A Successful Extension Model with Smallholder Farmers

A Side Event at the 2015 World Food Prize/Borlaug Dialogue

VALUE-ADDITION, AGRO-ENTERPRISES, PARTNERSHIPS & MARKET ACCESS

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Theme 2: Postharvest and Agro-processing (PHAP) Extension

Constraints:

- Labor intensive

  Labor requirement: ±217 labor-hrs/ha

- High postharvest losses

  Cassava: ± 45%
  harvesting & processing – 36%
  Cereals, Grains, Legumes: ± 30%
  harvesting & processing – 23%

- Poor product quality
- Limited utilization of crops
- Lack of storage structures
- Poor management
  - Lack of appropriate tools & equipment

The SAA Agro-processing (SAA-AP) Project

- 1994: SAA - IITA Postharvest Development Project
- NARs, NGOs in Ghana & Benin
- Identify, adapt and disseminate appropriate technologies, particularly for women agro-processors
- Build-up effective partnerships
- Establish agro-processing support mechanism

improve rural livelihood

Outcomes

- Adoption rate increasing
- Service providers available

- Improve product quality
- Increase income

- R & E linkage established

Traditional Process

Family-based Processing

Improved Process

Commercial Scale Processing

i.witness:

- GRATE President (Benin)

i.witness:

- Mr. THRESHER (Ethiopia)

Pillars of the Extended Postharvest & Agro-processing

Postharvest Handling & Storage	Value Adding Enterprises	Manufacturing/ Construction
• Harvesting • Threshing/ Shelling • Drying • Storage/Grain Protection • Transportation	• Off-farm processing Activities • Individual Service Providers • Agro-processing groups	• Postharvest Handling Equip • Processing Equip • Drying and Storage Facilities • Repair & maintenance
Constraints: - High losses - Labor intensive - Poor quality - Low capacity - Lack of infrastructure	Constraints: -Lack knowledge on business development and management -High investment -Raw material supply -Reliable markets	Constraints: - Availability - Capital Intensive - Low technical skills - R&M Services, - Spareparts

PHAP Goal and Objectives (2012-2016)

GOAL	**A larger proportion of the economic benefits inherent in African food value chains are being captured by smallholder farmers**
Overall Objective	To improve the postharvest handling, storage and processing of agricultural produce to reduce losses in order to increase income and improve the livelihoods of smallholder farmers and agro-processors

Implementation Strategies

- RE-assess needs and identify opportunities in the postharvest sub-sector of the value chain
- Source, verify, adapt and package appropriate value-adding postharvest handling, processing and storage options
- Conduct field demonstrations
- Establish Postharvest Extension and Learning Platforms (PHELP)
- Develop agro-processing enterprises, especially with women and youth
- Facilitate and conduct trainings
- Promote private service providers
- Develop and strengthen partnerships

- **PHELP** showcases value-adding technological options & their associated benefits to facilitate adoption

- Venue for training extension partners, producers (farmers, agro-processors), other stakeholders
- Operate under actual circumstances which affect efficiency, profitability, management
- Source of information and feedback to fine-tune technologies
- Learning platform for scaling up

Promoting Agro-processing Enterprises

- Identifying enterprise with women/ groups
- Packaging the right technological mix
- Training: how to process good quality products including food safety, personal & environmental hygiene, proper packaging, labeling

