Objectives

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

- How much progress has been made in rural poverty reduction over the past decade?
- What changes have occurred in the composition of rural household income?
- Looking forward, what investments and strategies are most relevant for improving food security in the medium term?
Outline of the Presentation

- Brief overview of MSU Food Security Project objectives and areas of work
- 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
Goal of MSU project in Mozambique

- To support public sector efforts to raise productivity and cut hunger for rural smallholder families through:
  - Expanding the availability of appropriate crop, livestock and natural-resource management technologies
  - Accelerating the uptake of those technologies by strengthening policy institutions and market information services
- Human and organizational capacity building approach

Outline of the Presentation

- Brief overview of MSU Food Security Project objectives and areas of work
- 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
Trabalho de Inquérito Agrícola TIA
National Agricultural Survey

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)

TIA 2002 and 2005 included detailed income modules

Panel of 4100 households
Current Coverage, TIA07

- **94 districts**
- **6,000+ households interviewed**
- **3.6 million households represented**

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
Outline of the Presentation

- Brief overview of MSU Food Security Project objectives and areas of work
- 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

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

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
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)

Outline of the Presentation

- Brief overview of MSU Food Security Project objectives and areas of work
- 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
Distribution of Household Income per Adult equivalent (AE), 2005

Mean = 3,344 MTN / AE  
(approx US$ 140 / AE)

Median = 1,515 MTN / AE  
(approx US$ 63 / AE)

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

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

Source: TIA 96; TIA 02; TIA 05
Change (%) in median household income per adult equivalent 1996-2002 and 2002-5

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

Source: TIA 96; TIA 02; TIA 05

Bicycle Ownership 1996, 2002 and 2005
### Months of household reserves of basic staple

![Bar chart showing months of reserves for different income quintiles.](chart.png)

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

<table>
<thead>
<tr>
<th>Y Quintile</th>
<th>2004/5</th>
<th>2005/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (low)</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td>2</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>3 (med)</td>
<td>37</td>
<td>38</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>5 (high)</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>39</td>
<td>37</td>
</tr>
</tbody>
</table>

*Note: 2004/5 quintiles reported income; 2005/6 quintiles predicted income*
Share of farm income in total net household income (%)

![Chart showing the share of farm income in total net household income for different quintiles of income per AE from 1996 to 2005.]

Household participation in crop markets 2005

<table>
<thead>
<tr>
<th>Y quintile</th>
<th>Crop share in HH Y</th>
<th>% HH who retain food</th>
<th>% HH who sell food</th>
<th>% HH sell high value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (low)</td>
<td>0.72</td>
<td>93</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>0.70</td>
<td>98</td>
<td>49</td>
<td>28</td>
</tr>
<tr>
<td>3 (med)</td>
<td>0.66</td>
<td>98</td>
<td>52</td>
<td>33</td>
</tr>
<tr>
<td>4</td>
<td>0.61</td>
<td>96</td>
<td>56</td>
<td>38</td>
</tr>
<tr>
<td>5 (high)</td>
<td>0.46</td>
<td>95</td>
<td>54</td>
<td>40</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.63</td>
<td>96</td>
<td>49</td>
<td>32</td>
</tr>
</tbody>
</table>
### Crop income share by crop market 2005

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

### Household use of improved crop production practices 2005

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

- Brief overview of MSU Food Security Project objectives and areas of work
- 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

Strategies to achieve food security

- Need to raise labor productivity in staple foods
  - Through increasing yields rather than area expansion
  - Reducing vulnerability to drought, disease and insect attack
Potential for poverty reduction through technology development


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
Expected Economic impact of USAID-funded multiplication and distribution of CBSD-tolerant cassava variety in Nampula

![Graph showing the expected economic impact over years]

- Expected value per plant = 24%
- Net benefit per ha = $71
- IRR ≅ 100%
- NPV ≅ $30 million

Source: Walker et al, 2006

Strategies to achieve food security (continued)

- Increased productivity in food staples will provide a foundation for crop diversification and increased market participation

  *USAID-funded PVOs are playing an important role in facilitating this transition*

- Continued off-farm income diversification is a necessary complement to increased value of crop production (shock absorber in drought)
Muito obrigado!