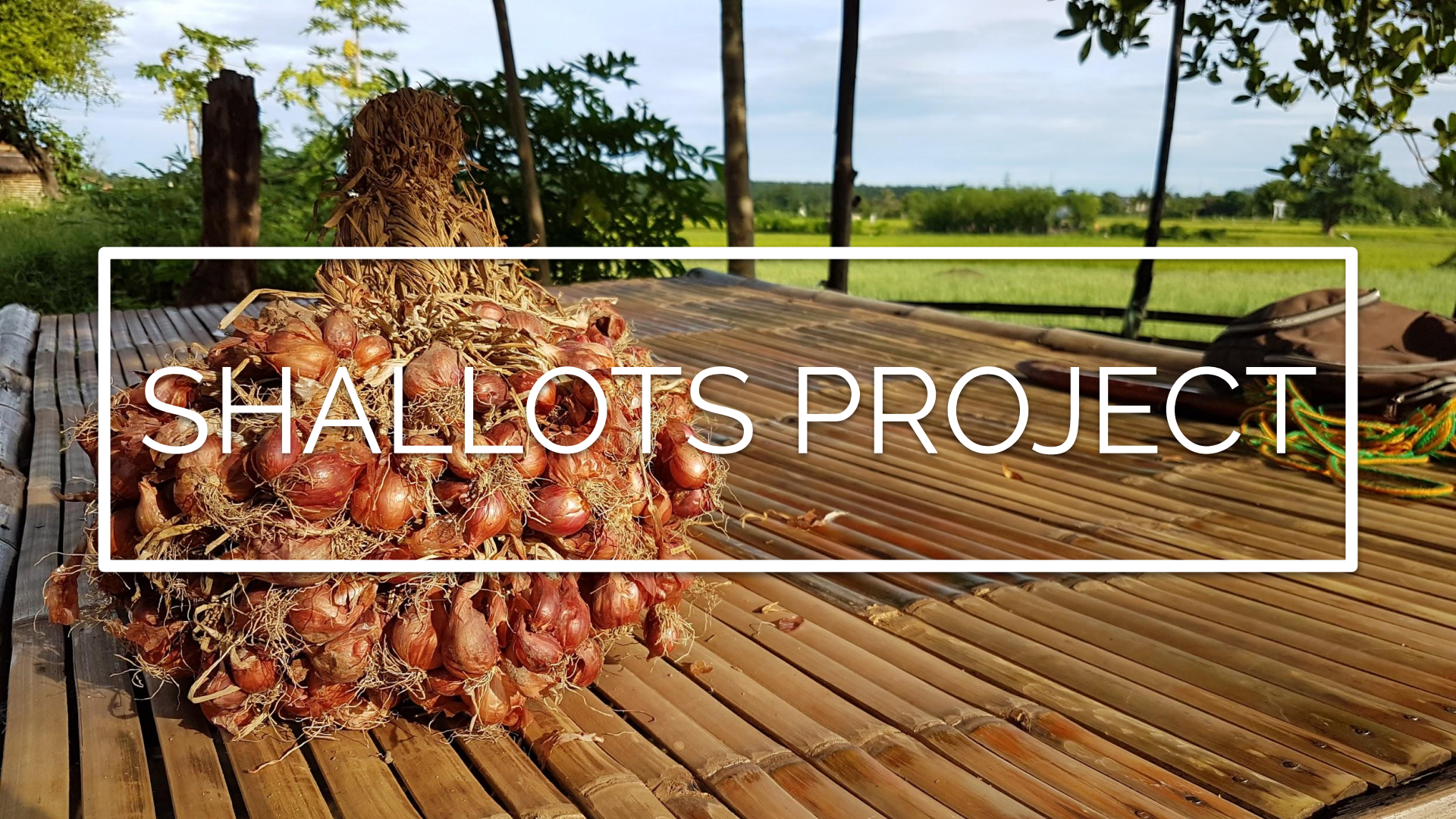
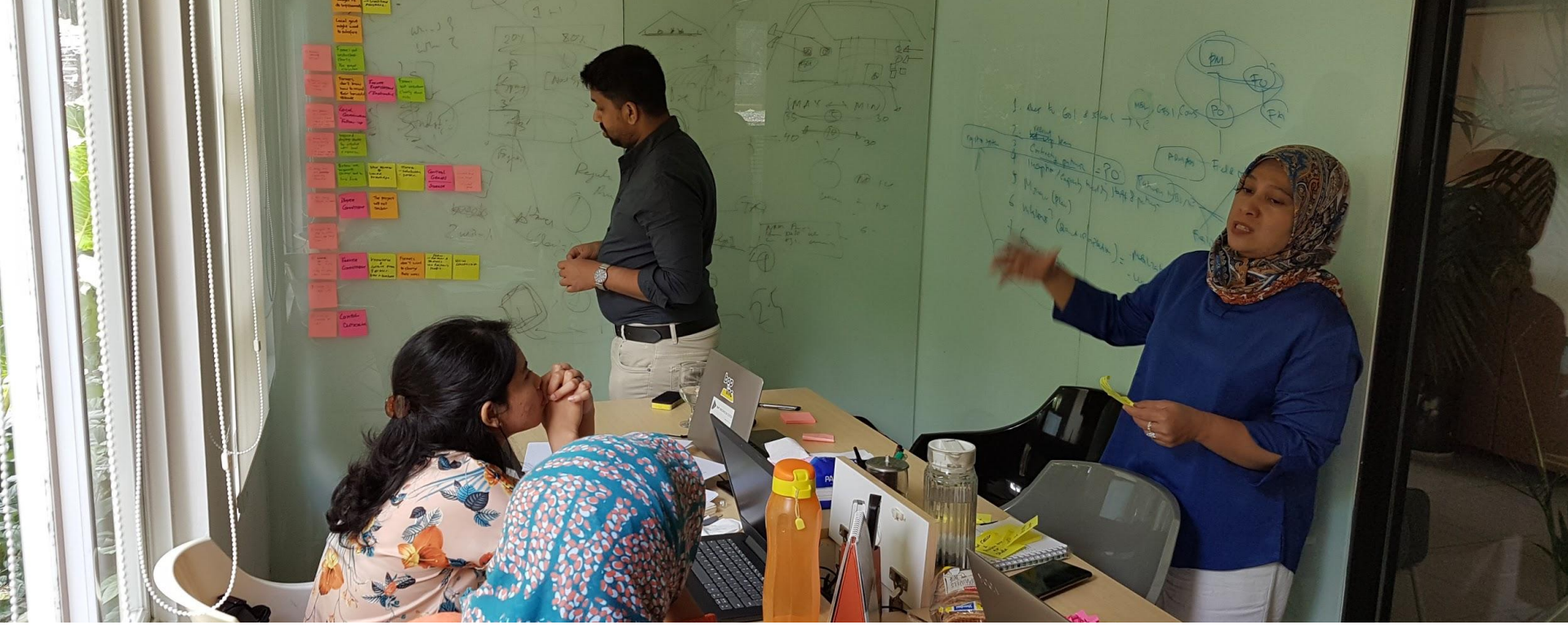

