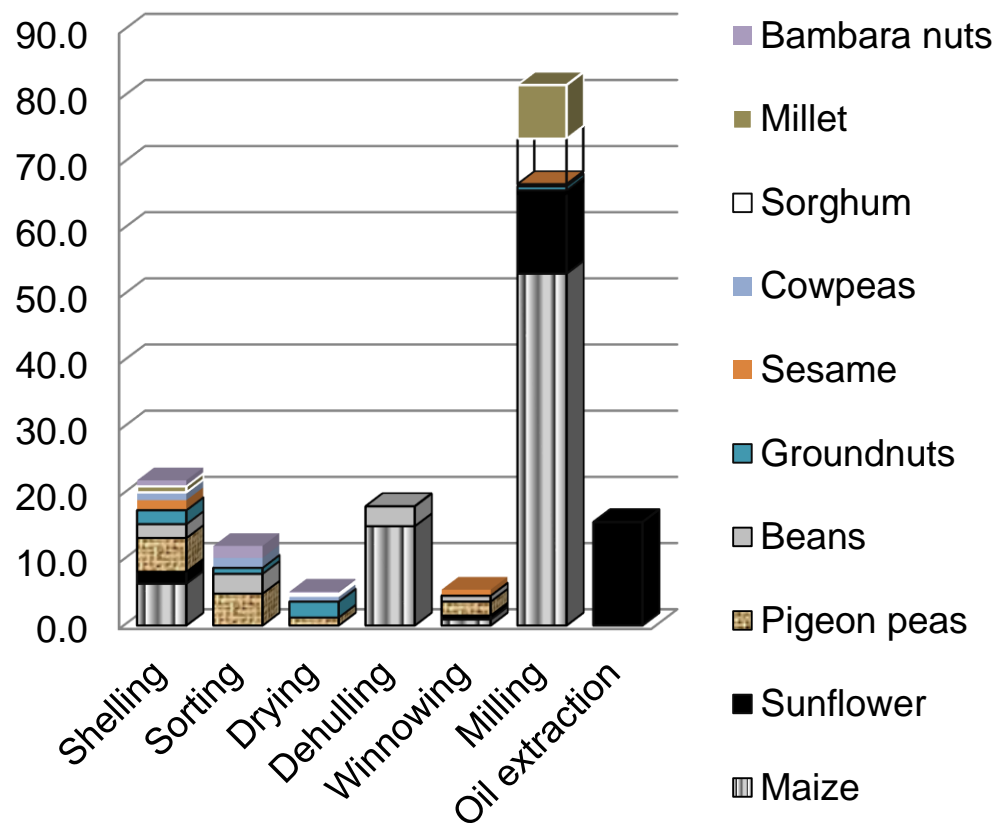
**Africa RISING
Postharvest
research
activities**





Baseline study results

- Significant quantity losses occur:
 - in the field (15%);
 - during processing (13-20%);
 - and during storage (15-25%).
- Postharvest processing activities carried out manually
- Almost entirely by women



Source: Abass et al., 2014;
cross-sectional survey data,
Dodoma and Manyara; N = 333

- Little knowledge and low exposure to improved postharvest technologies.
- Many ineffective traditional storage methods still common
- Processing and storage pests among most important factors for losses.

Consequence of postharvest losses

- Inadequate food supply in many households;
- 41% received food aid.

