



Geodata for Agriculture and Water (G4AW)

*Provision of Sustainable Information System for Pepper Farmer
In Indonesia*

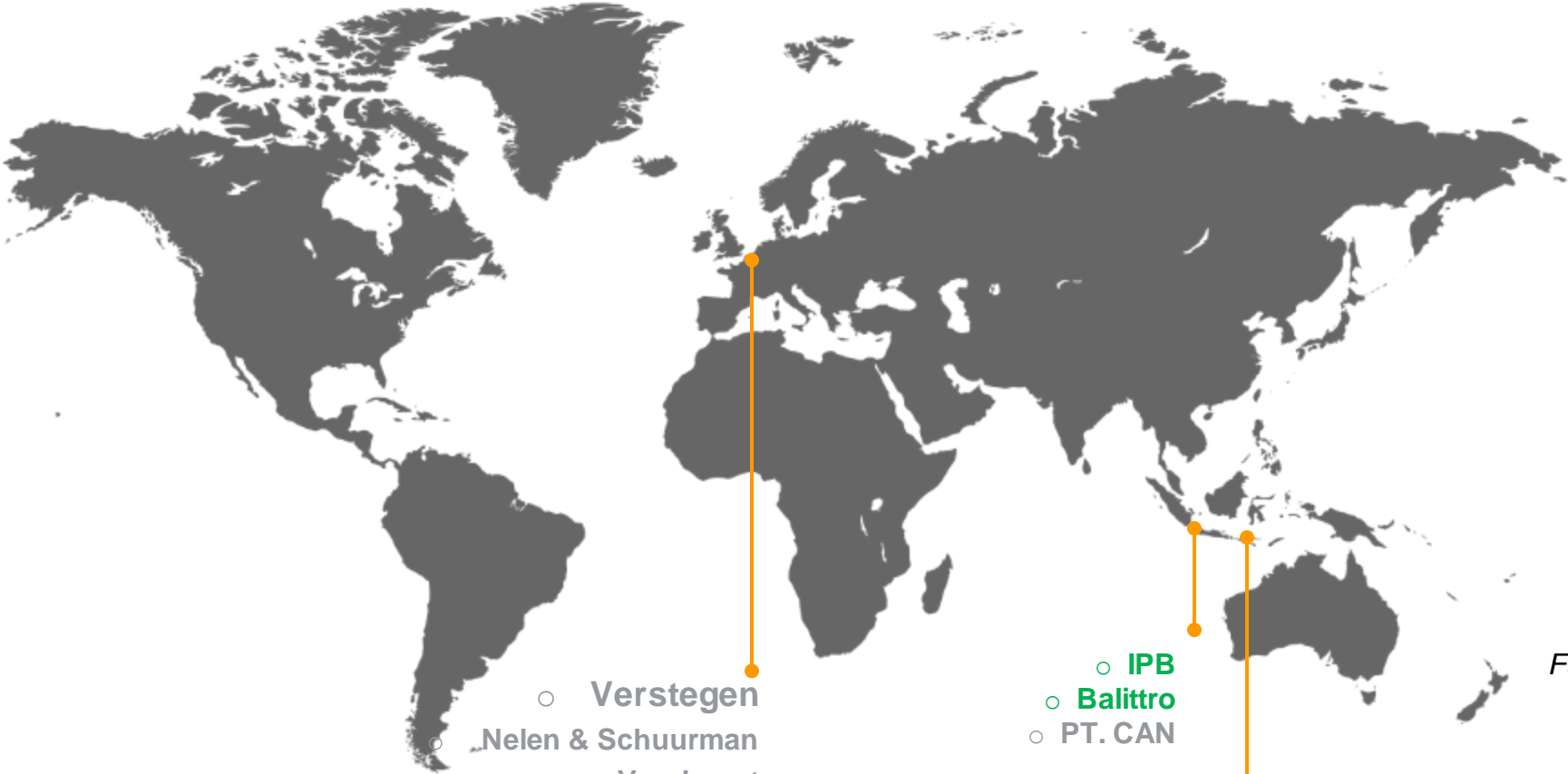


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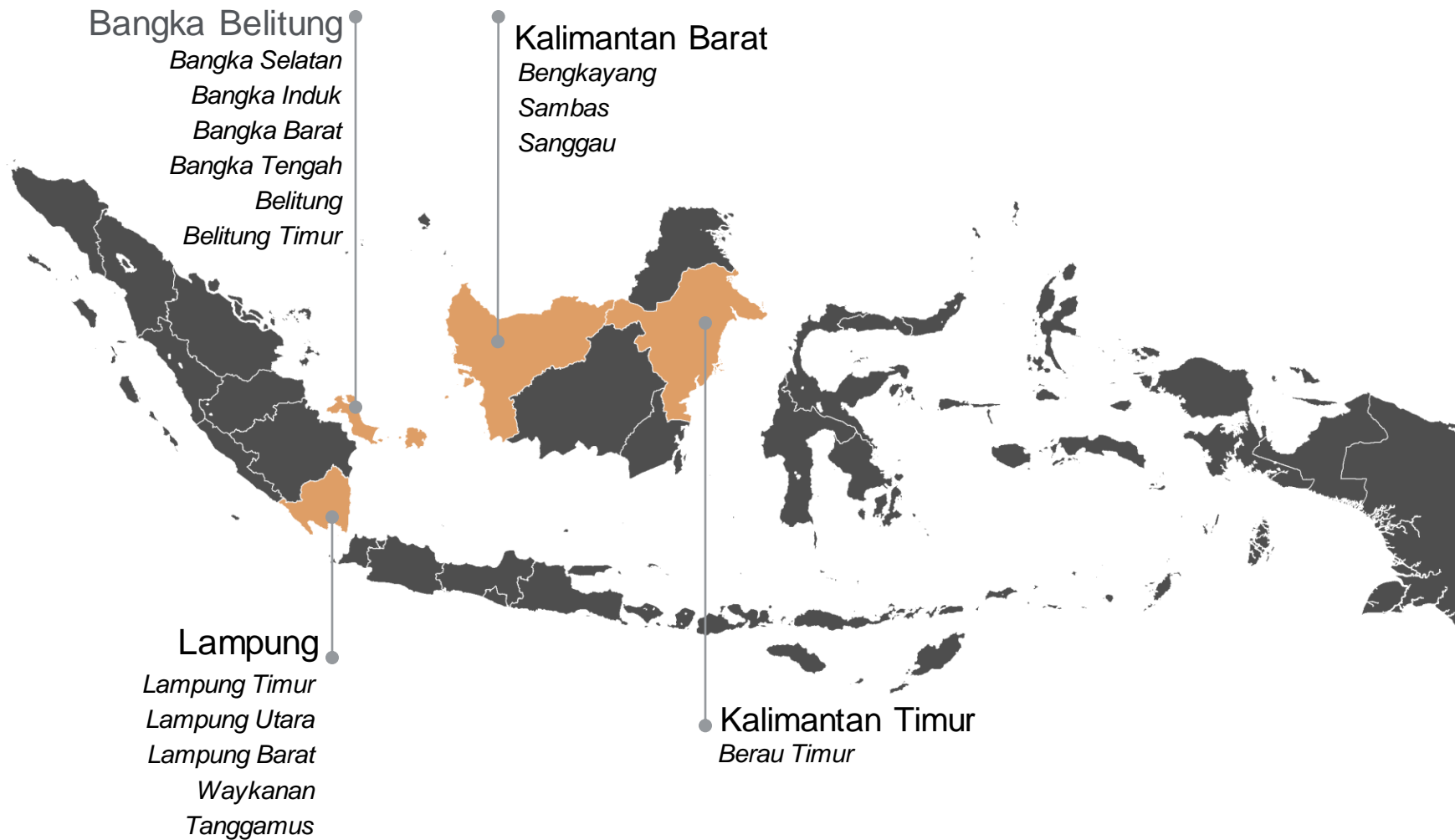


- Private Company
- Public Institution
- Non Profit Organisation





PROJECT LOCATIONS





TARGET



- **100.000** pepper farmers
- **500** B2B
- **25%** improve on the use of farm inputs
- **70.000** farmers adopt the “SpiceUp” GAP
- **25%** increase in yield capacity
- **10%** farmers sell pepper at higher price
- **20%** farmers with increased income



