Process Improvement and Transformation of Breeding: a perspective

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Breeding Resource Services
Breeding Transformation Agenda: key points

- Harmonization
- Communication
- Transparency
- Quality focus
- Accountability
Harmonization

• Facilitate and Drive Communication
  Vocabulary/Terms/Definitions

• Drive Efficiency in Processes
  Operations (field and lab)
  Role of all processes: deliver quality product

• Requires Flexibility
  **Watchout:** Allow creativity in science
Harmonization (Win-Wins)

Facilitate and Drive Communication
  Vocabulary/Terms/Definitions

Drive Efficiency in Processes
  Operations (field and lab)

Requires Flexibility
  Allows creativity in science and process improvement

Facilitate process improvements
  Allow new technology implementation AND development
    Software development
    Technology (genomics/genotyping, field processes)
    Infrastructure development and enhancements
    Equipment

Inter-Group Organizational Learning
  Scientific exchange
  Process improvements
  Build credibility
  Self-determination
Communication

Leadership

Consistent

Customer Focus (internal/external)

Within Teams
Across Teams
Across Groups

Stakeholders (external/internal)
Transparency

Facilitates cross-organization communication

Promotes additional/different/new perspectives

Builds trust and confidence

Enables evaluation
Quality focus

Breeding Operations: “manufacturing” process

Product produced…… DATA
• Allows decision-taking
• Excellent/good quality data > correct/good decisions

Process improvement’s goal…… to manufacture better data
Measured by Key Performance Indicators
*Driven by process improvement training
## Product Development Process: KPI

**KPI sub-team:** Brigitte Uwimana, Xiaofei Zhang, Kevin Pixley, Arlo Thompson

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<tr>
<th>Proposed Key Performance Indicators</th>
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<tr>
<td>1. Attain genetic gain targets</td>
<td>14. Site management achieves &gt;85% high data quality</td>
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<td>2. Breeding Portal is single source for MS/TPP</td>
<td>15. Digitized data capture &amp; focused on advancements</td>
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<td>3. Clear, concise TPPs drive mid/long term focus</td>
<td>16. Use of databases: EBS, BreedBase, BMS</td>
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<td>4. MS/TPPs guide resource prioritization (Tiers)</td>
<td>17. Checks that are elite for TPE</td>
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<td>5. Active current TDD projects maintained and updated quarterly</td>
<td>18. Advancement decisions are jointly conducted</td>
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<td>6. All crops follow harmonized practices to assess trait value and ROI of TDD</td>
<td>19. Aggressive early testing, representing TPP &amp; TPE</td>
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<td>7. Minimize recycle time with process/technologies</td>
<td>20. Products advanced to OFV provide added value</td>
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<td>8. Recycling of pre-elite/elite parents (&gt;90%)</td>
<td>21. OFVT represent TPE @ 30+ locations</td>
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<td>9. Use of selection indices</td>
<td>22. Gender disaggregated data from OFVT</td>
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<td>10. QC genotype parents and advanced trial entries</td>
<td>23. Develop external networks with partners</td>
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<td>11. Monitor genetic diversity long term</td>
<td>24. Training in continuous improvement, all levels</td>
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<td>12. Employ Brding Scheme Mgr to define selection schemes: Breeding &amp; TD&amp;D</td>
<td>25. Continuous process improvement in all planning</td>
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Accountability

Pertains all to process groups impacting Product Development

- Define clear expectations and deliverables
  - Field/lab laborers through to leadership
- Engage/support operational processes
- Engage/learn from other groups & crops
- Training, Training, Training
- Measure process improvement as trend
- Deliver value to customers
Transformation of Breeding

• Dependent on Harmonization
• Facilitated by Communication
• Enhanced by Transparency
• Driven by Quality focus=good decisions
• Results from Accountability
Thank you!