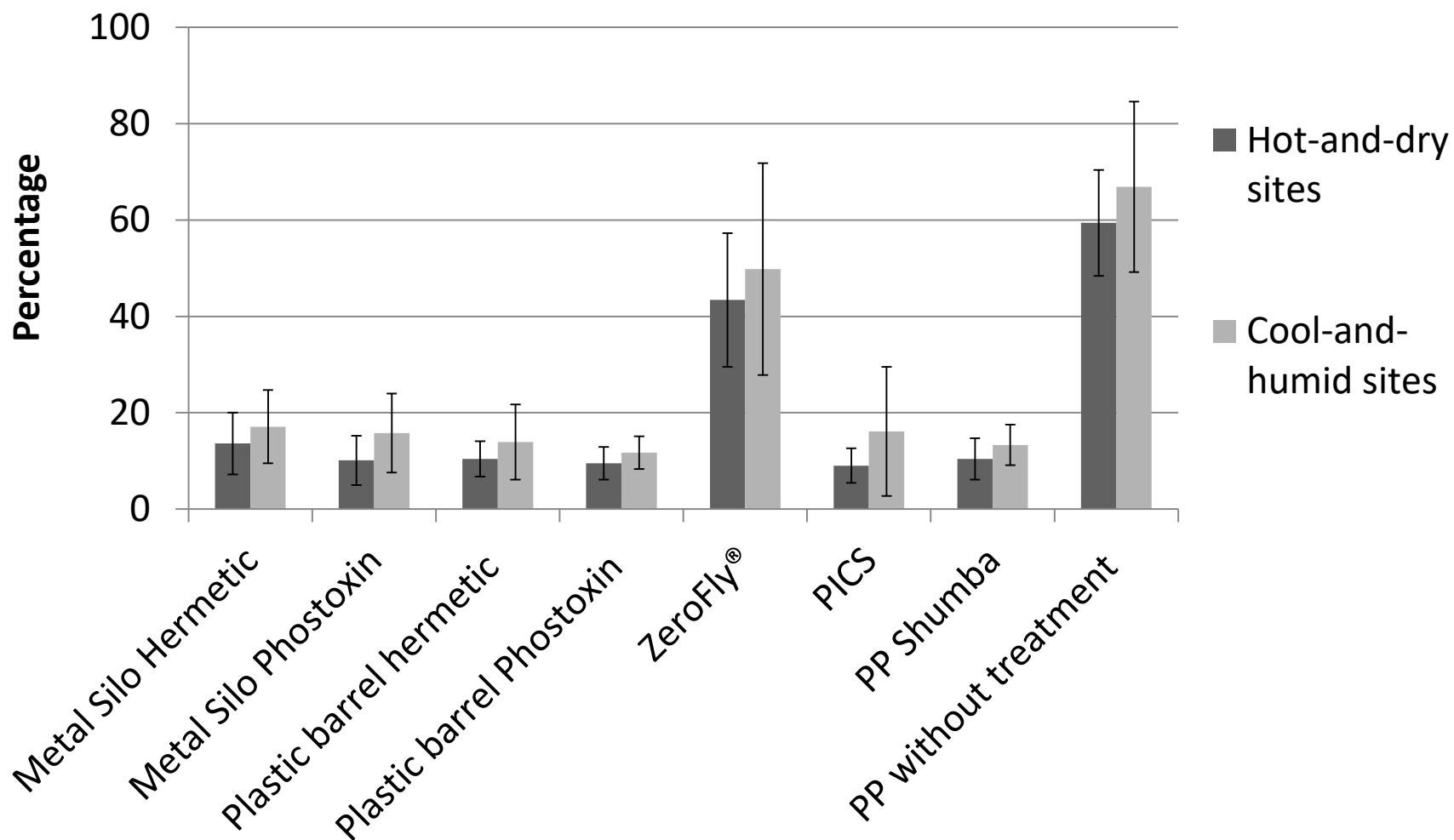
Implication: PH processing operations and storage need special targeting