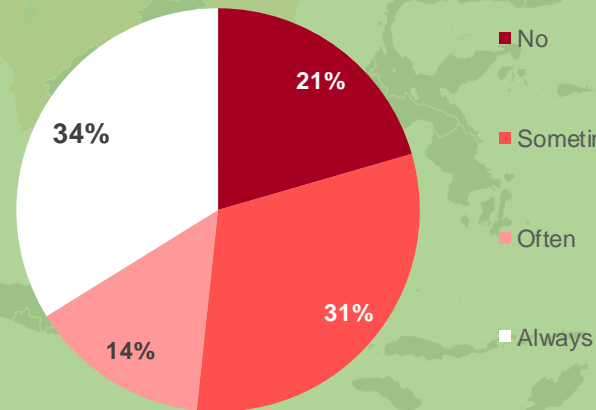


BASELINE

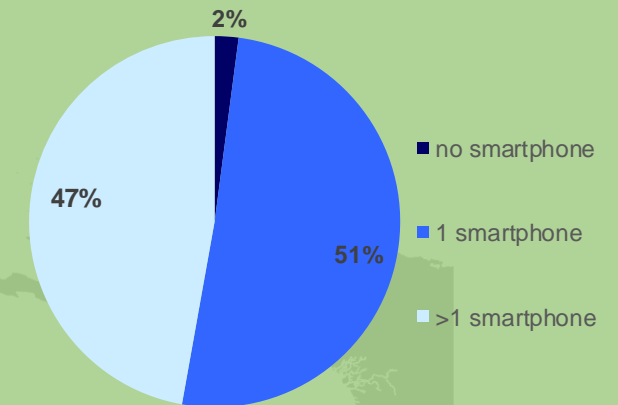
Key Findings:

- Pepper **price low** → reduce input and time to the farm
- **Poor access** to GAP knowledge
- Main **obstacles**:
 - Pest & diseases,
 - Incorrect usage of fertilizers,
 - Long dry seasons

Internet Access at home



- 1.064 (88%) farmers have access to phone



1.200 farmers interviewed in:

3 provinces → 9 districts → 46 sub districts → 99 villages



COLLABORATION



-  GIS and Remote Sensing Expert
-  Agricultural Expert
-  Soil Nutrition Expert
-  Weather and Climate Expert
-  Data Analytics Expert
-  ...





