Implementing Continuous Improvement Culture in IRRI

SHARIFAH SHAHRUL SYED ALWEE
PLATFORM LEADER
INTERGRATIVE RESEARCH SUPPORT
Rice Breeding

Sustainable Rice-Based AgriFood System

Integrative Research Support
Integrated Research Support Platform

- Cross-cutting operations (CCO)
- IRRI service laboratories (ISL)
- Research Infrastructure and Regulatory Compliance (RRC)
- Seed Health Unit
- Software development, database management and statistical services (SDDMSS)
- Ziegler experimental station (ZES)/research farm

Full Cost Recovery
Continuous Improvement Practitioner Training
Identified 3 Initial Projects

- 15-18 people from IRRI will attend 11 half-day workshops online and will work on these projects during this training
- Each team will define their projects, team members, goals, deliverables, and metrics
- Weekly “touchbase” meetings are being held with the team leaders prior to the online training
Training Guidelines

• The project is worked on during training
  ─ The project continues after the training
  ─ An action/implementation plan is created
  ─ The team presents their work and plans at the end of the training

• Participants must be available to attend all sessions
  ─ Each session builds on the next
  ─ Your team needs you - participants are expected to be engaged in their team project
  ─ When training is done virtually, each team will need one of their members to be a facilitator/leader.
• Project: Crop Health

• Problem Statement: Increasing presence of soil borne-pathogens in seeds produced in IRRI Los Banos campus. This affects yield, seed quality and health. Also high pressure of pathogens compromise research quality. Though this concern affects all researchers using IRRI Los Banos fields and screenhouses, consequences impact mostly all researchers intending to send seed samples out of the country as seedlots do not meet minimal seed health standards. Compliance to national and international rules for seed movement is achieved only after costly testing and seed treatments. Associated delays in shipments and under optimal seed quality are also critical to these projects.
1. Define Value

Value is everything that your customer is willing to pay for
To deliver a solution for the hybrid rice team, based on integrated field management best practices, that will effectively and efficiently reduce the level of pathogen contamination of rice seeds produced at IRRI Los Banos.
2. Value Stream Mapping

- analyze the current state of information and material flow
- to design a future state which would be more efficient and addressing the customer needs.
3. Create flow

- Flow is a key concept.
- When creating flow the goal is to ensure smooth delivery from the second you receive an order to the moment when you deliver it to the customer.
SPAGHETTI DIAGRAM - MATERIAL (SEED) FLOW

Things to be improved:
- Automation in data collection
- Tool in B4R
- Dedicated Developer in B4R tool

PGF
Plant Growth Facility
CURRENT INFORMATION FLOW
individual request

Information flow for each application request
(carbofuran)

Other activities
(LAND PREPARATION)

Information flow for each application request
(other pesticides)
Seeds produced at IRRI HQ are highly contaminated with different pathogens.
5 WHYS

Problem: Manpower lacks capabilities

Why? Why manpower lacks capabilities?
Because they were not trained or guided enough.

Why? Why were they not trained or guided enough?
Because they are not dedicated to perform specific set of tasks.

Why? Why are they not dedicated to perform specific set of tasks?
Because of the number of workload given.

Why? Why is there a number of workloads given to them?
Because the service provider received this instruction.

Why? Why did they receive this instruction?
Because those were the needs at that time of the request.

Root cause: Requirements have to be updated in the service agreement to train workers to perform set of activities only.
FUTURE: INFORMATION FLOW (pooled/unified requests)

IDEAL FLOW (100% unified requests)

By unifying the requests to OCS for the whole season....
4. Establish pull

• consider the customer’s perspective on the final product
• effectively looking at the operations of the service
<table>
<thead>
<tr>
<th>PRIORITY RANK</th>
<th>PROGRAM</th>
<th>TASK / ACTION</th>
<th>WHO</th>
<th>STATUS</th>
</tr>
</thead>
</table>
| 1            | Planning and Unified OCS Requests | - Dedicated committee to create a template form to capture all relevant information (Checklist) and to provide sharing instructions  
- Share with customer for review, approval and implementation. | Jun, Ben, Rhulyx, Martina  
Jun, Martina, Rhulyx | 30 d    |
| 2            | GK Service Agreement            | - Identify/List of non-critical activities  
- To identify control points (CTQ and variations) (implement mistake proofing)  
- Learning and development plan by GK | Jun  
Shery, Vel  
Ed / Jaesel | 30 d    
60 d    
90d    |
| 3            | RT Trainings                    | - Prepare training material  
- Classroom training on Quality control points  
- Schedule season long training on rice seed production and seed quality mgt. | Gids, Ben, Sheryl, Roy/Anna | 30 d    
60 d    
120 d    |
| 4            | Disease Management              | - Create proposal of measures to implement (ZES+CCO+HRC)  
- Meeting with experts to assess proposal and generate final document  
- create SOP/WI | Ben, Gids, Rhulyx, Roy | 30 d    
30 d    
60 d    |
### DISEASE MANAGEMENT SAMPLING PLAN

