

## Food Security In Mozambique

MSU- FOOD SECURITY III/MZ PROJECT



Presentation to the  
MSU AgEcon Graduate Students Brown Bag  
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Presented  
by:

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## Evolution of MSU work in Mozambique

- 1990-97: *Relief to Development*
  - Establishment of market information system (SIMA)
  - Applied studies of smallholder farming, market evolution and performance
- 1998 – 2004: *Evidence-based policy analysis*
  - Establishment of a policy analysis unit in Ministry of Ag
  - National rural household income survey capacity
- 2004 to present: *Tackling low agric productivity*
  - Establishment of socio-economics capacity within agricultural research
  - Linkages between technology, policy and markets

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## MSU capacity building approach

- Promote an organizational culture that uses empirical information and analysis to inform decisions on programs and policies through:
  - Heavy investment in formal and in-service of new entrants (BS level) and graduate training
  - Working closely with decision makers to provide relevant and practical analysis
- Many challenges to sustainable capacity building:  
Including:
  - Changes in staffing and leadership
  - Difficulties in retaining trained staff
  - Shifting donor priorities and resources

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## Outline of the Rest of the Presentation

- Background on rural household income surveys (TIA)
- Food security and vulnerability context in Mozambique
- Changing patterns of rural household income and food security
- Implications for strategies to achieve food security

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## Objectives of this Presentation

To share key results from rural income analysis to inform the following questions:

- How much progress has been made in rural food security over the past decade?
- What changes have occurred in the composition of rural household income?
- Looking forward, what challenges remain and what kinds of investment are most relevant for improving food security in the medium term?

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# Trabalho de Inquérito Agrícola TIA

National Agricultural Survey

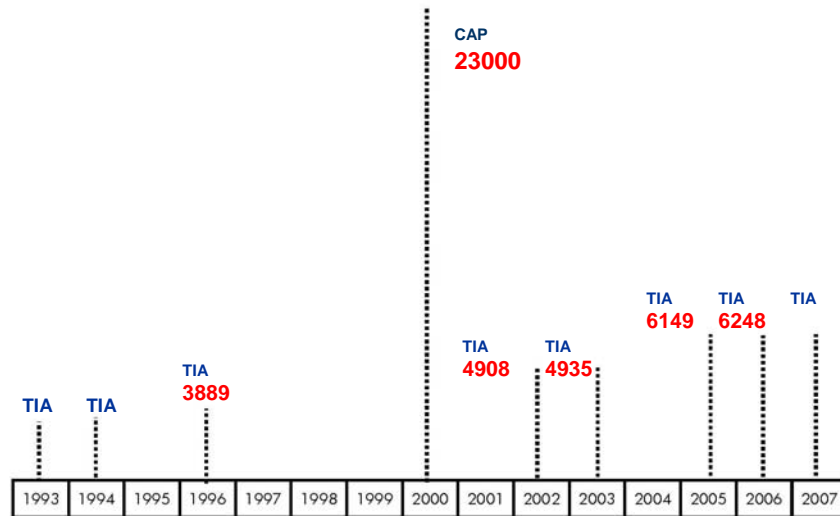
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## Content of TIA

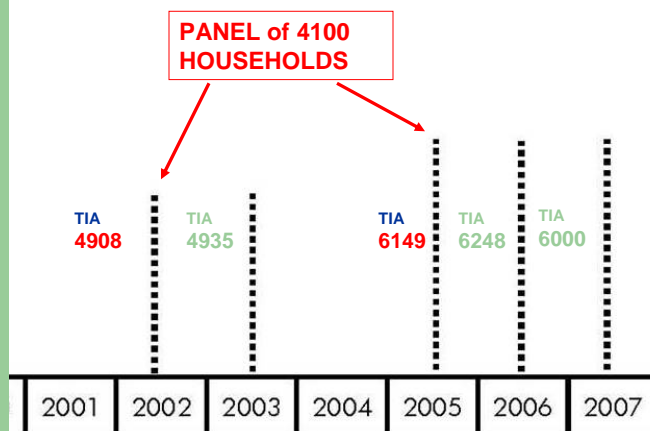
- Households demographics (labor)
- Agriculture production and marketing
- Land and other assets
- Livestock holdings
- Agricultural technology use
- Selected food security indicators
- Non-farm income sources (2002 and 2005)
- Adult mortality and morbidity (2002, 2003, and 2005)