SERVICE



- **Water Management Advice**
(irrigation/drainage)
Based on satellite data on soil / vegetation moisture levels & weather, etc)
- **Fertilizer Advice**
Based on soil analysis & survey → Soil Nutrient Map
- **Pest and Disease Advice**
Based on weather advice and inputs from experts
- **Good Agricultural Practices (GAP) Advice**
GAP advice provide by Agricultural expert
- **Traceability System**
Based on transaction record of value chain

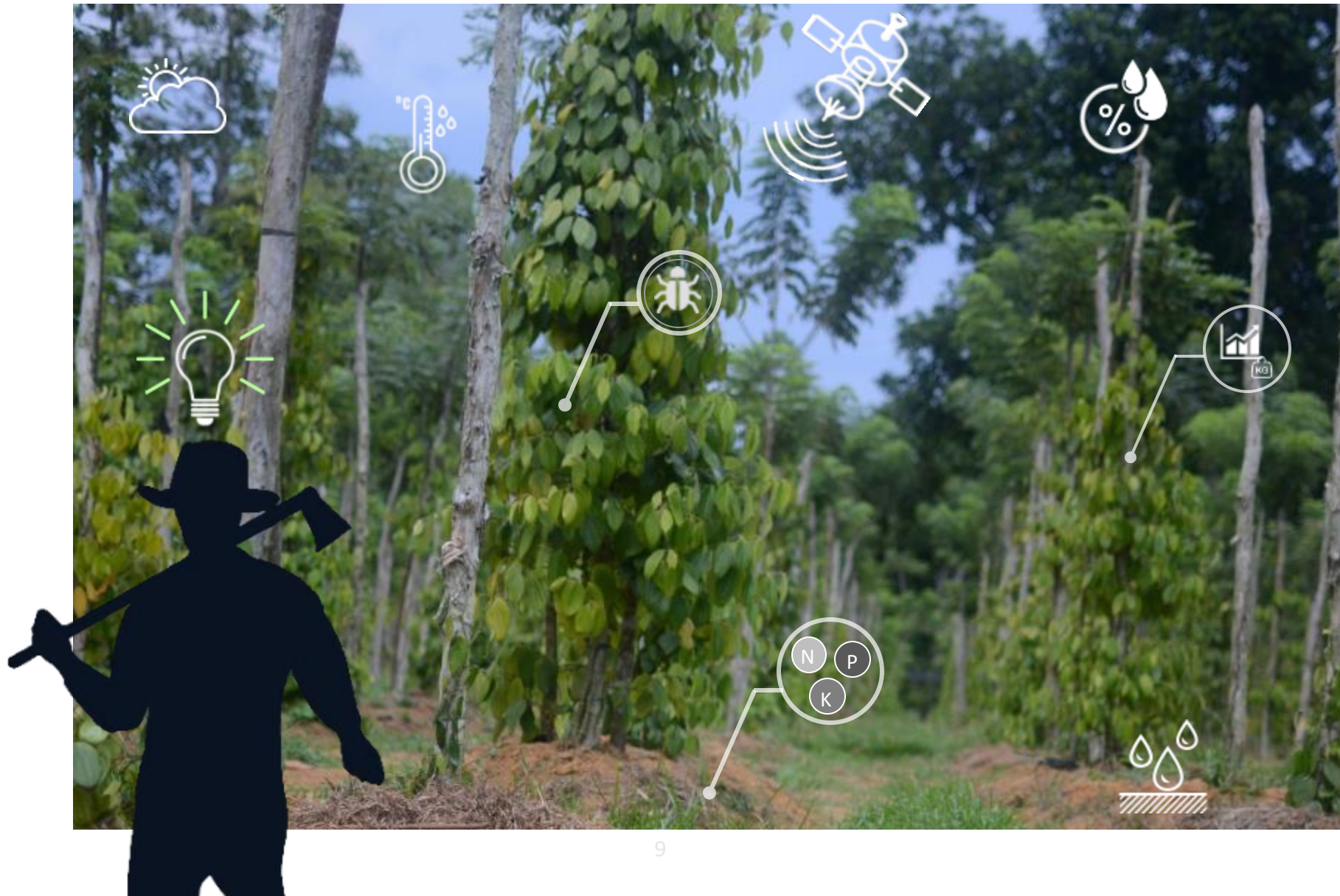


SERVICE



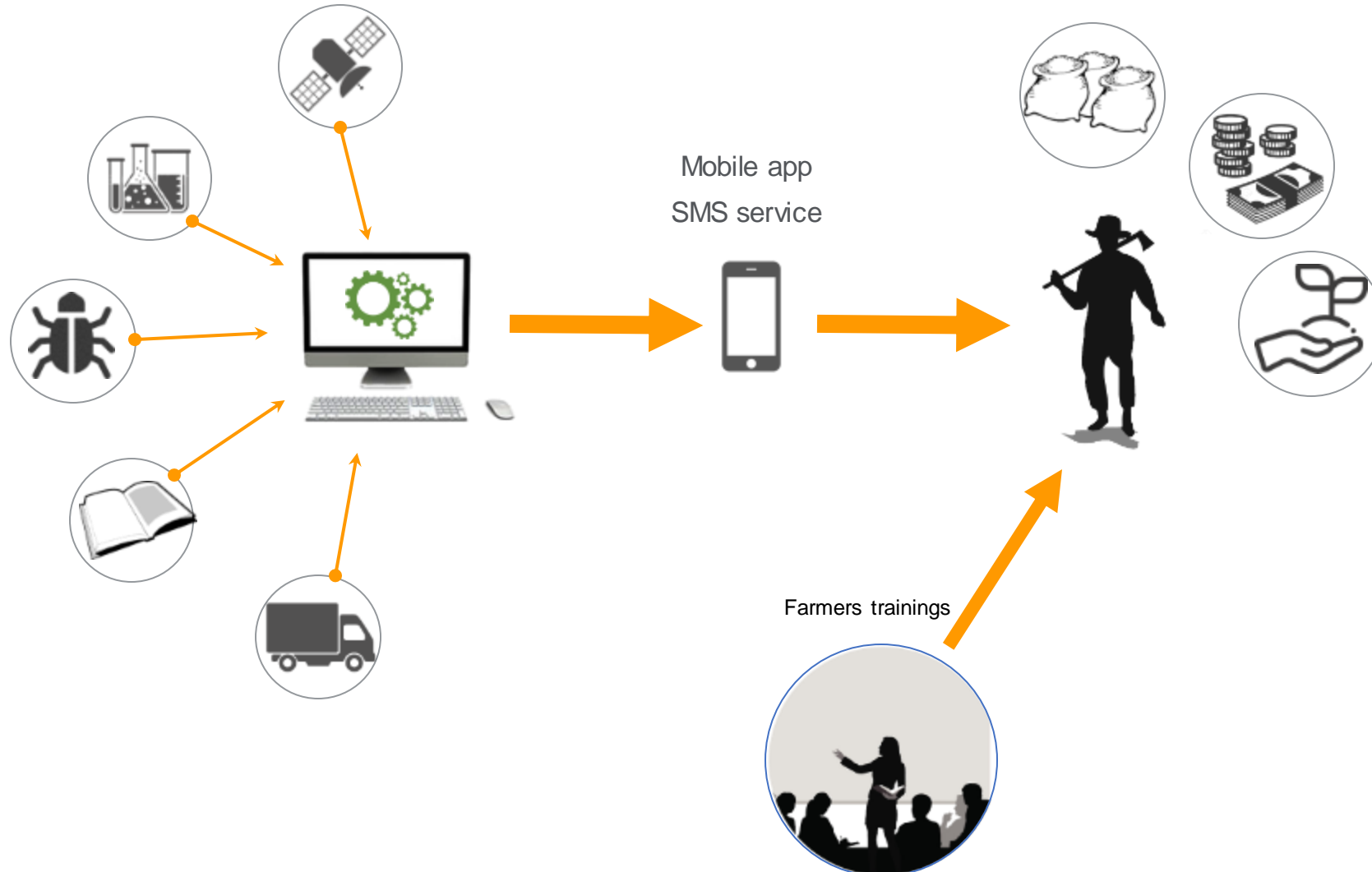


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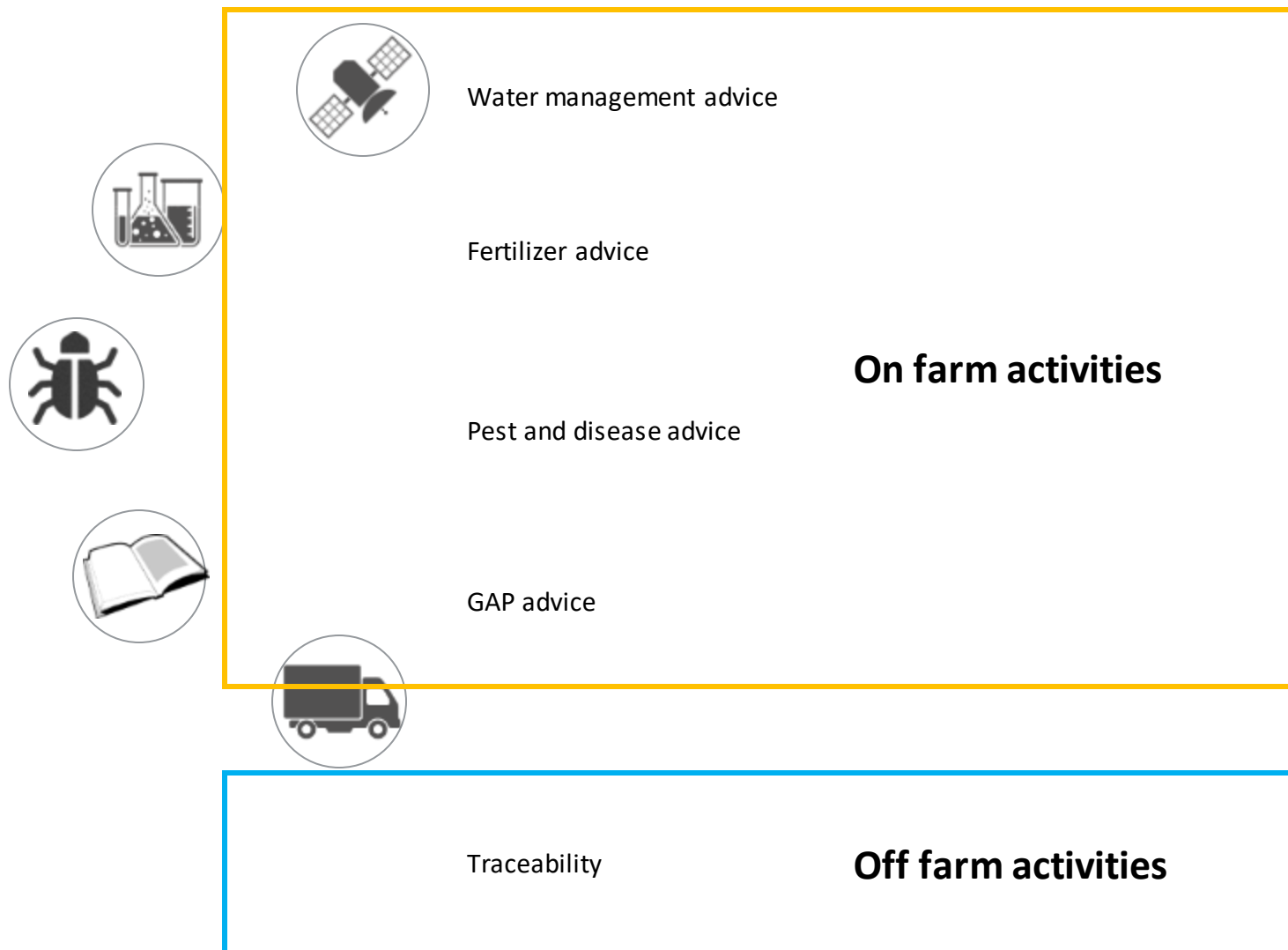


