Change management – upgrading experimental designs, biometrics and data management at CIP-NARS SweetGAINS breeding network

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EiB Virtual Meeting 2021, November 17th, 2021
70% of organizational change attempts Fail (McKinsey, 2008)

Creating a climate for change
- Create a sense of urgency
- Build a guiding coalition
- Creating a vision

Engaging and enabling the whole organization
- Communicate the vision
- Empowering others to act
- Generate short-term wins

Implementing and sustaining change
- Sustain acceleration
- Institute change

(John Kotter, Harvard University)
The five behaviors of high-performing teams

- Accountability
- Commitment
- Conflict
- Trust
- Results
Creating a climate for change - Create a sense of urgency

**Experimental designs**
- RCBDs for large replicated experiments
- Westcott design for unreplicated experiments

**Data analysis**
- ANOVA – Least Square Means
- No spatial adjustments
- Compound symmetry V/COV by default

**Breeding data management**
- No naming convention for genotypes
- No global data curation rules
- Inconsistent trait ontology
- Plot row/column coordinates not recorded
- No global data management system
Creating a climate for change - Build a guiding coalition
Creating a climate for change - Creating a vision

To increase the **likelihood of success, and impact,** of CIP-NARS SweetGAINS sweetpotato breeding network
Engaging and enabling the whole organization
- Communicate the vision & Empowering others to act
Engaging and enabling the whole organization
- Generate short-term wins

<table>
<thead>
<tr>
<th>Breeding program</th>
<th>Row and column coordinates recorded</th>
<th>Augmented row-column designs</th>
<th>Augmented p-rep design</th>
<th>Resolvable row-column designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>NaCRRRI (Uganda)</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>12</td>
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<tr>
<td>CIP (Uganda)</td>
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<td>1</td>
<td>6</td>
<td>0</td>
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<tr>
<td>Mozambique (CIP + NARS)</td>
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<tr>
<td>Malawi</td>
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<td>Rwanda</td>
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<tr>
<td>Total # trials</td>
<td>70</td>
<td>6</td>
<td>6</td>
<td>58</td>
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<tr>
<td>Percentage of total # trials</td>
<td>100%</td>
<td>9%</td>
<td>9%</td>
<td>82%</td>
</tr>
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</table>
Implementing and sustaining change - Sustain acceleration
From 2022 onwards, **100% of breeding trials** using modern designs

From 2022 onwards, **100% of advancement decisions** based on BLUPs

Piloting **sparse designs** begins in 2022

**Technical support** to designs trials, analyze datasets, and data management

**Sustain and institutionalize** through EiB’s BRIN
Change is hard, but it is within reach.
Weebale,
Asante sana,
Muito obrigado,
Thank you!