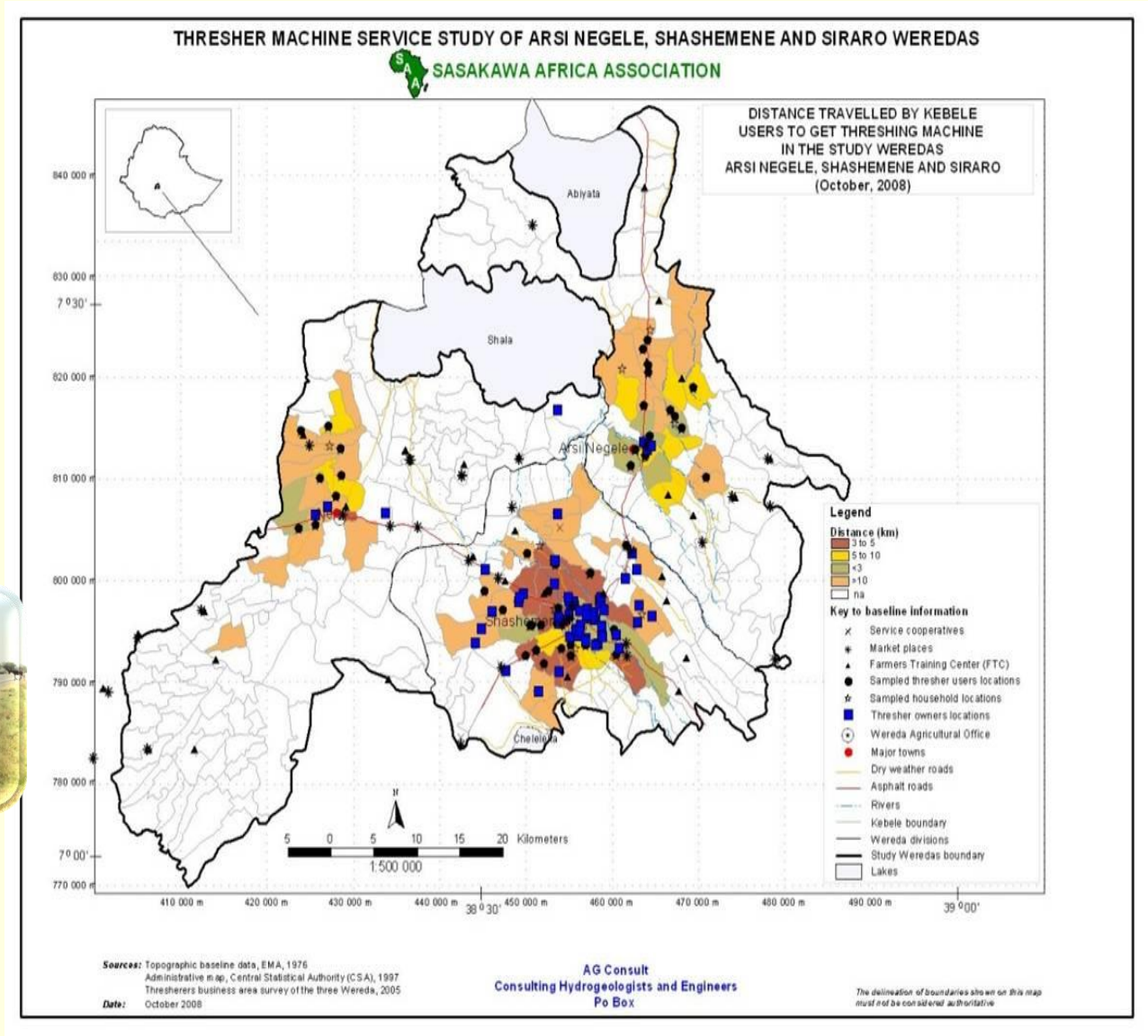
- Literacy Program
- Group dynamics/ management
- Linking to markets
- Coaching on product promotion

Promoting private service providers

- Crops are processed timely

- Reaching farmers and processors in their farms and homesteads

- Teff threshing service provider in Ethiopia

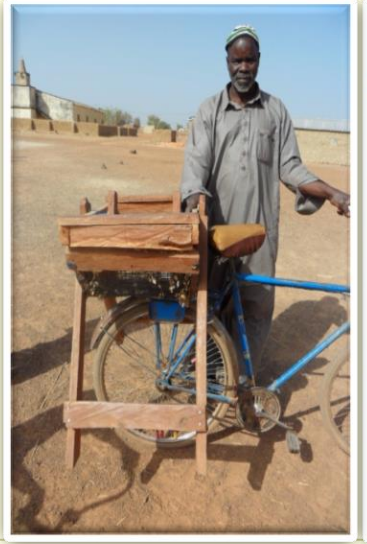


- Maize shelling and rice processing service providers in Nigeria

- Service Providers in Uganda (Maize Shelling)



- Service Providers in Mali (shelling groundnuts; milling rice & fonyo)