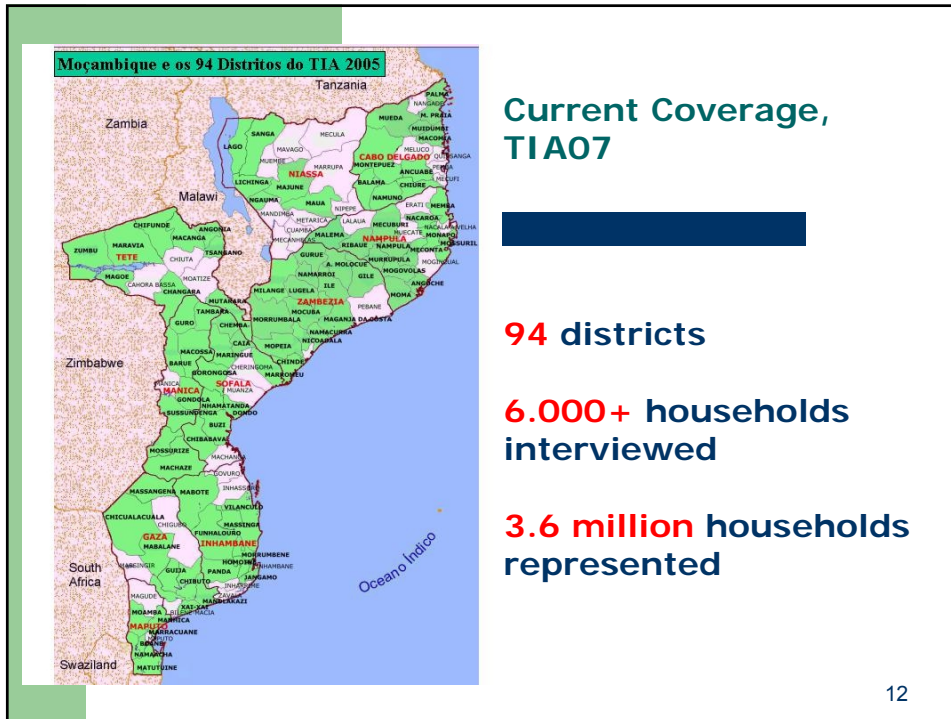
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## National surveys, Ministry of Agriculture, 1993-2007



## TIA 2002 and 2005 included detailed income modules





- ## TIA Data Users
- Government of Mozambique (MINAG, MPD, INE, SETSAN)
  - Donor community
  - USAID-funded PVOs (monitoring and evaluation)
  - NEPAD CAADP (via ReSAKSS)
  - Universities (Moz and elsewhere)
  - Local think tanks and consultants

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## Food Security in Mozambique

- Availability
- Access
- Utilization



- Food Security Outcome: Sufficient food during all periods to meet household and individual dietary needs for a productive and healthy life
- Vulnerability to food insecurity → inadequate nutrition

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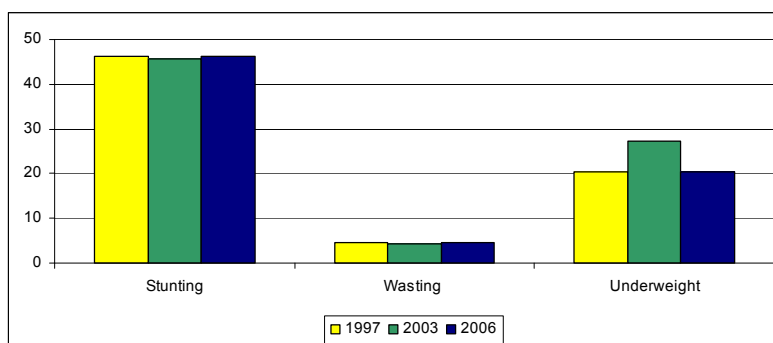
## Household Characteristics, 2005

