Cross disciplinary approach to big questions related to agricultural growth, water and sustainability:

- **SWAT** – analyze the potentials and impacts of SSI at the watershed scale
- **APEX** – analyze cropping systems at the field scale, and
- **FARMSIM** – assess economic & nutritional impacts at household level
IDSS methods and results are being adopted by national governments for planning, monitoring and program design.
<table>
<thead>
<tr>
<th>Country</th>
<th>Area (hectare)</th>
<th>Number of farmers</th>
<th>Net profit (direct) to producers per year</th>
<th>High potential areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>1 million</td>
<td>5,874,000</td>
<td>US$ 2.6 billion</td>
<td>Lake Tana, Ethiopian Great Rift Valley, Amhara, Oromia, SNNPR</td>
</tr>
<tr>
<td>Ghana</td>
<td>115,000</td>
<td>690,000</td>
<td>US$ 285 million</td>
<td>Northern Region</td>
</tr>
<tr>
<td>Tanzania</td>
<td>750,000</td>
<td>3,000,000</td>
<td>US$ 781 million</td>
<td>Across country</td>
</tr>
</tbody>
</table>
POTENTIAL ADOPTION, WATER SCARCITY

- High adoption probability for SSI at Lake Tana and Ethiopian Great Rift Valley areas
- SSI development may pose water scarcity
INSTITUTIONALIZING IDSS

- **Universities** - IDSS models added to curricula to train the next generation scientists and professionals

- **Government Institutions** - IDSS is used for planning and evaluation of government initiatives

- **CGIAR centers, NGOs and Private sector** – IDSS used for environmental analysis, targeted investment, and engineering design
SUPPORTING YOUNG SCIENTISTS ENSURES SUSTAINABILITY

ILSSI trained women and men, young and mid-career scientists to use the tools and apply the results, ensuring sustainability for future capacity.
Robustness of the IDSS and the interdisciplinary approaches has been validated by scientific peers, through publications, awards, and students’ successes.
Research and capacity development is contributing to expanding the use of sustainable irrigation approaches, and can improve the income and nutritional security of millions of farmers.

Farmers lead the way, and research provides a roadmap for supporting sustainability.
ACKNOWLEDGEMENTS –
We would like to thank
• USAID for financial support to carry out our research
• Our senior leadership for the strategic and scientific support
• Thousands of farmers who have worked with us in our research

THANK YOU ALL