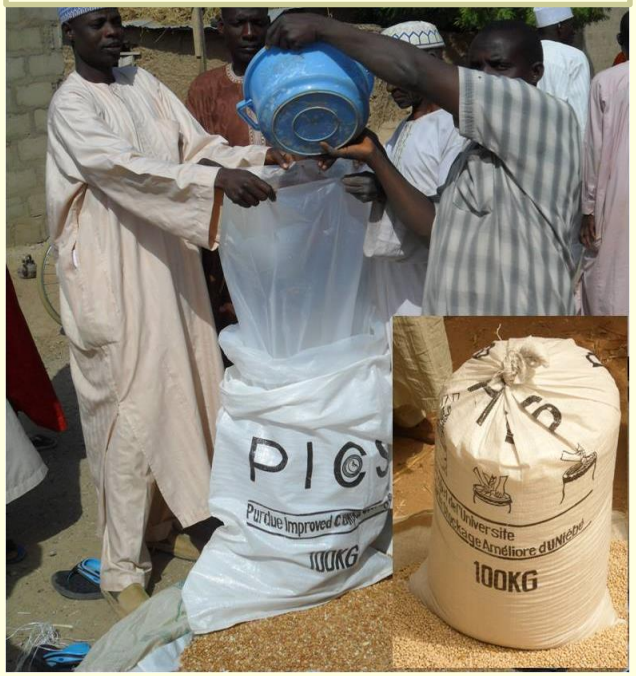
❑ Promoting Improved Storage Facilities & Management

Constraints:

- Stored products using traditional methods are infested with insects even before 30 days
- Quality and quantity of stored products are diminished; Losses in storage can be as high as 23%
- Improper use of chemical treatments can be life threatening

Ethiopia: Metal silo

Nigeria: PICS bags



Mali:
Use of palettes to hold stored bagged grains

Uganda: Sealed plastic tanks/ buckets

Training

1. Development of improved postharvest handling and storage (desirable features)
2. Manufacturing , servicing, operation and management of PHAP technologies
3. Improved traditional processing; and development of new products
4. Quality control and food safety
5. *Product packaging, branding, market promotion*
6. *Agro-processing enterprise management*
7. *Group dynamics and management*

➢ *Field tours and exchange visits*

Collaboration and Partnerships

- Build alliance
- Multi-lateral information exchanges
- Promote sharing of scarce resources

Theme 3: Public-Private Partnerships, & Market Access (PPP & MA)

Background

- The dynamic input-assisted crop demonstrations being established by SG 2000 build demand for inputs among smallholder farmers
- Over 15 years, the development of village-level input supply system was promoted by SG 2000 through ●Private entrepreneurs ●Farmers' organizations ●Local savings and loan associations ●Local dealers to supply input
- Scheme: SG 2000 link participating farmers to a lending bank; farmer is provided loan to repay after harvest. This ran fairly successfully for 5-6 years when SG 2000 provided active monitoring and follow-up. System broke down because of very high transaction of ordering and distributing the inputs and processing requests, and growing loan defaults

- The increased use of inputs however, helped to develop input outlets at the village level even though these enterprises operate primarily on a cash and carry basis

  In Uganda, the development of the stockists' network in the villages is regarded as one of the most significant contributions of SAA/SG 2000 to Ugandan farmers

- Due to the scale of their operations, farmers require effective policies and institutions to support them
- Farmer organizations provide the economies of scale that help reduce transaction costs and increase profitability along the food and agriculture value chain
- SAA/SG 2000 has been active in attempting to link group of farmers to input dealers and more formal credit source
- SG 2000 also championed the packaging of improved seed and fertilizers in smaller lots

PPP & MA Theme Objectives (2012-2016)

Overall Objective	**Establish public-private partnerships in support of extension delivery and smallholder agricultural development through access to more profitable markets**
Specific Objectives	▪ Develop/Promote revenue-generating models to make smallholder agricultural extension /advisory services more scalable and sustainable
	▪ Support the emergence and development of Farmer Organizations (FOs) which are capable of securing the needed information, inputs, credit and access markets
	▪ Support partner FOs to engage in viable business opportunities in partnership with other VC actors

Outputs

- Strengthening and supporting farmers and their organizations

FOs linked to value chain actors	453 FOs
Facilitated Collective marketing by FOs	37,226 MT
Trained FOs on farm productivity and income improvement	133 training sessions
	8,856 farmers
Trained FOs on financial and credit management	105 Trainees (FOs)
Trained FOs to supply market needs and standards	91 Trainees (FOs)
Trained of Women and Youth groups -Agri-business, Governance and Entrepreneurships	380 trainees
Promoting of VSLA (Village Savings & Loan Associations)	1,074 VSLA established and trained
Facilitated FOs access to loans/credit	954 FOs accessing credit