SHALLOTS PROJECT



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Issue

- High costs for purchase of seed bulbs from traders
- High amount of losses - especially in wet season
- Farmers struggle to get a good price from traders as they struggle to get rid of moisture with their traditional means of on-field drying.
- Forced to sell immediately after harvest

➔ Focus on seed bulbs
➔ Focus on wet season
➔ Focus on Sumbawa

Initial Objectives

1. A minimum of **2 solutions are identified, tested and adapted** to the specific context of postharvest management of shallots in Indonesia
2. A minimum of **2 commercial pilots** of each of the 2 identified solutions will be implemented, each pilot has at least one revision cycle after the first implementation.
3. **2 companies will have an upgraded solution and / or business model** ready to market the postharvest solution
4. Solutions will result in a significant **reduction of post-harvest losses**

Scoping Trip (May 2018)

- Meeting different value chain actors and stakeholders
- Identifying needs and opportunities
- Identifying appropriate solutions (local PoHa solutions / technologies / practices)
- Identify potential innovation areas and business models

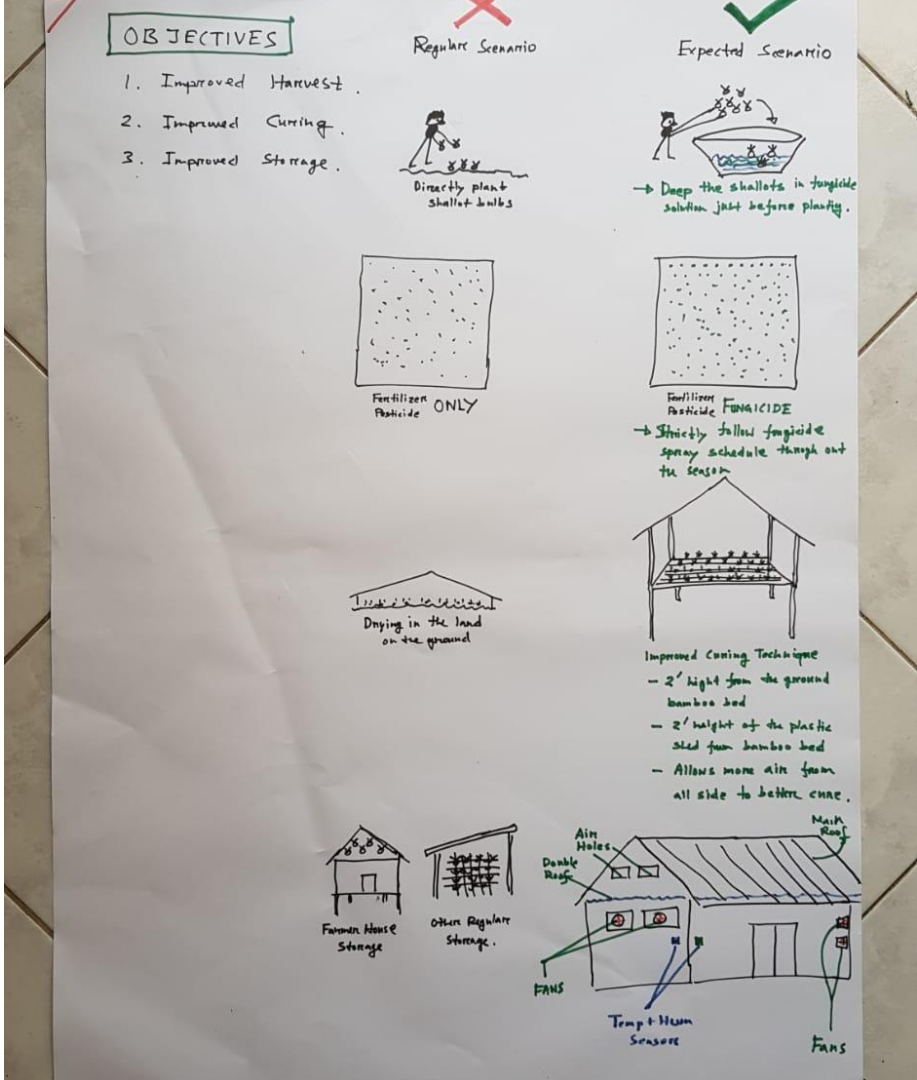
➔ Hard to identify problem owner beyond farmer
➔ Identified solutions (e.g. solar drying; processing) were not appropriate for context / scale
➔ Difficult to connect to business models for companies