Female headed Households (%)	27.3
Household size (number)	5.3
HH Head's years of education	2.0
Total landholding (has.)	2.0
Landholding per AE (has.)	0.6
<i>Percentage of Households using ...</i>	
Animal Traction	9%
Inorganic Fertilizers	4%
Improved food crop variety	7%
Credit from NGO, gov't., private, etc.	4%
<i>Percentage of Households owning ...</i>	
Cattle	5%
Poultry	59%
Radio	53%

Source: TIA, 2005

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## Nutritional indicators: Children 6-59 mos. 1997 and 2003



Note: 1997 figures are urban and rural combined. 2003 and 2006 Rural children only.

Source: ORC Macro, Nutrition of Young Children and Mothers in Mozambique, 2006 and SETSAN Vulnerability Baseline 2006.

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## Factors underlying slow progress in meeting food security goals

- Poor availability and access to food
  - Vulnerable household production systems
  - Lack of household income to purchase food
- Health and nutrition
  - Contaminated water supplies leading to diarrhea, cholera, parasites
  - Nutrition-related health problems
  - HIV/AIDS, malaria and other diseases

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## HIV/AIDS and Agriculture

- Impacts of adult deaths on rural households are varied
  - Death of male household head:
    - North/Center: crop income loss of 25%
    - South: non-farm income of 88%
  - Lower assets and lower labor availability in certain households
  - Lowered production of macronutrients in households with a recent male death
- Interventions need to vary according the constraints and opportunities of the affected households
- Is HIV/AIDS just a health problem? No funding for cross-cutting research (PEPFAR and IEHA gap)

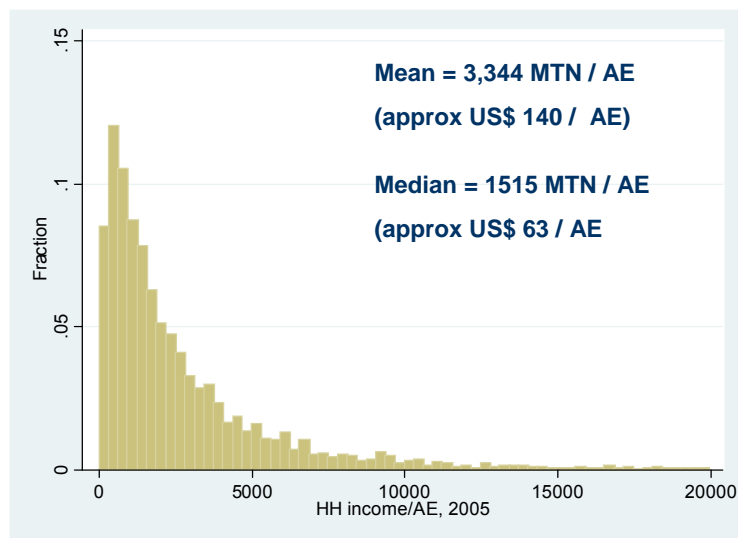
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## Distribution of Household Income per Adult equivalent (AE), 2005



## Change in mean household income per adult equivalent 1996-2002 and 2002-5 (%)

Y Quintile	1996-2002	2002-2005
1 (low)	63	-22
2	37	-12
3 (med)	31	-2
4	38	11
5 (high)	88	26
<b>TOTAL</b>	<b>65</b>	<b>15</b>

