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FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

ADVANCE

Gross margin
Data collection processes

ACDI VOCA
Expanding Opportunities Worldwide

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TechnoServe
BUSINESS SOLUTIONS TO POVERTY

Tamale, June 15-16, 2015

Definition

- Total estimated value of production – total inputs costs, result divided by hectares planted
- Estimation of production based on average price
- Average price obtained from the total actual sales amount/total quantity sold → USD
- If production through sales cycle covers 2 FY, report in the last FY
- Disaggregated by sex, crop
- Smallholder farmers: land area <= 5ha
- Input costs >=5%
- Exclude unpaid labor
- Cash paid only

Process

- Development of questionnaire – 1 per commodity
- Testing of questionnaire
- Sampling
- Training of enumerators (2 days)
- Data collection by interns/enumerators, supervised by staff
- Data cleaning analysis – by own staff
- Reporting – temporary data in Q1 and final data in Q4 of the following FY

Sampling

- Of beneficiaries
- Sample size big enough to allow disaggregation by sex within each of our 3 commodities → 6 sub population
- Size of sample of each subpopulation is based on 95% confidence interval, 5% of margin of error and response distribution
- http://www.raosoft.com/samplesize.html
- 10% provision for non response
- Random sampling selection within each subpopulation

Data collection – by internal staff and enumerators

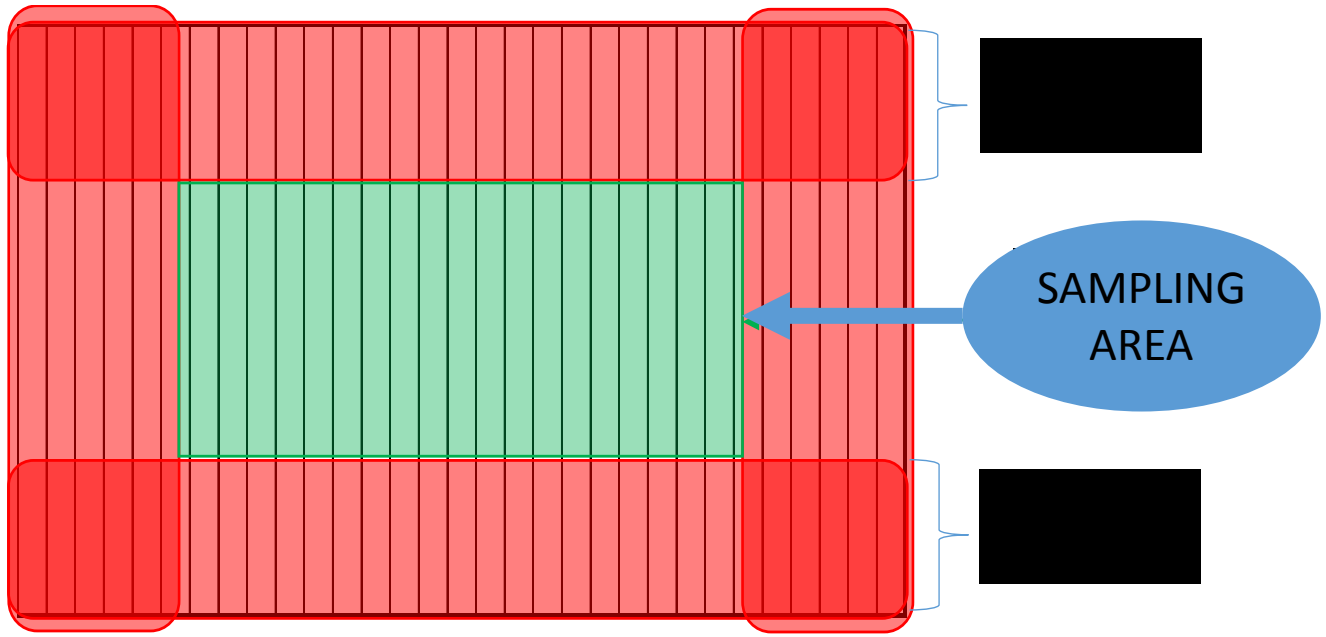
- Area planted
  - GPS and farmers estimates
  - Soon after farmer plants
- Input costs – in GHS
  - Systematic (seeds, fertilizers, pesticides, herbicides, bagging, insurance, loan interests, rent, transport, other paid labor etc.)
  - Soon after costs incurred: 2 times: after farmer plants and at harvest
- Production based on yield estimated via crop cut
- Sales and quantity sold:
  - Projected sale (production – expected consumption by prevailing market price)
  - Actual sale: after farmers sell (end of FY)