#### Vegetative Phase
- Early vegetative phase (seedling to emergence)
- Late vegetative phase (emergence to tillering)

#### Reproductive Phase
- Early reproductive phase (tillering to booting)
- Late reproductive phase (booting to grain filling)

#### Ripening Phase
- Grain filling phase (grain filling to maturity)
- Mature stage (maturity to harvest)

#### Sampling Program

<table>
<thead>
<tr>
<th>CROP HEALTH INSPECTION</th>
<th>DRY SEED INSPECTION (DSI)</th>
<th>ROUTINE SEED HEALTH TEST (RSHT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How to collect</strong></td>
<td>Visual inspection of seedlots (presence of mixture, other contaminants)</td>
<td>No. of contaminated seedlots based on SHU-RSHT</td>
</tr>
<tr>
<td><strong>Group size</strong></td>
<td>per plot number of rows x no. of hills</td>
<td>100 seedlots</td>
</tr>
<tr>
<td><strong>How often</strong></td>
<td>per crop stage: seeding, vegetative (max tillering), reproductive (booting and grain filling), ripening stage</td>
<td>one (1) per season</td>
</tr>
<tr>
<td><strong>Method of recording</strong></td>
<td>crop health monitoring record</td>
<td>Inventory Movement (SWIM) sampling record (QMS SOP)</td>
</tr>
<tr>
<td><strong>Who will record</strong></td>
<td>Researcher or CCO-BSREC</td>
<td>Seed warehousing service Unit</td>
</tr>
<tr>
<td><strong>How will data be displayed</strong></td>
<td>B4R (IRRI-SES)</td>
<td>present total lines inspected, number of lines passed inspection</td>
</tr>
<tr>
<td><strong>How to communicate results</strong></td>
<td>B4R, delivery reports</td>
<td>delivery reports</td>
</tr>
</tbody>
</table>
## Disease Management Control Plan

<table>
<thead>
<tr>
<th>Measure</th>
<th>Owner / Name</th>
<th>Frequency</th>
<th>How Many</th>
<th>Acceptable</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop health inspection plan</td>
<td>Roy</td>
<td>3x in 1 cropping season</td>
<td>1 plot</td>
<td>100%</td>
<td>Meetings, If-Then</td>
</tr>
<tr>
<td>Dry seed inspection plan</td>
<td>Gids</td>
<td>every dispatch schedule</td>
<td>100 seedlot</td>
<td>91%</td>
<td>Meetings, 5-Whys, If-Then</td>
</tr>
<tr>
<td>Routine seed health testing plan</td>
<td>Sheryl</td>
<td>every dispatch schedule</td>
<td>100 seedlot</td>
<td>91%</td>
<td>Meetings, 5-Whys, If-Then</td>
</tr>
</tbody>
</table>
# GANTT CHART

## Project Name: Addressing Crop Health through sustainable field management

**International Rice Research Institute**

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Lead</th>
<th>Precedent</th>
<th>Start Date</th>
<th>Duration</th>
<th>Days</th>
<th>% Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Implement a control system for contract worker's non-critical activities</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>2 weeks</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>1.1 Identify list of non-critical activities</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1.2 Develop SOP and WIs</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1.3 Prepare training material</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1.4 Classroom training on Quality control points</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1.5 Schedule sessions on rice seed production and seed quality map</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
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<tr>
<td>1.6 Develop a template form to capture all relevant information</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
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<tr>
<td>1.7 Share with customer for review, approval and implementation</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
<td>7</td>
<td></td>
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<tr>
<td>2. Disease management strategy</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>2 weeks</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>2.1 Create proposal of measures to implement (IACS+CCCMR)</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
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<tr>
<td>2.2 Meeting with experts to assess proposal and generate final document</td>
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<td>8/9/2020</td>
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<tr>
<td>3. RT Training: Capacity Building</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>2 weeks</td>
<td>14</td>
<td></td>
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<tr>
<td>3.1 Prepare training material</td>
<td></td>
<td></td>
<td>8/9/2020</td>
<td>1 week</td>
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<td>3.2 Classroom training on Quality control points</td>
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**Project Start Date:** 1/9/2020

**Project Lead:** Martina Castañon

**Project Manager:** [Name]
Beyond training...

- Meeting with stakeholders/customers
- Establish 30, 60, 90 days check–in
- Establishment of Friday afternoon as CI hour
  - To review the project
5. Seek perfection

- constantly analyze each process for the increase in value (reduced cost, time, resources used, space, etc.).
- focus on the elements that add value and eliminate those that do not.
- tighten the flow and deliver the value as the customer needs.
Impact from implementation of CI

- Work planner/scheduler
- Creation of work packages
- Finance tools improvement
- Improved turnaround time
- Removal of waste
From training to creating a culture
IRRI L&D Program: Continuous Improvement Training
Ongoing 5S implementation
Seed storage area
Seed Processing area

Before 5S

Sign boards

Floor lines

After 5S
Seed processing area

Before 5S

After 5S
Thank you