Establishment of postharvest management trials

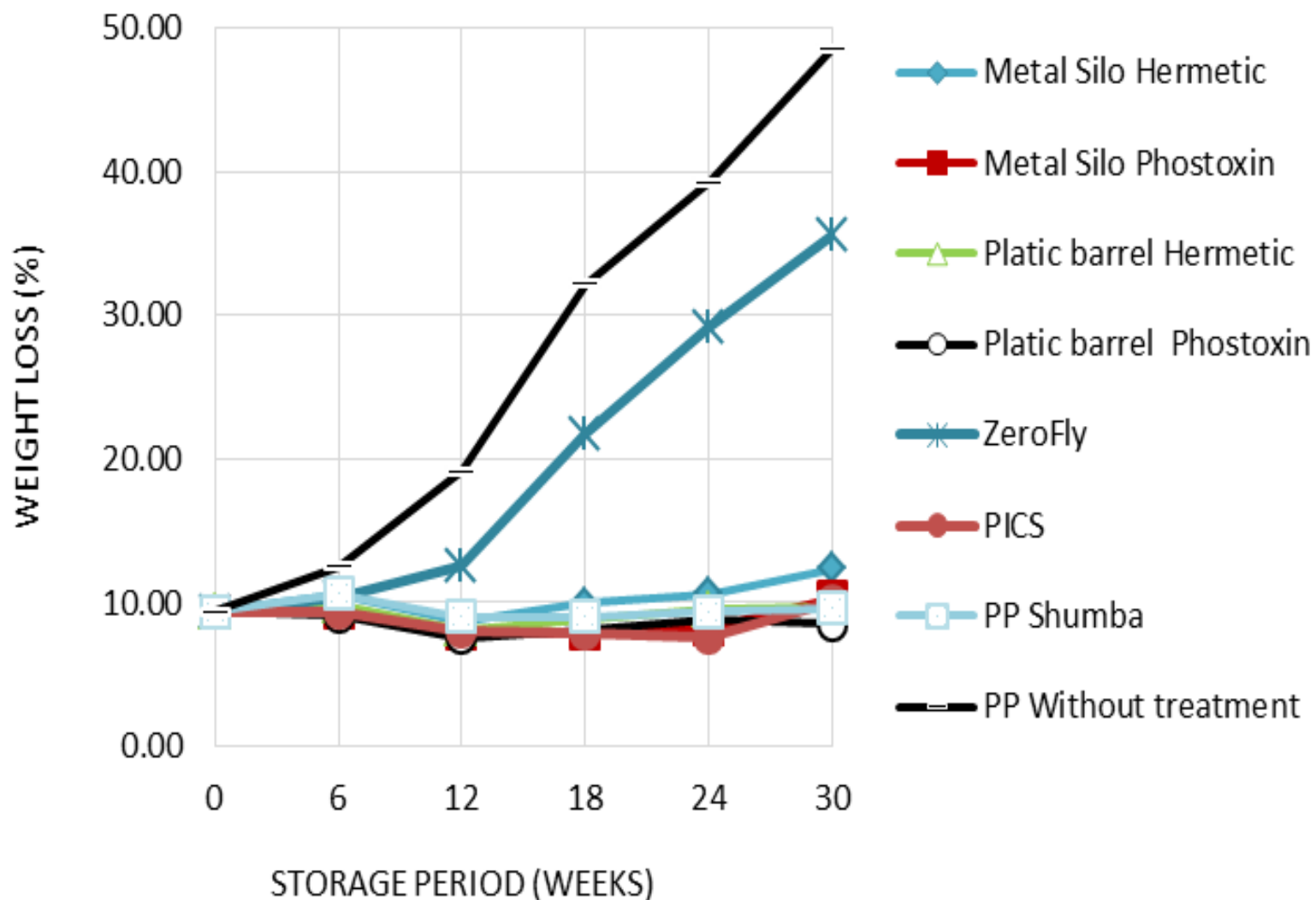
Multiple field trials established to compare traditional storage techniques with improved ones in farmers' stores and aggregation centers



Percent damaged grains at 30 week storage



WEIGHT LOSS



Observation: Even improved technologies perform differently

Outcome: Best-best technologies were identified/ generated with farmers participation

Drying Technology

Problems addressed:

Challenge of **unhygienic**, **slow** drying

- ineffective PH handling operations such as shelling and winnowing.
- Food losses >> spillage, attacks by birds, small animals, rodents, insect infestations.
- Contaminations >> soil, fungi, and pesticide residues that affect quality and safety.
- Fungal contaminations continue in storage.

Technology: Drying on Collapsible dryer cases (CDC)

- A low-cost solution for safe, effective and convenient drying of a vast range of agricultural commodities
- Made of woven coated polyethylene (PE)