Crop cutting

- To estimate yield
- Based on a 1/1000 acre sample land
- The less homogenous the field, the more samples are to take
- Process:
  - Area demarcation
  - Harvest
  - Yield calculation

Crop cut for Maize

1. Demarcation before the plant reaches 30cm
2. Discard the 6 first rows to the left and first 6 rows to the right
3. Discard the first (front) and last (back) 5m of plants



Crop cut for Maize

4. Subtract the 12 rows discarded from the total number of rows
5. Choose randomly 1 to 2 numbers
6. The number chosen is the row to sample
7. Measure off a length of row equal to 1/1000th acre
   - To get row length: divide 4,046 by the row spacing (in m) and then divide that result by 1000 (e.g., [4,046/0.76m]/1000 = 5.30m
8. Harvest the demarcated area at 15% moisture content → otherwise adjustment
9. Shell the corn, clean it, and weight it
10. Calculate the yield

Crop cut for Rice

Same as for Maize except:

1. Height of crop is 15cm for demarcation
2. Discard the 20 first rows to the left and 20 first rows to the right

Crop cut for Soybean

Same as for Maize except:

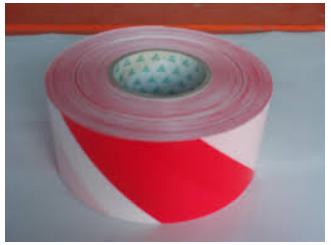
1. Height of crop is 10 cm for demarcation
2. Discard the 9 first rows to the left and 9 first rows to the right

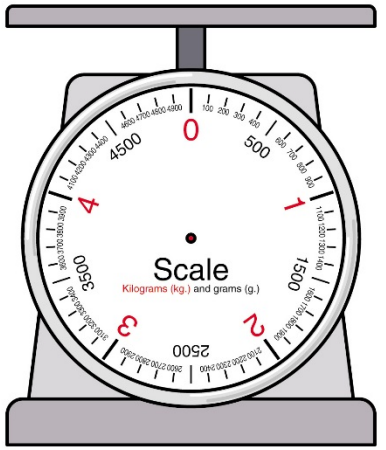
Crop cut of broadcast planted plot

Same as for row planted except:

1. Discard 5 meters in all sides of the plot
2. Measure the green area's length in m
3. Select a random number
4. Go to that x meter in the green area
5. Demarcate an area of 4.05 x 1 m

Crop cut materials/equipment





Data to collect/activity to conduct

Phase 1: After planting

- Crop cut area demarcation
- Area measurement – GPS → mapping
- Certain input costs (seeds, fertilizers, labor etc.)