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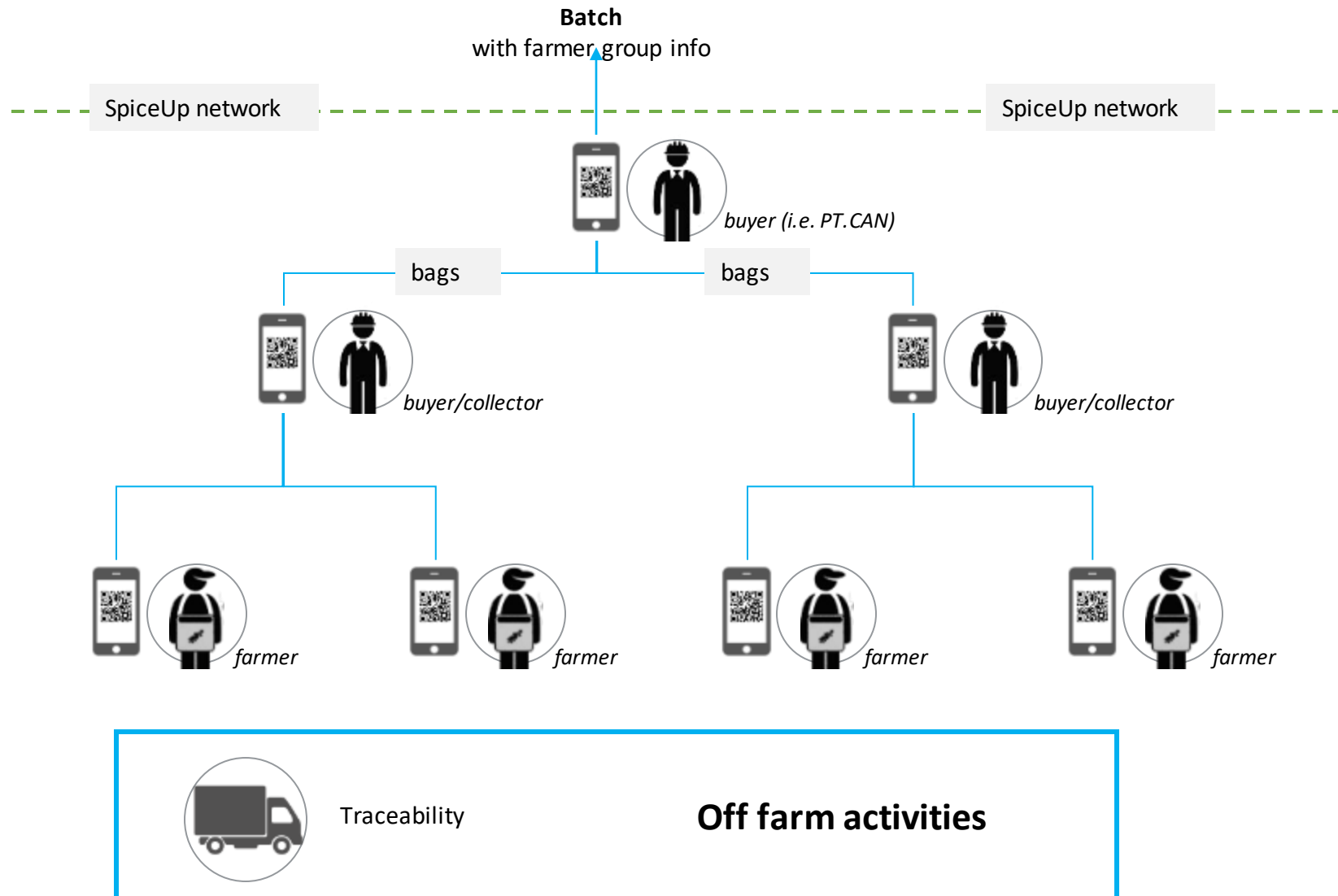


SERVICE





SERVICE





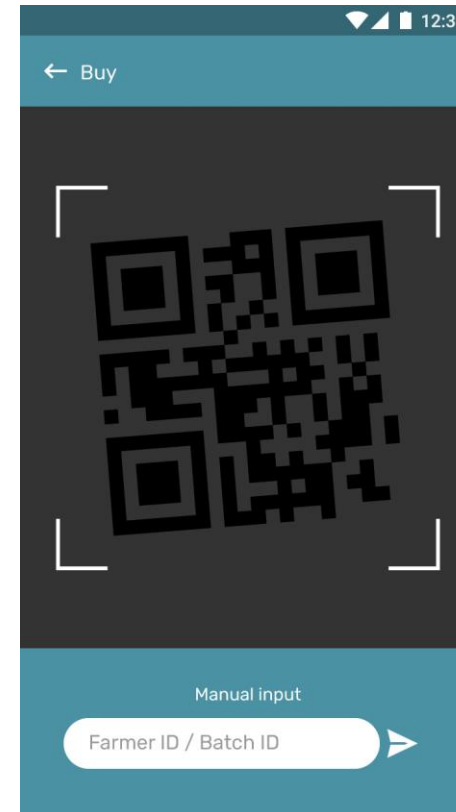
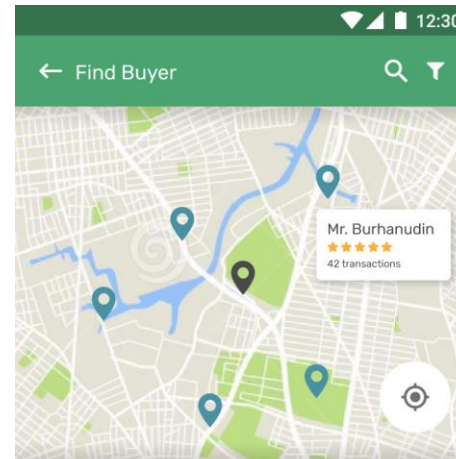
SERVICE