- Strengthening and supporting other value chain actors

Support and strengthen Agro-dealers: Trained on agri-business management (2012-2014)	398
Support and strengthen entrepreneurs: Trained on financial and credit management and Market Needs and Standards (201-2014)	246
Support and strengthen Commodity Associations (CAs): Number of CAs established and linked to markets and other VC actors (2012 -2014)	1,975

- Challenges

Some Indicators of Outcome

- Using multi-crop thresher is profitable
  - Operating at 45 days a year (for teff threshing alone) BCR is 2.68 in year 2 ; IRR = 61.7 %
  - Break even volume is 304 tons; PBP 2.5 years
  - The thresher can still be used for maize and beans after teff
- Private service providers earn income while providing necessary processing services to smallholder producers
  - *A young service provider in Ethiopia, for example, reported an income of more than Birr 100,000 (or approximately $5,000) in 2 months in 2014 providing threshing service to smallholder farmers*
  - CAT/CBF and input dealers in villages in Uganda now selling PHAP technologies in addition to farm inputs

- Agro-processing enterprises provide good quality food and income

In Ethiopia

- Women groups supported through the JPP1 project reported average annual income between Birr 650 – 7,400/year ($35-390) compared to NIL when processing spices alone
- Peanut butter processors got 41% net profit

In Nigeria

- Cassava processing enterprise by women group recorded a net profit to sales equivalent to 64%
- Women groups in Nigeria providing parboiling services and selling good quality rice to offices and supermarkets

- Scaling-up/out
  - Ethiopia
    - WFP provided 16 units of maize shellers and cleaners to Cooperative Unions (CUs) in 2012 and By end of 2014, WFP now works with 36 CUs and realized required procurement of maize. Farmers were able to deliver Grade 1 Standard grains required by WFP
    - ATA and partner agencies (ACDI-VOCA, TechnoServe) are promoting the use of mechanized threshing in the country
    - ATA and WFP: adopting SAA strategy to promote agro-processing for economic empowerment of women
      - ATA funded a 2-year project to support 4 groups in 4 regions from 2012-2014
      - WFP continuing funding support to capacitate participating CUs to supply P4P with good quality grains from 2010. The project is also enabling farmers to participate in competitive markets
      - SNNPR, farmers and traders are advocating the use of multi-crop thresher; Machine-threshed teff receive premium price

- On-farm storage management reduce postharvest losses due to insect infestation and maintain quality of the crop
  - Nigeria: Cowpea storage for 6 months in PICS (Purdue Improved Cowpea Storage) bags- sound beans, no live insects compared to highly infested cowpea in control (traditional)
  - Uganda: Maize stored in sealed plastic tanks over 1 year- no live insects compared to highly infested maize in control (traditional)
  - Ethiopia: Maize stored in metal silos over 1 year- no live insects compared to highly infested control (traditional)
  - Mali: Cowpea stored in PICS bags and plastic tanks were found insect-free after 6 months

Farmers are now buying and using hermetic storage facilities (PICS & SG Bags, Metal Silos and Plastic; tanks). Adoption rate being monitored.

In 2015- USAID/WFP in Uganda providing farmers with metal silos at subsidized costs

Our Strengths

- Sustained support from funding agencies & partners, and active participation of farmers & processors
- Appropriate technology options introduced
  - Gender-friendly
  - Equipment is used, reliable and people know how to operate/manage them
- Helping to provide sustainable livelihoods
  - Improved family welfare
  - Helps build up groups
  - Equipment is privately profitable
- Providing producers and service provider with important income

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Alliance for a Green Revolution in Africa

WFP World Food Programme

BILL & MELINDA GATES foundation

Conclusion

The value-chain extension strategy is assuring more profitable participation of smallholder producers in commercial activities along the value chain, thus resulting in …

- **Secured Food Supply**
- **Increased Income**
- **Improved Livelihood**

More Challenges Ahead

- Sustainability
- Instil sense of ownership
- Scaling-up/out good practices