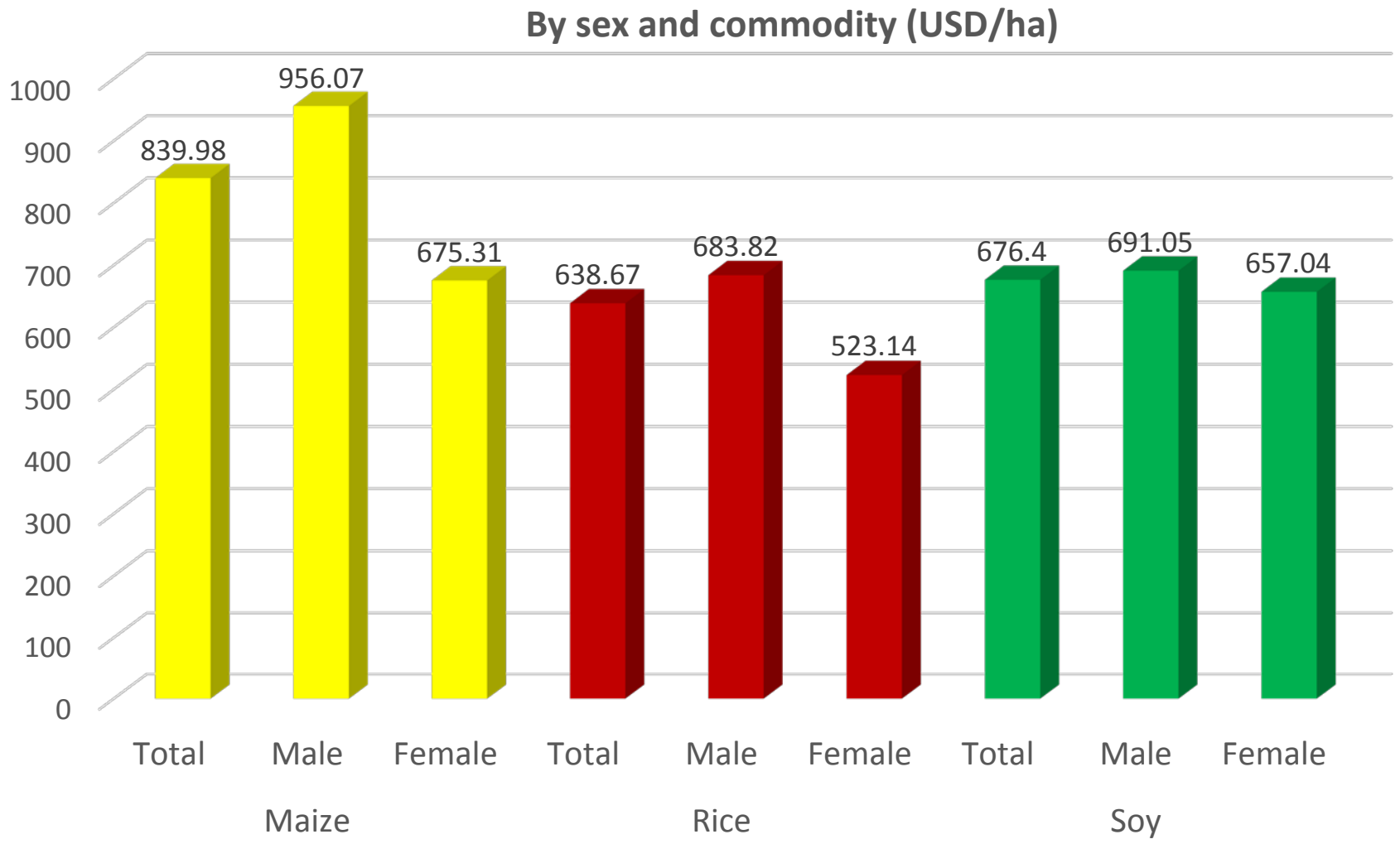
Phase 2: Before/At harvest

- Harvest on area demarcated
- Remaining inputs costs (labor, herbicides, pesticides etc.)
- Projected sales

Phase 3: After sales

- Sales
- Remaining inputs costs (bagging, harvesting, transport, interests, etc.)

FY14 Gross margin values



FY14 Gross margin survey

- 1200 surveyed (46% female)
- Collection: August to December
- Involved 40+ people
- Improved technologies and management practices data collected at same time
- Cost: $30,000+

+ and - of crop cut

+ Easier to do – measuring a sample
+ More control on quality and precision
+ No response error/bias
- Risk of sampling error
- Risk of measurement bias and error
- High time requirement compared with farmer estimates method

+ and – of gross margin

+ Estimate of return
+ Comparable across crops and areas
+ Helps assess and take decision
- Time requirement (duration and LOE)
- Only an estimate of return
- Many costs not considered
- Value of production NOT actual sale
- Limited assessment/indicator of effect/impact of activities
- 1 year delay in reporting: FY14 reported in FY15

Anything else?

Other indicators

- Technologies application - during GM survey phase 1 and 2
- Incremental sales: actual sales during the FY – survey towards the end of the FY