Benefit: Faster, safer and protected drying

Technology: Mechanical grain threshers

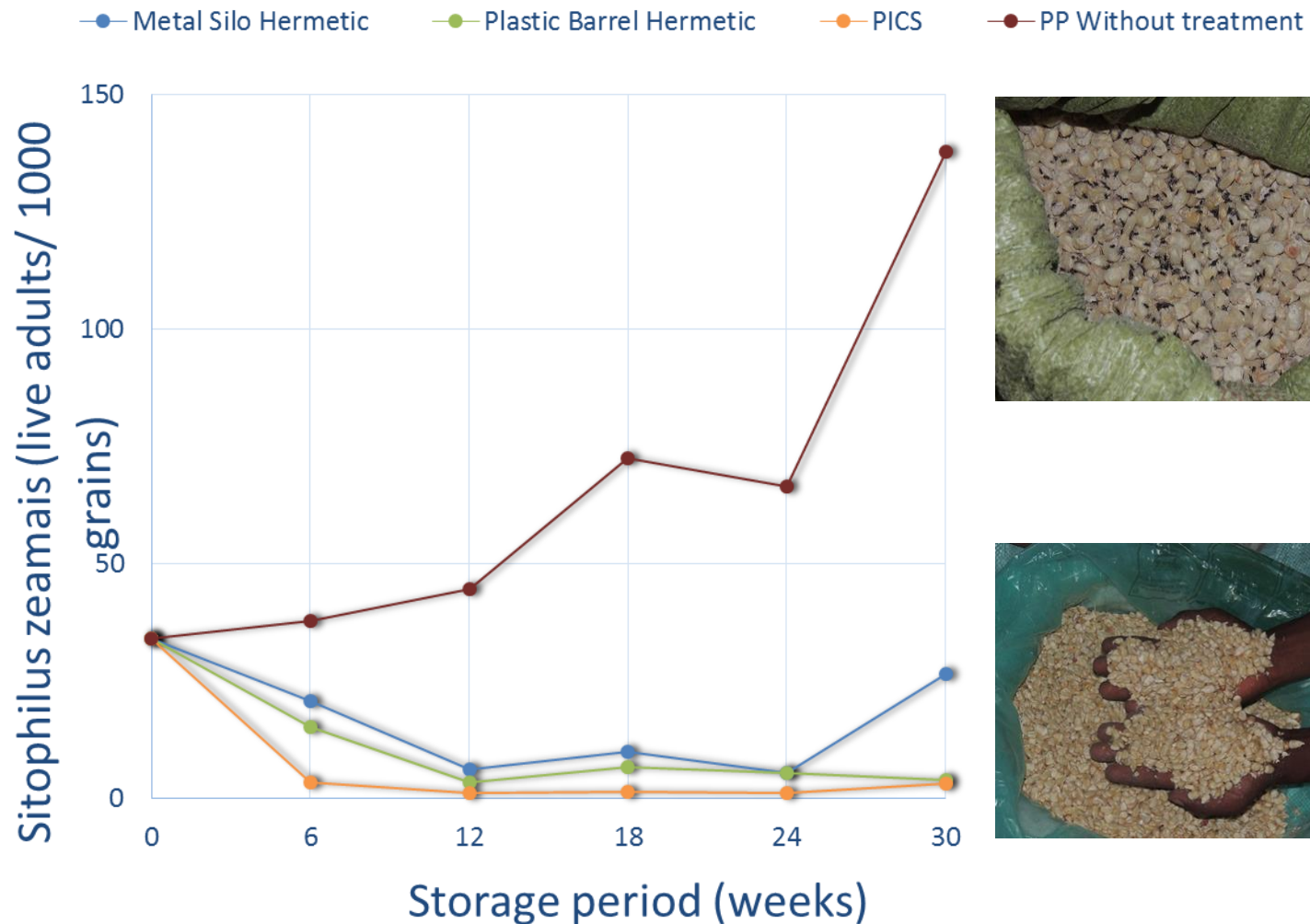
- 4.0 hp diesel engine model:
- Time efficiency: 1.45 -1.74 h/ 1000 kg grain
- Shelling efficiency: 97%
- Fuel efficiency: 0.42 L diesel/ ton;
- 0.4 US\$/ton



Benefits:

- Save time for women for other agricultural/ HH activities;
- Lessen drudgery associated with manual shelling >> marketing;
- Assures improved grain quality >> access to markets where grain standards apply;
- Helps farmers to store clean grain and less prone to deterioration.

Technology: Air-tight storage



- **Subsistence farmers:** Store for year-round HH food supply.
 - losses by more than 90%; more food available for 2-3 months
- **Market-oriented farmers:** Store so as to sell when prices improve, earn more income.
 - Gross returns of up TZS 25 000/ 100kg after 6 month.

