

Insights from the Analysis of Rural Household Income in Mozambique



A Presentation at the EC Delegation.
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Maputo, Mozambique

Strengthening Mozambican Capacity in the Ministry of Agriculture for Agricultural Productivity Growth, Policy Analysis, and Poverty Reduction

1. Market Information (1990)
2. Policy Analysis (1992)
3. National Rural Household Surveys (1995)*
4. Socio-economics in Agr. Research (2004)



National Agriculture Income Surveys and Analysis Presented

- TIAs
 - 1995-96 (TIA 96) 80 districts
 - 2001-02 (TIA 02) 80 districts
 - 2002-03 (TIA 03) 80 districts
 - 2004-05 (TIA 05) Panel 96 districts
- Analysis
 - Income comparison of TIAs 96 and 02
 - Determinants of TIA 02

Rapid economic recovery but a long way to go... Consumption Poverty and Income Poverty

- Consumption Expenditure
 - First national poverty reduction strategy: rural poverty drops from 71% to 55% between 1996 and 2002
 - 67% of rural household expenditure on food
 - Poverty lines based on caloric adequacy and as low as US\$0.25/person/day
 - Lack of agricultural correlates with consumption expenditure

Rapid economic recovery but a long way to go... Consumption Poverty and Income Poverty (cont.)

•Income

- About 50% of the value of consumption expenditure
 - Use of producer rather than retail prices
 - Memory bias in a single-interview survey
- Emphasis not on absolutes but on relatives over households and over time
- Potential for consideration of linkages to agricultural development
- Income poverty declines from 88% to 82% between 1996 and 2002
- Decline in income poverty not associated with the decrease in consumption poverty at the provincial level

Income Expansion: Percent Change in Mean / Median Household Income

Income/AE by Income Quintile, 1996-2002 (2002 contos)

Quintiles of Net HH Income/AE	Mean Total Net HH Income/AE,		Median Total Net HH Income/AE,	
	2002	% change, 1996-2002	2002	% change, 1996-2002
1 - low	240	53%	262	56%
2	606	35%	607	37%
3 - mid	1,021	30%	1,006	29%
4	1,786	34%	1,728	30%
5 - high	5,793	85%	4,095	56%
Total	1,890	61%	1,006	29%

Asset Deepening: Household Characteristics by Income Quintile, Mozambique, 1996-2002 (means and %)

Quintiles of Net HH	Education of HH Head (yrs)		Owns Goat/Sheep		Owns Bicycle	
	1996	2002	1996	2002	1996	2002
1 - low	1.6	1.8	15%	23%	3%	12%
2	1.7	1.8	20%	27%	5%	16%
3 - mid	1.7	1.9	22%	26%	6%	22%
4	2.0	2.2	19%	26%	9%	30%
5 - high	2.3	3.4	22%	35%	12%	35%
Total	1.9	2.2	20%	27%	7%	23%

Sources of income:

❖ Net crop income	67%
Value of production consumed	55%
Value of production sold	12%
❖ Sales of livestock	3%
❖ Off-farm: Self-employment	15%
❖ Off-farm: Salary	10%
❖ Remittances	5%

Participation in Principal Crops and Median Household Production per AE, Mozambique, 1996-2002-2003

Crop	TIA 1996		TIA 2002		TIA 2003		% change Median Production/AE	
	% HH growing	Median Production/AE	% HH growing	Median Production/AE	% HH growing	Median Production/AE	1996-02	1996-03
Maize	78%	92.8	81%	79.8	80%	80.3	-14%	-13%
Rice	24%	27.2	34%	17.3	26%	25.8	-36%	-5%
All Grains	90%	112.8	92%	88.5	90%	96.2	-22%	-15%
Groundnuts	41%	22.3	52%	10.1	46%	10.9	-55%	-51%
Cowpeas	33%	13.0	56%	6.7	53%	7.2	-49%	-45%
All Pulses	65%	29.5	82%	19.1	77%	18.9	-35%	-36%
Cotton	5%	44.6	7%	112.8	5%	102.6	153%	130%
Tobacco	2%	16.7	4%	38.5	3%	75.0	131%	350%
Cashew	29%	21.4	41%	10.0	27%	8.6	-53%	-60%