Find Farmer



Find Buyer

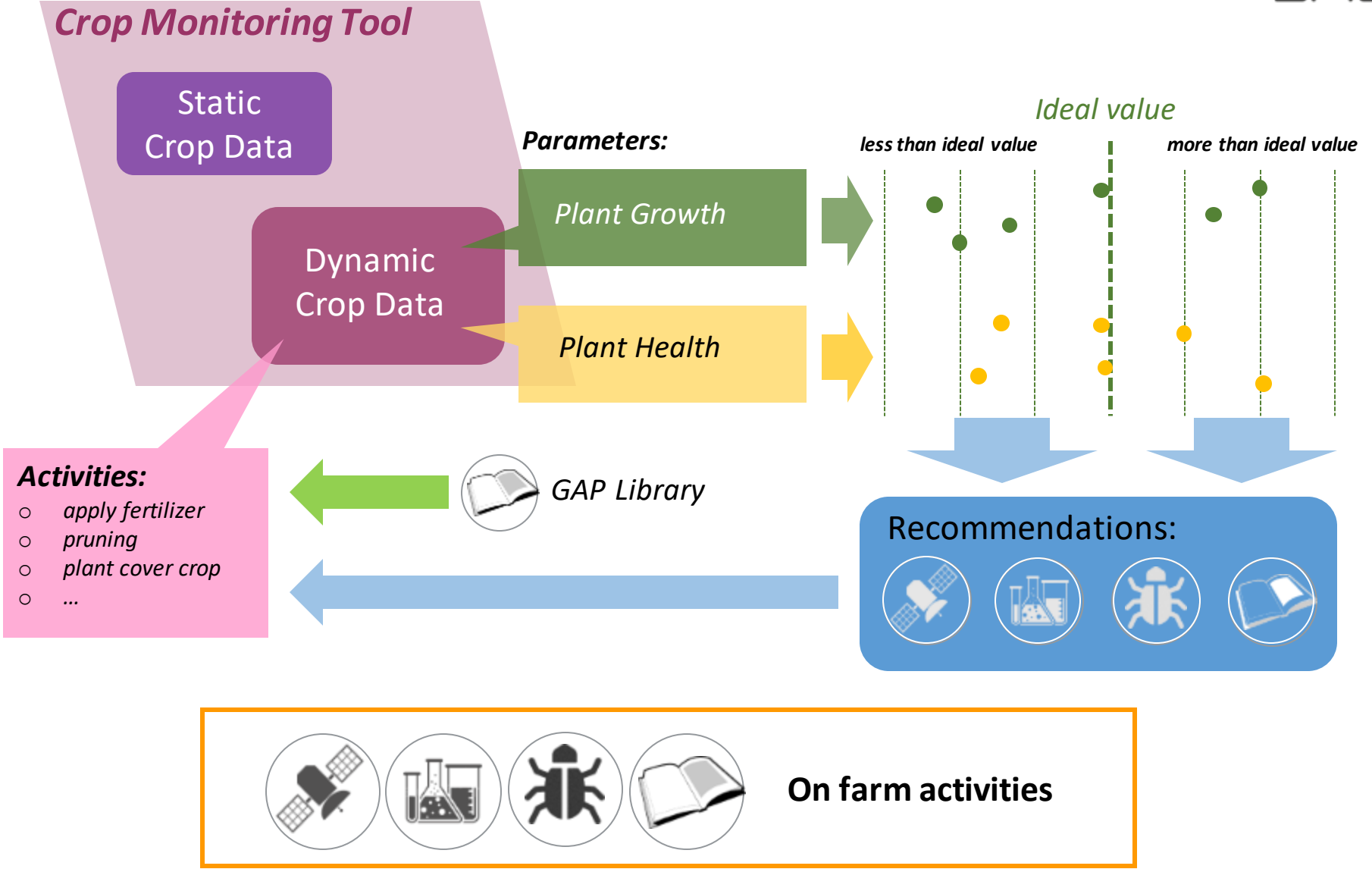


Traceability

Off farm activities

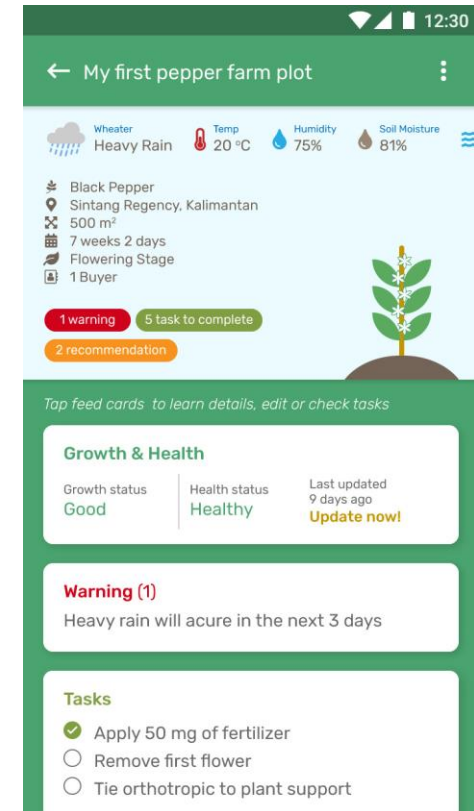
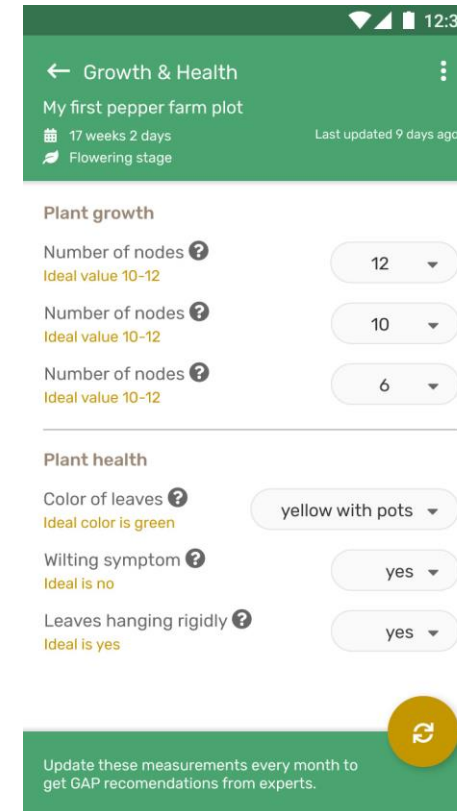
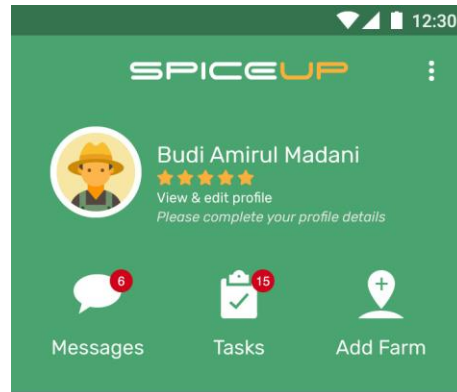


SERVICE





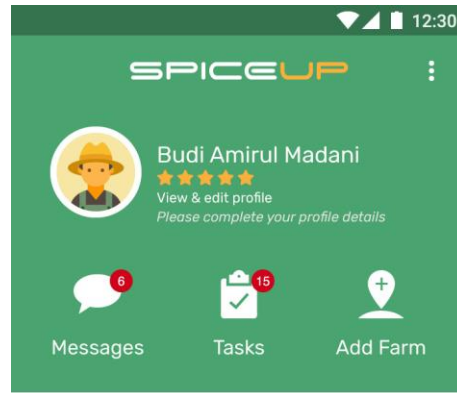
SERVICE



On farm activities



SERVICE



My Farm



Find Buyer



Learn GAP



Transaction

