

# Returns to Research in Cassava and Sweet Potato

FSRP: Eric Crawford, Steven Haggblade

ZARI: Martin Chiona

FoDiS: Atushi Suzuki, Matias Ndhlovu

Objective: Evaluate the rate of return to past cassava and sweet potato research and extension in Zambia.

Data Requirements	Possible Sources
<b>BENEFITS: QUANTITATIVE</b>	
<p>1. Adoption of improved varieties</p> <ul style="list-style-type: none"> <li>• Times series of adoption rates starting in 1990</li> <li>• Ceiling rate (if any) and year reached</li> <li>• Dissaggregation by subzone/variety to extent feasible, consistent with (2) below</li> </ul>	<p><b>FSRP:</b> CFS 2009 has added detailed questions on sweet potato and cassava varieties; data already collected and being cleaned now</p>
<p>2. Yield advantage of improved varieties</p> <ul style="list-style-type: none"> <li>• Time series of area &amp; yield starting with 1990</li> <li>• Cassava belt vs. maize belt</li> <li>• Feasibility of disaggregation by subzone?</li> <li>• Feasibility of dissaggregation by variety?</li> <li>• What assumptions/evidence on yields of trad. vars. as reference point for yield gain?</li> <li>• Mean national yield (weighted average across subzones &amp; varieties if appropriate)</li> </ul>	<p><b>Chiona:</b> available data? supplementary field crop cuts in different zones?</p>
<p>3. Production series: area, yield and output of cassava and sweet potato (by zone?)</p> <ul style="list-style-type: none"> <li>• Time series from 1990</li> <li>• Zone = cassava belt; maize belt</li> <li>• Total area planted</li> <li>• Area planted with improved varieties (disaggregated to extent feasible, consistent with (2) above)</li> <li>• Area and yield of other crops (e.g., maize) displaced by improved c/sp varieties</li> </ul>	<p><b>FSRP:</b> MACO, FAO</p>
<p>4. Prices:</p> <ul style="list-style-type: none"> <li>• Nominal price series from 1990</li> <li>• Import parity price of maize—used for valuing the part of add'l c/sp prod. that substitutes for maize</li> <li>• CPI</li> <li>• Price elasticities of supply and demand</li> </ul>	<p><b>FSRP:</b> CSO consumption surveys &amp; price series</p>

<b>COSTS: QUANTITATIVE</b>	
5. Cost of research and extension programs <ul style="list-style-type: none"> <li>No need to break down by zone/variety</li> <li>Aggregation of costs from available sources</li> <li>Extrapolation from case studies?</li> </ul>	<b>Chiona:</b> summarize from project documents and ministry records
6. Cost of seed multiplication	<b>Chiona:</b> summarize from project documents and ministry records
7. Cost of distribution efforts Cassava                      Sweet potato Cassava belt Maize belt	<b>FoDiS/Chiona/FSRP:</b> a. inventory dissemination efforts b. select a handful for qualitative interviews with management and farmers.
8. Incremental cost to farmers of adopting approved varieties <ul style="list-style-type: none"> <li>Time series from 1990</li> <li>Costs of seed, land preparation, irrigation, fencing, other</li> </ul>	<b>FoDiS</b>
9. Other costs <ul style="list-style-type: none"> <li>Economic value of maize production inputs (to be netted out in calculating the value of maize output displaced by add'l c/sp output)</li> </ul>	
<b>QUALITATIVE BENEFITS AND COSTS</b>	
10. Farm household assessment of pros and cons of new cassava and sweet potato varieties <ul style="list-style-type: none"> <li>what varieties do they prefer? Why?</li> <li>yield differences; time to maturity; keeping time in ground</li> <li>storage properties, in-ground keeping quality and duration</li> <li>cooking quality</li> <li>leaves: quality, taste, market value, home consumption</li> <li>nutrition</li> <li>food security implications</li> </ul>	<b>FoDiS/Chiona/FSRP:</b> Structured interviews with farm households from different zones.  Cassava                      Sweet potato Cassava belt Maize belt