Relative use of improved inputs in Mozambique during national agricultural survey years in the medium and small farm sectors

Year and Data Source	Inputs(% of farmers using)		
	Inorganic fertilizer	Pesticides	Animal traction
1996 TIA	1	4	7
2000 Census	3	5	11
2002 TIA	4	5	11
2003 TIA	3	5	11

Perception of change in economic condition (TIA 02)

Perception	Household Income (US\$)	Standard Error (US\$)	Number of observations
Improved	392	32	1540
No Change	284	19	1320
Worsened	217	14	1941

Gender

Head of household	Frequency	Income	Poverty ('+' poorer)	Perception ('+' better or '-' worse)
Men	74%	--	--	--
Women: not widows	15%	-14%**	+0.30**	-0.16**
Women: widows	10%	-30%**	+0.65**	-0.28**

Education

Years of schooling	Frequency	Income	Poverty (+' poorer)	Perception (+' better or '-' worse)
Illiterate	42%	--	--	--
1 – 2 Years	17%	1%	-0.01	+0.03
3 – 4 Years	26%	12%**	-0.05**	+0.13**
5 Years or more	15%	31%**	-0.12**	+0.14*

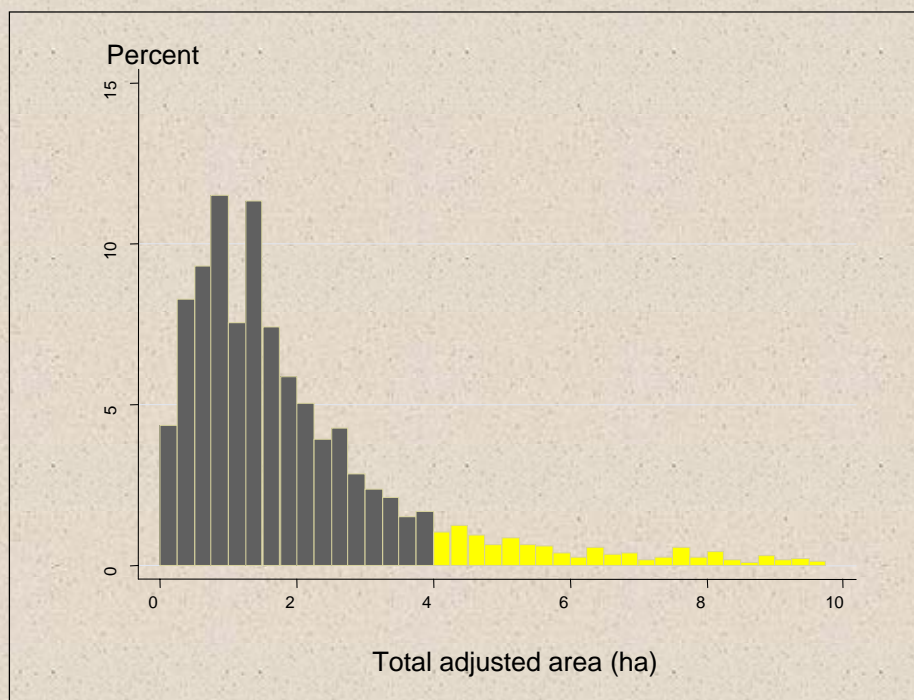
Returns to Education

Years of schooling	Net crop income	Livestock sales	Self - employ ment	Off-farm: Salary
1 – 2 Years	-0.03	+9.70	-18.9	136.10
3 – 4 Years	+0.04	-13.4	120.7	312.21*
5 Years or more	-0.02	-3.12	271.5*	1004.84**