- **Gamification of farming** (*point and badges*)
- **Social media** (*follow farmer, post your plant grow, etc*)
- **Working offline**
- **Artificial Intelligences (AI)** for generating services
- **Plot specific recommendation**
- **B2B opportunities**





BUSINESS MODEL



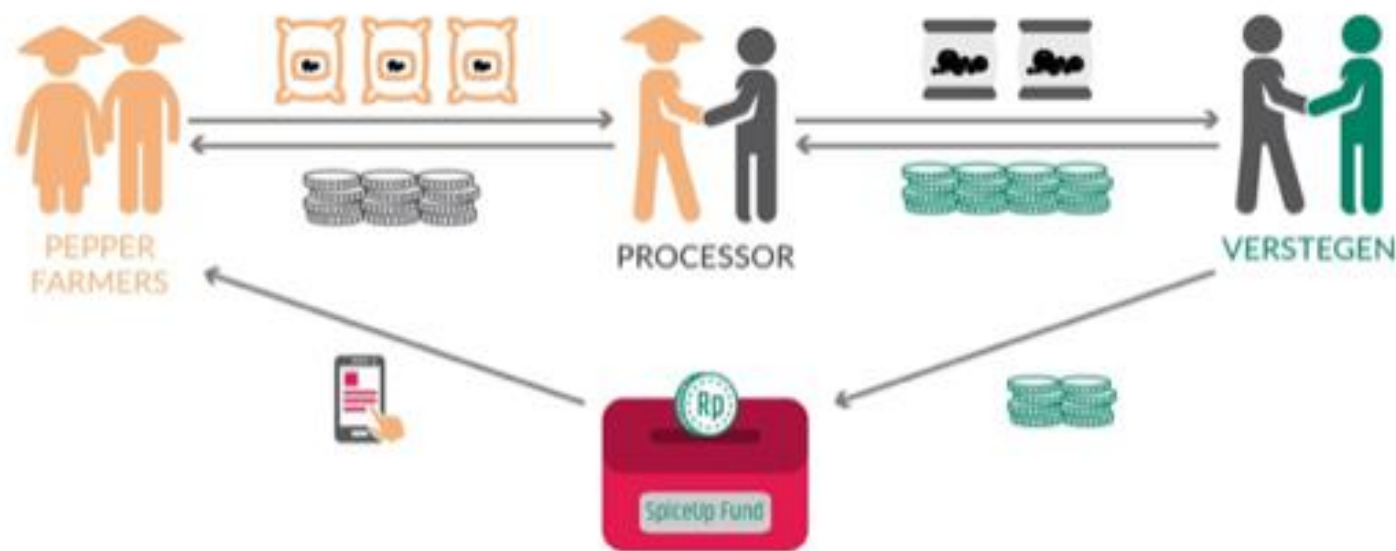
- **Loyalty** business model
- **Inclusive** business model
- **Direct revenue** business model