Solutions Developed

1. **Improved planting**
   a. Introduction fungicide

1. **Improved curing**
   b. Elevated racks improving airflow

1. **Improved storage**
   b. Ventilated & temperature-'controlled' storage



Challenges

- Identify additional problem owners
- Connect to (Dutch) private sector
- Affordability of solutions

➔ Contact breeders, extension officers/local government, farmers, suppliers, seed companies

➔ Contact Omnivent, Tolsma, De Groot & Slot, Bayer, Syngenta, Bahagiya Jaya, Agro Tunas Teknik

Pilot Round 1 (2019)

Preparations:

- Adapted existing storage facility (incl. measurement device)
- Developed spraying and curing protocols
- Trained farmers

Results:

- Improved drying seems to have effect on storage losses (improvement of appr. 20%)
- Farmers seemed to prefer traditional storage
- Unclear results from fungicide application (big differences per farmer, sometimes even opposite)

Pilot Round 1 (2019)

Lessons Learned:

- Behavior farmers (spraying, curing)
- Monitoring students UTS
- Local coordination
- Control group
- Introduce ‘dipping’
- Improve set up

Improvements after Round 1

- Improve on monitoring
- More hands-on involvement
- Introduction of ‘dipping’ as a method
- Improve experimental setup
- Set new protocols on harvesting
- Changed composition of farmer groups
- Voucher scheme for compensation of fungicide purchase
- Trip to clarify new setup and expectations

➔ Bayer opted out
➔ Dry season

COVID Adaptations

Changed project objectives:

- Data collection (until curing)
- Behavior change communication
- Scaling

Consequences:

- Lack of control group
- No go on voucher scheme
- Remote support
- Improved protocols / training materials / audio files
- Organising various webinars

Pilot Round 2 (2020)

Results:

- Dipping led to decrease of plants not growing and rotting from 20% to 5% → higher yields
- Improved curing decreases curing time by 4 days and results in better-quality bulbs for storage
- Improved curing leads to less damaged bulbs
- Improved curing leads to 4.2% reduction on average losses in storage
- Properly stored bulbs take 1 day to start growing as opposed to 10 days for freshly harvested bulbs
- Improved storage led to 6.3% loss reduction compared to traditional
- Developed Behavioral Change Communication campaign (shirts & video)

Pilot Round 2 (2020)

Lessons Learned:

- Enthusiasm of farmers to adapt to certain advised measures (e.g. improved curing)
- Improved selection had added effect
- Remote support can be very effective (and efficient). Important to build good *rapport* and provide alternative materials
- Farmer support in times of COVID
- Difference in handling between bulbs for storage and consumption
- Storing bulbs leads to a decrease in capital needs for purchasing bulbs for planting
- Combination of improved curing and storage seems to be reasonable alternative to purchasing seed bulbs
- Costs of crop protection is a big issue
- Dipping also results in decreased chemical use

Conclusions & Recommendations

- Coordinating through remote support
- Attention for farmer behavior is at least equally important as technical solutions
- Incentives in VC do not lead to best quality shallots
- Disseminate information to relevant stakeholders (e.g. extension workers)
- Demonstration plots icm farmer field schools
- Further business modelling
- Continuation/follow-up/scaling of BCC
- Explore eco-friendly treatment (organic)
- More attention for gender aspects
- Health benefits by preventing spraying of diesel/gasoline
- Develop financial scheme for fungicides / crop protection
- Further improving practices & experimental set-up
- Private sector involvement
- Expand behavior change communication


THANK YOU