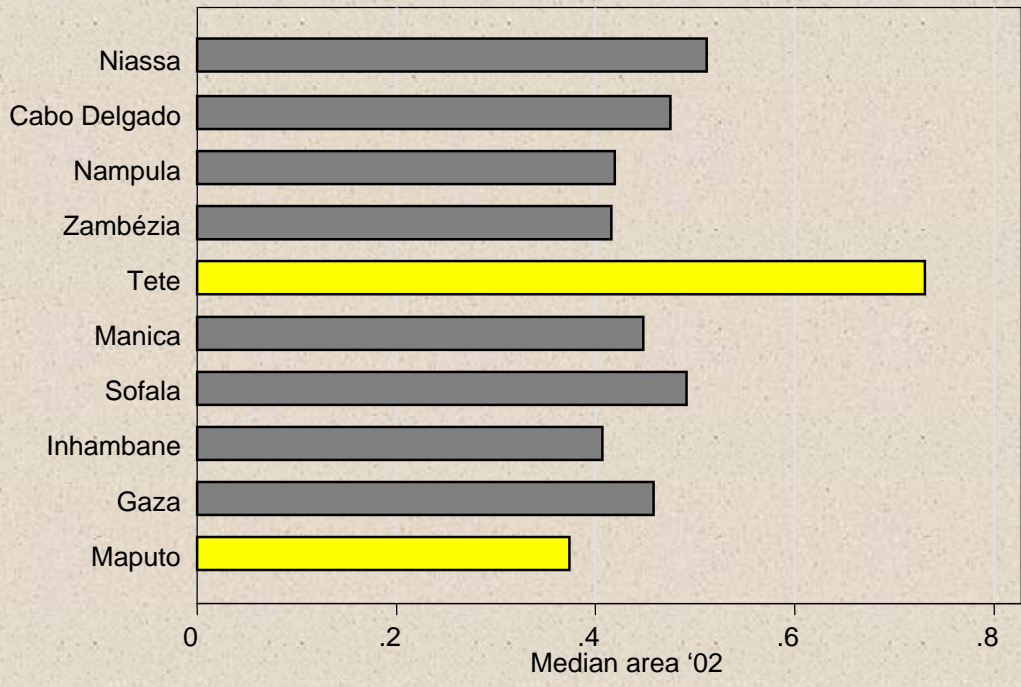
Farm Size

Hectares	Frequency	Income	Poverty (+' poorer)	Perception (+' better or '-' worse)
< 0.75	27%	--	--	--
0.75 – 1.745	41%	20%**	-0.05**	+0.09
1.75 – 4.99	29%	34%**	-0.09**	-0.08
> 5.00	3%	46%**	-0.18**	+0.01

Distribution of Farm Size



Lack of area expansion: Cultivated area per adult equivalent (ha)



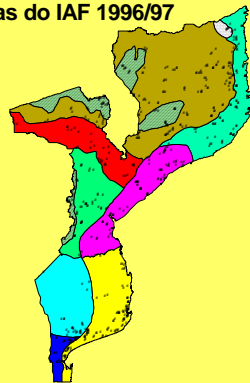
Tree crops

Trees	Frequency	Income	Poverty ('+' poorer)	Perception ('+' better or '-' worse)
No cashews	67%	--	--	--
1 – 59 cashews	32%	3%*	-0.01	-0.09*
> 60 cashews	5%	13%**	-0.05*	-0.24**
No coconuts	80%	--	--	--
1 – 19 coconuts	13%	6%	0.00	+0.06
>20 coconuts	7%	27%**	-0.11**	+0.03

Livestock

Livestock type	Frequency	Income	Poverty ('+' poorer)	Perception ('+' better or '-' worse)
No cattle	87%	--	--	--
1 – 9 head	5%	11%	-0.03	+0.06
> 10 head	8%	47%**	-0.12**	+0.29**
No goats	64%	--	--	--
1 – 19 goats	32%	2%	0.00	+0.06
> 20 goats	4%	47%**	-0.05	+0.07
No chickens	32%	--	--	--
1 – 29 chickens	63%	9%**	-0.04**	+0.09**
> 30 chickens	5%	21%**	-0.11**	+0.36**

Zonas Agro-ecológicas do INIA
e as Aldeias do IAF 1996/97



Zonas Agro-ecológicas:

- Interior de Maputo e Sul de Gaza
- Costeira de sul de Save
- Centro Norte Gaza e Oeste de Inhambane
- Altitude média de Moçambique
- Baixa altitude de Sofala e Zambézia
- Semi-árida vale de Zambeze e sul de Tete
- Altitude média Norte
- Litoral costeiro Norte
- Norte interior de Cabo Delgado
- Alta altitude de Zambézia, Niassa, Angónia e Manica

Agroecologies

Agro-Ecologia	Frequency	Income	Poverty (+' poorer)	Perception (+' better or '-' worse)
SAT,Zambeze Valley, South Tete	10%	0%	-0.08	+0.15
Húmid SAT, mid- elevation North	22%	-43%**	0.00	+0.07
SAT, North- Central Coast	21%	+25%	+0.21	-0.09
Húmid SAT, high altitude North-Center	8%	+72%**	-0.13**	+0.48**

SAT = Semi-Arid Tropics

Conclusions..