Source: TIA 96; TIA 02; TIA 05

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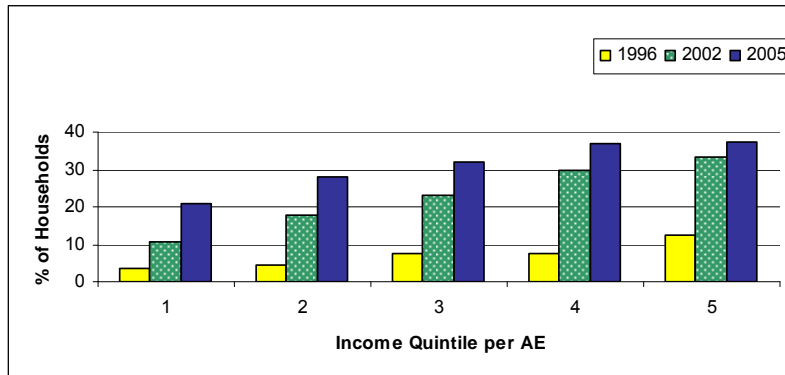
## Change (%) in median household income per adult equivalent 1996-2002 and 2002-5

Y Quintile	1996-2002	2002-2005
1 (low)	66	-25
2	39	-14
3 (med)	30	-1
4	37	11
5 (high)	59	17
<b>TOTAL</b>	<b>30</b>	<b>-1</b>

Source: TIA 96; TIA 02; TIA 05

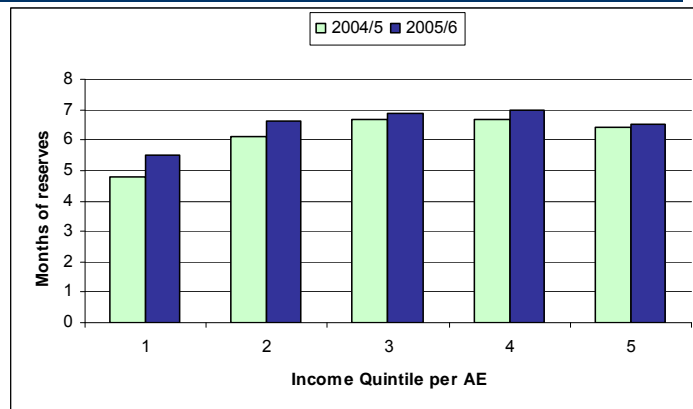
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## Bicycle Ownership 1996, 2002 and 2005



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## Months of household reserves of basic staple



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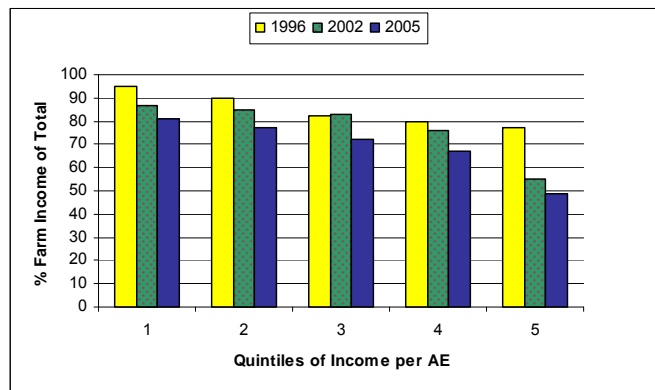
## Food Security and Incomes: Households Experiencing Hunger (percent)

Y Quintile	2004/5	2005/6
1 (low)	52	47
2	41	41
3 (med)	37	38
4	35	32
5 (high)	28	29
<b>TOTAL</b>	<b>39</b>	<b>37</b>

Note: 2004/5 quintiles reported income; 2005/6 quintiles predicted income

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## Share of farm income in total net household income (%)



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## Household participation in crop markets 2005