BUSINESS MODEL

Loyalty Business Model



- Farmers producing directly for **SpiceUp (VERSTEGEN)**
- Full traceable pepper produced by SpiceUp and sold to third party





BUSINESS MODEL



Inclusive Business Model

Agro-Inputs suppliers (Fertilizer/Pesticide)

Potential clients:

- PT Meroke
- Yara
- BASF
- Pupuk Kaltim (State Owned)
- ...



SpiceUp (PT CAN) is exploring to become an agent to supply Agro-Inputs to (pepper) farmers

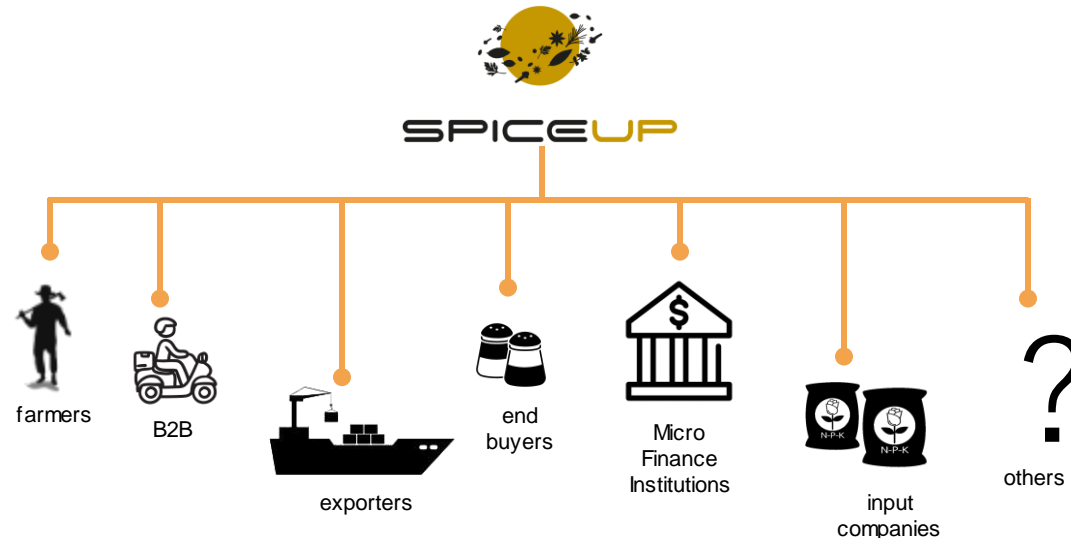




BUSINESS MODEL



Direct Revenue Business Model



Micro Finance Institutes (MFI)

- Improve Agricultural Credit Assessment Tool → reduce Non Performing Loan
- In combination with inclusive model as financing partner for farm inputs



❖ **Support new and/or existing projects with SpiceUp service:**

- Other commodities **intercropped** with pepper
- **(Pepper) projects** from third parties

Potential clients:

- Nestle
- Olam
- Harris Freeman
- Sustainable Spices Initiative (IDH)
- ...

❖ Project support with **data and service**

❖ Support **development of spices sector** in Indonesia (*government*)



CHALLENGES - SOLUTIONS



Challenges

SpiceUp Farm Service

- Pepper **prices**
- Farmers **adaptation ability** to new technology
- Tailoring **crop parameters** in the app
➔ recommendations (services)
- Acquiring **reliable ground data**:
 - Updated **soil data**
 - Reliable **inputs** from farmers



Solutions

SpiceUp Farm Service

- Focus on **productivity**
- Develop **user friendly** interface.
- Trigger **young people** to farm
- Close collaboration: **Agriculture Expert** and **IT Developer**
- **Gamification** in farming.
- **Mobile** soil test unit



CHALLENGES - SOLUTIONS

Challenges

SpiceUp B2B Service

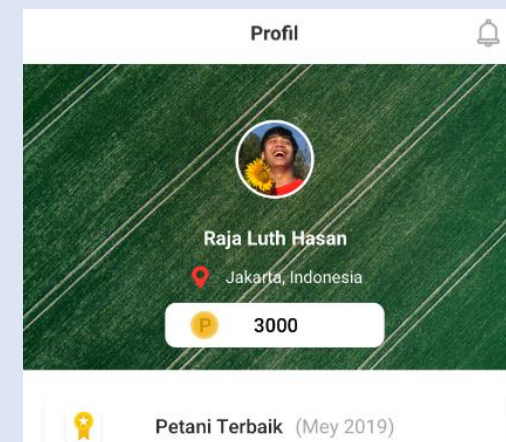
- Farm **data commercialization**
- Data **privacy**
- **Incentivizing farmers** for data



Solutions

SpiceUp B2B Service

- **Experts discussion** on data issue: event arranged for Sept 2019
- Introduce **point and badges** for users (farmers)





This is the way in which we work on our mission every day:

*Verstegen wants to make everyone enjoy
responsible and healthy but above all, tasty food.
All around the world.*



Michel Driessen

C.E.O. Verstegen Spices & Sauces