- Positive income growth is observed between 1995/6 and 2001/2 for all income quintiles despite widespread lower rainfall....
 - Rapid diversification into off-farm income sources
 - Rapid crop diversification among crop types (cash crops, food staples, horticulture) as well as within crop types
 - High real crop prices

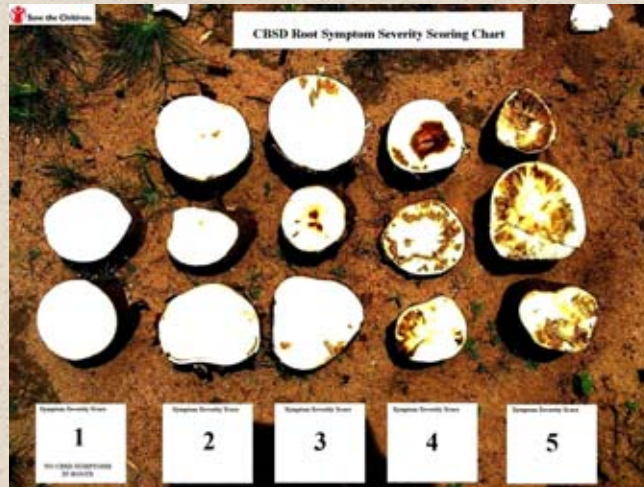
Conclusions.. (cont.)

- Observed only weakly pro-poor
 - Increased real food crop prices may have contributed more to increased crop income than labor productivity
 - Uptake of improved agricultural technologies is limited

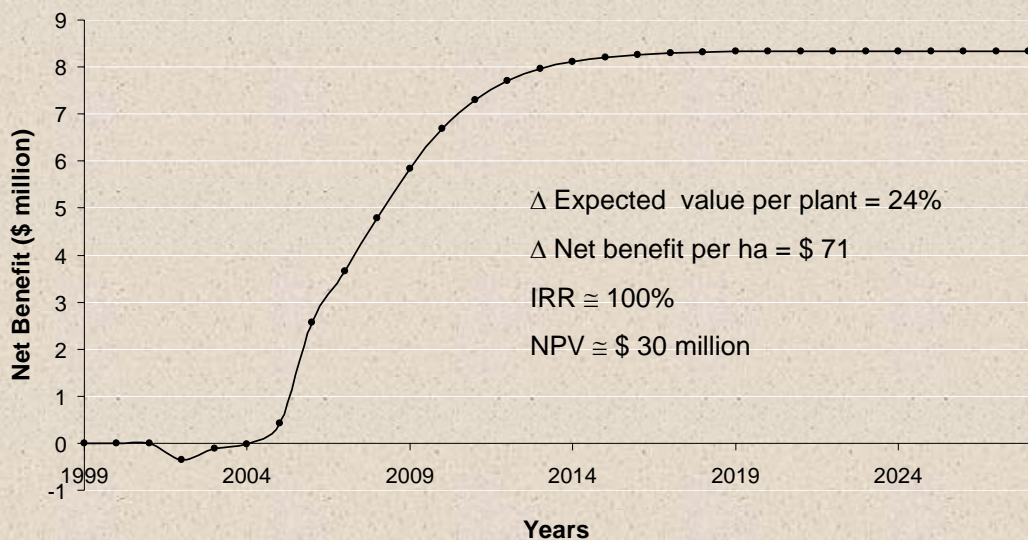
Implications for Agricultural Development

- Agricultural research (varieties)
- Input distribution
- Livestock deepening, particularly animal traction technologies
- Strengthening lagging sub-sectors
 - Cashews
 - Coconuts

Root rot damage classification from cassava brown streak disease



Economic impact of multiplication and distribution of Nikwaha on the Nampula Coast by Save the Children



THANK YOU