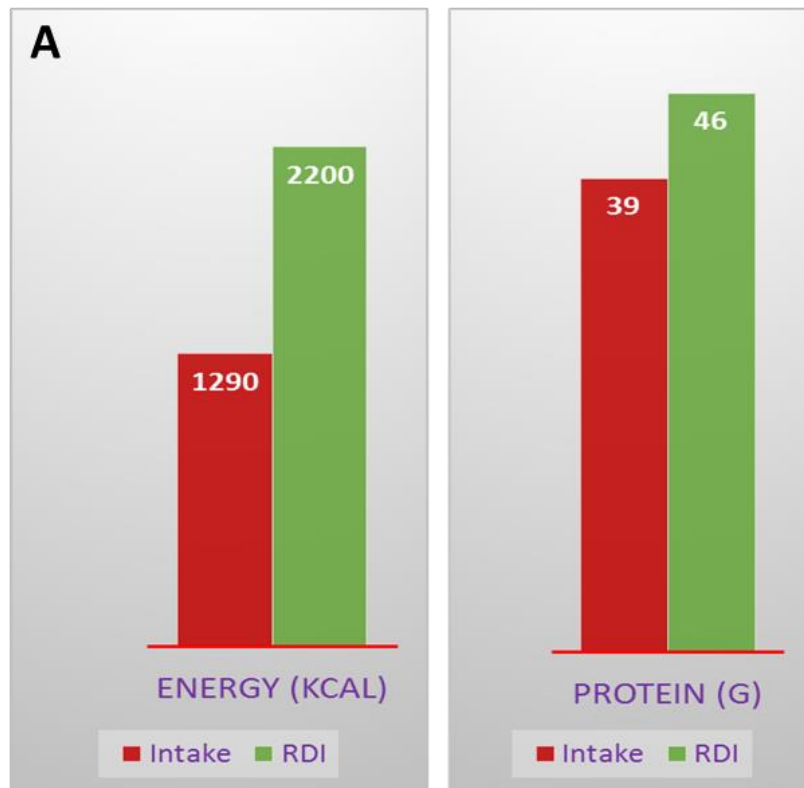


Study results:

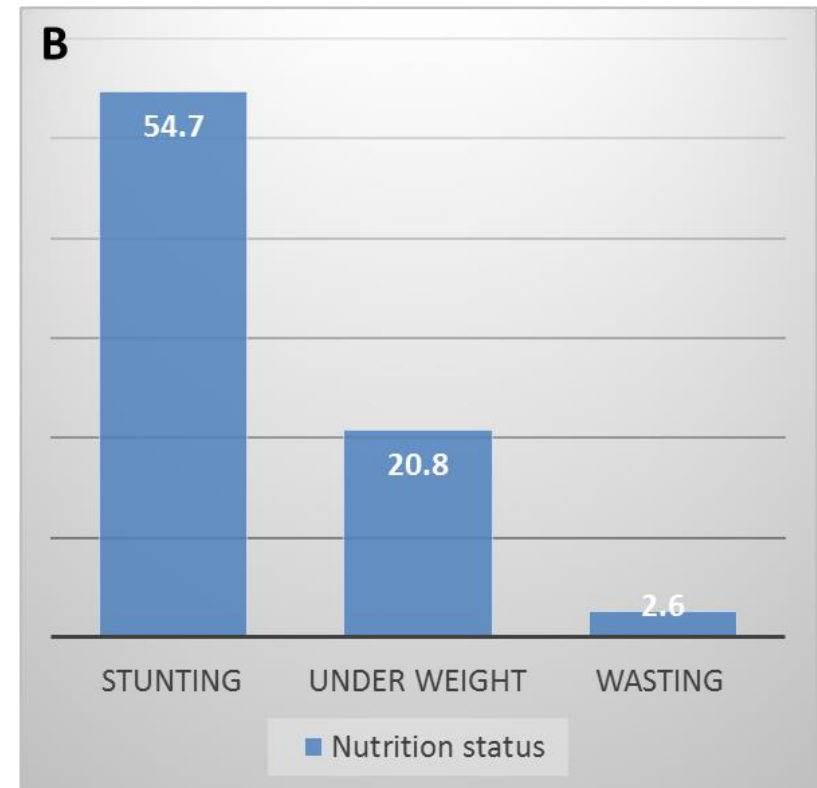
Prevalence of food insecurity among households Babati district , 2014

<u>Per capita dietary energy intake less than 2200 kcal?</u>	<u>n</u>	<u>%</u>
Yes	305	86.4
No	48	13.6
Total	353	100.0
<u>Household headship</u>		
Male headed households		
Food insecure (Less than 2200Kcal/day)	265	85.8
Food secure (Equal to or more than 2200Kcal/day)	44	14.2
Total	309	100.0
Female headed households		
Food insecure (Less than 2200Kcal/day)	40	90.9
Foods secure (Equal to or more than 2200Kcal/day)	4	9.1
Total	44	100.0

Study results:



Adults: Low energy and protein intake



Children 2-5 years: Poor nutritional status

Energy-protein malnutrition among children and adults

Conclusions:

- Food insecurity and inadequate nutrition rampant among many households

Intervention

- The training of community service providers on how to utilize the available local crops to come up with nutrient dense foods.



- Integrated approach towards postharvest management
- i) At farm level operations
- ii) Households to handle, store, process and prepare food (better nutrition at household level)
- iii) Processing –the target is to empower farmers and youth to participate in value addition activities.

The question of cost vs benefit is important to farmers

- HELVETAS
- NAFKA
- Mtandao wa Vikundi vya Wakulima, Tanzania (MVIWATA)
- St. Johns University of Tanzania
- A to Z Textile Mills Ltd
- District Agricultural Departments
- Poly Machinery Co. LTD.
- Pee Pee (Tanzania) Ltd Tanga
- University of Dodoma

Thank you