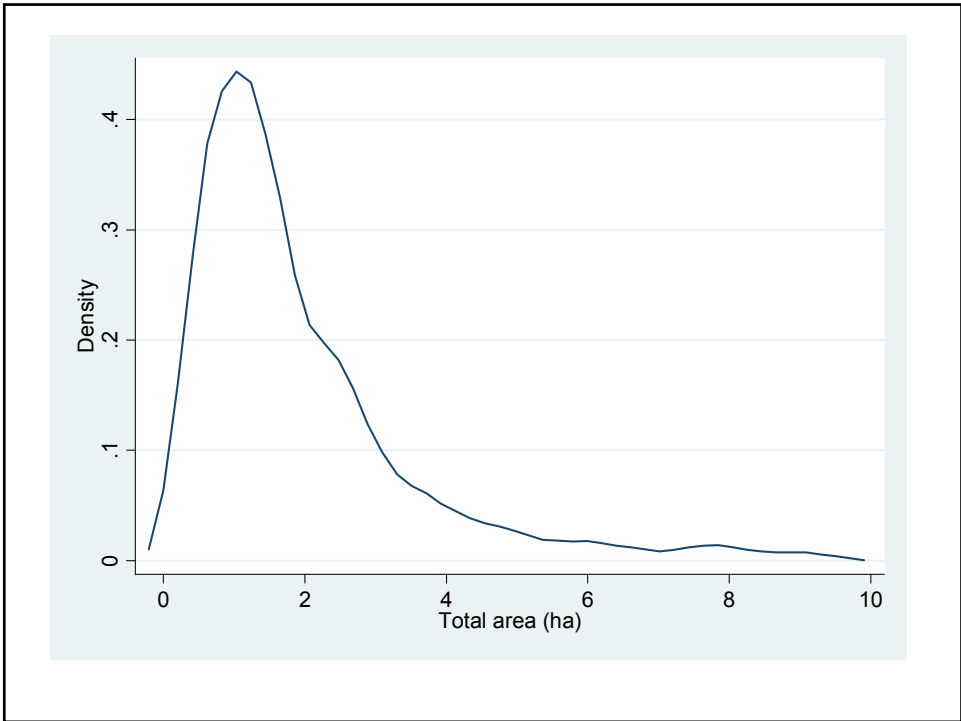
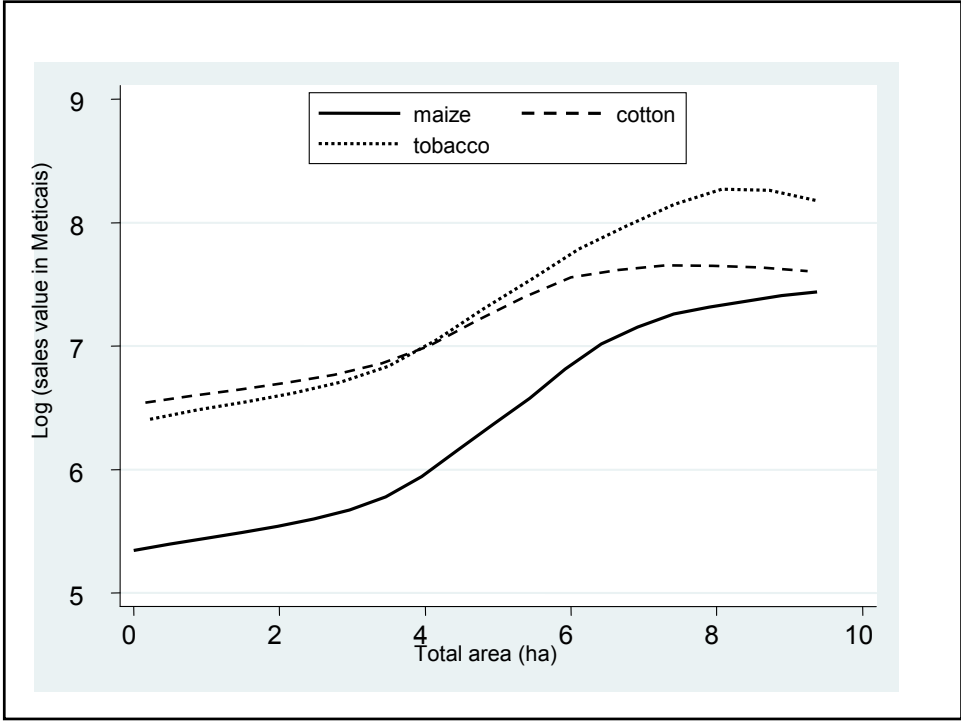
Y quintile	Crop share in HH Y	% HH who retain food	% HH who sell food	% HH sell high value
1 (low)	0.72	93	33	19
2	0.70	98	49	28
3 (med)	0.66	98	52	33
4	0.61	96	56	38
5 (high)	0.46	95	54	40
<b>TOTAL</b>	<b>0.63</b>	<b>96</b>	<b>49</b>	<b>32</b>

