PICSA

Participatory Integrated Climate Services for Agriculture
THE CHALLENGE

- Smallholder farmers are key to food security in sub Saharan Africa and in other parts of the developing world
  - Two thirds of the population depend on small scale, rain-fed farming as their main source of food and income

- Critical farming decisions depend upon the weather
  - How much rain falls
  - The length and start date of the season
  - These aspects vary considerably from year-to-year
Climate Information
- Historical Records
- Forecasts

Farmers
- Challenges
- Opportunities

Options
- Crops
- Livestock
- Livelihoods

Participatory Decision Making Tools

‘The Farmer Decides’

‘Options by Context’
UNDERSTANDING THE FARMERS CONTEXT
CALCULATING RISKS OF GROWING DIFFERENT CROPS
EXAMPLE OF A CROP INFORMATION SHEET
(NOT REAL VALUES)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Variety</th>
<th>Days to maturity</th>
<th>Crop water requirement</th>
<th>Chance of sufficient rainfall if season starts on x (Early)</th>
<th>Chance of sufficient rainfall if season starts on x (Middle)</th>
<th>Chance of sufficient rainfall if season starts on x (Late)</th>
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</thead>
<tbody>
<tr>
<td>Maize</td>
<td>Local</td>
<td>120</td>
<td>480</td>
<td>5/10</td>
<td>4/10</td>
<td>2/10</td>
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<tr>
<td>Maize</td>
<td>Pioneer</td>
<td>100</td>
<td>350</td>
<td>7/10</td>
<td>5/10</td>
<td>4/10</td>
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<tr>
<td>Sorghum</td>
<td>Seed Co</td>
<td>110</td>
<td>300</td>
<td>5/10</td>
<td>7/10</td>
<td>6/10</td>
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<tr>
<td>Practice</td>
<td>Who Does It?</td>
<td>Benefits and Who Benefits</td>
<td>Performance V/OK/X</td>
<td>Investment H/M/L</td>
<td>Time to Start of Benefits (Months)</td>
<td>Risks/Disadvantages</td>
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<td>Low, Med, High</td>
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</table>
FARMERS COMPARE AND DECIDE WHICH OPTIONS TO TRY ON THEIR FARM

<table>
<thead>
<tr>
<th>Activities</th>
<th>Inputs</th>
<th>Family labour</th>
<th>Outputs</th>
<th>Produce consumed</th>
<th>Cash balance / profit</th>
<th>Cash Balance</th>
</tr>
</thead>
<tbody>
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<td>$000 x 1</td>
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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT
**Long Before the Season**
- Historical Climate Data
- Crop, Livestock + Livelihood Options
- Participatory Planning

**Just Before the Season**
- Seasonal Forecast & Revise Plans

**During the Season**
- Short-term Forecasts & Warnings

**Shortly After the Season**
- Review weather, production, forecasts & process

Seasonal Forecasts from http://rava.qsens.net/themes/climate_template/seasonal-forecasts/
PICSA IN THE NORTH OF GHANA

10 Districts In Northern Ghana

140 Communities

6,000 Farmers

- 60% (3,600) Male Farmers
- 40% (2,400) Female Farmers
## RESULTS FROM EVALUATION

| % making changes in crops, livestock or livelihood enterprises as a result of PICSA training | Ghana (n=416) | Malawi (n=193) | Tanzania (n=611) | Rwanda (n=214) |
| % using participatory budgets in their planning and decision making | 97% | 82% | 52% | 93% |
| % of farmers using historical climate information in their planning and decision making | 93% | 80% | 83% | 97% |
| % of farmers 'better able to cope with bad seasons caused by the weather’ following the training | 88% | 80% | 88% | 92% |
| % of PICSA trained farmers who had shared the information / tools with peers | 84% | 85% | 88% | 91% |
CHANGES TO CROP ENTERPRISES IN GHANA

I grew a new or different crop
I grew a new or different variety
I increased the scale at which I grew a...
I decreased the scale at which I grew...
I changed the date that I planted my...
I changed the type or amount of...
I changed the way that I manage my...

% of respondents (n=416)

0%  5%  10%  15%  20%  25%  30%  35%  40%
EXAMPLES OF CHANGES MADE

Farmer starting a small business selling soya beans

Farmer engaging in a new livelihood, making and selling shoes

Farmer engaging in a short-term (54 day) variety of cowpea
## CASE STUDY HOUSEHOLDS

<table>
<thead>
<tr>
<th>Farmer</th>
<th>Changes</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male farmer, northern region, Ghana</td>
<td>Reduced the scale of maize farm and used early maturing variety</td>
<td>Increased maize yield by 3 bags and reduced cash losses. Extra bags helped feed his family for 4 months and money saved helped pay school fees and purchase a goat</td>
</tr>
<tr>
<td>Female farmer, northern region, Ghana</td>
<td>Started regularly feeding and vaccinating her livestock</td>
<td>Increased profit from selling her sheep which was used to pay her son’s school fees; some was used to purchase food and some to purchase two sheep</td>
</tr>
<tr>
<td>Female farmer, Balaka, Malawi</td>
<td>Early maturing maize and conservation farming techniques</td>
<td>After a difficult season, she was able to harvest while others weren’t. Paid daughter’s school fees, fed extended family and bought seeds for the coming season (incl. trying new crops)</td>
</tr>
<tr>
<td>Male farmer, Longido, Tanzania</td>
<td>Introduced new cattle breed (more suited to dry environments), reduced the size of his herd and vaccinated</td>
<td>Some of the remaining money from sales of local breed were invested in building a house. He has also started to engage in agriculture, planting maize, some trees and vegetables which helps feed his family</td>
</tr>
</tbody>
</table>
There are a number of different reasons why PICSA appears to be making an impact with smallholder farmers:

- **The emphasis on supporting farmers to make their own choices and decisions** and providing them with the tools and information to do this.
- **Contextualisation** – incl. locally specific information and locally specific options.
- PICSA is not just about information delivery but it is an integrated approach, bringing together Met Services, Extension, farmers alongside other actors in the innovation system (seed suppliers etc...)
- Information and tools are easily understood and easily shared by extension and farmers.
- Is **helping extension staff to meet farmers needs / demands** and to do their extension jobs better.
- Historical climate information **provides locally specific evidence** for farmers to help in their decision making.
- **Learning and adapting** the approach as the roll out continues and we move to scale.
NEXT STEPS FOR PICSA

Implemented at SCALE

Long term, SUSTAINABLE

Principles & QUALITY maintained

IMPROVING through learning & research
THANK YOU

Graham Clarkson, Peter Dorward and Roger Stern
R-INSTAT

- Crowd Sourcing campaign 2015
- Identified a gap in statistical software
- Work in Africa and UK
- The R-Instat software will be offered for the first time

R-Instat
- Based on the R statistical system
- With the same ideas as the original Instat
R-INSTAT

- Menu-driven front end to R
- Designed to make R really easy to use
- Particularly for those who already use a spreadsheet.

- Like Instat it is a general statistics package
- With a special climatic menu.
- Free to download
- http://r-instat.org/