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## Crop income share by crop market 2005

Y quintile	Mean Crop Income (MTN / AE)	% share of retained food crops	% share of sold food crops	% share of high value crops
1 (low)	250	86	9	5
2	650	84	10	7
3 (med)	1144	83	9	8
4	1945	83	8	9
5 (high)	4905	81	8	10
<b>TOTAL</b>	<b>2114</b>	<b>83</b>	<b>9</b>	<b>8</b>

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## Household use of improved crop production practices 2005

Y quintile	% buying improved seed	% row planting	% crop rotation	% access to credit
1 (low)	4.7	34	34	1.9
2	4.8	39	36	2.9
3 (med)	6.6	40	38	3.2
4	7.3	47	38	3.9
5 (high)	9.7	51	40	5.8
<b>TOTAL</b>	<b>6.6</b>	<b>42</b>	<b>37</b>	<b>3.5</b>

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## Strategies to achieve food security

- Need to raise labor productivity in staple foods
  - Through increasing yields as well as area expansion
  - Reducing vulnerability to drought, disease and insect attack

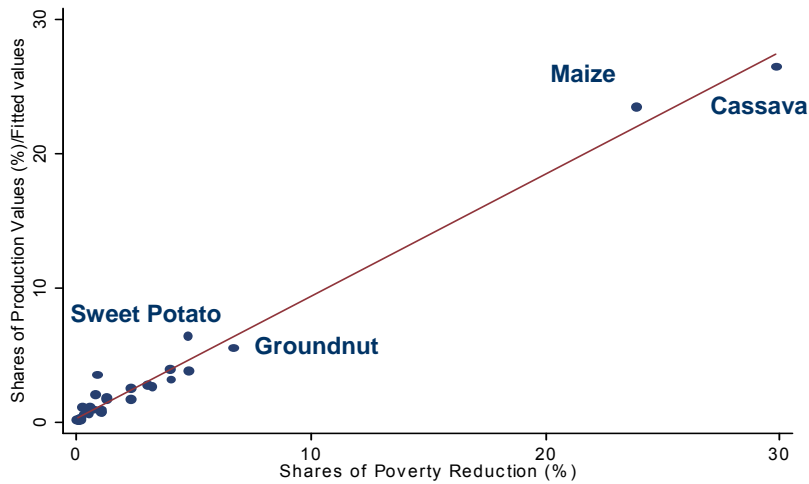
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## Strategies to achieve food security (continued)

- Increased availability of and access to improved technologies:
  - Investment in agricultural research
  - Strengthening partnership between private sector, NGO's and public sector in technology development and transfer
  - Establishing agricultural input and rural finance markets
  - Improved understanding of smallholder access to and accumulation of productive assets

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## Potential for poverty reduction through technology development



Source: Walker et al, Research Report no 3E. 2006

## Strategies to achieve food security (continued)

- Increased productivity in food staples will provide a foundation for crop diversification and increased market participation
- Continued off-farm income diversification is a necessary complement to increased value of crop production (shock absorber in drought)

Muito obrigado!

