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Bottom-Up-Down Approach

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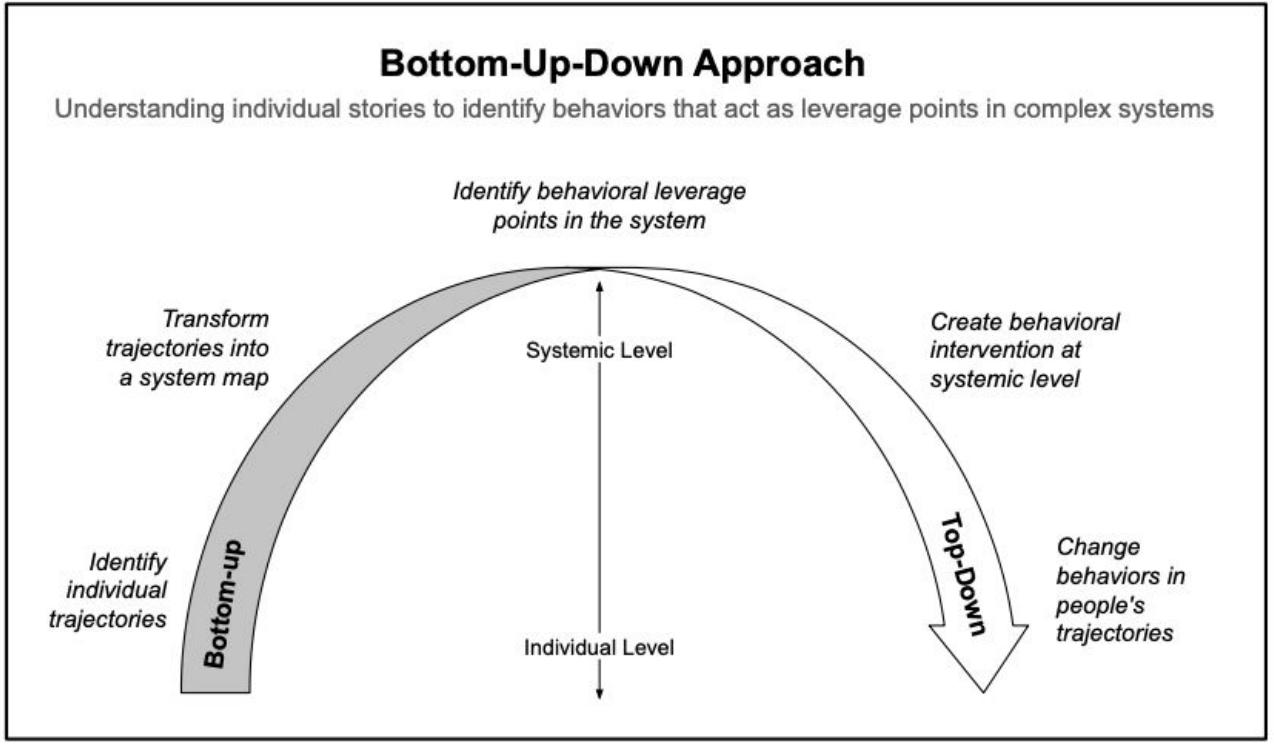
Bottom-up-down approach

Creating system maps by understanding people's stories

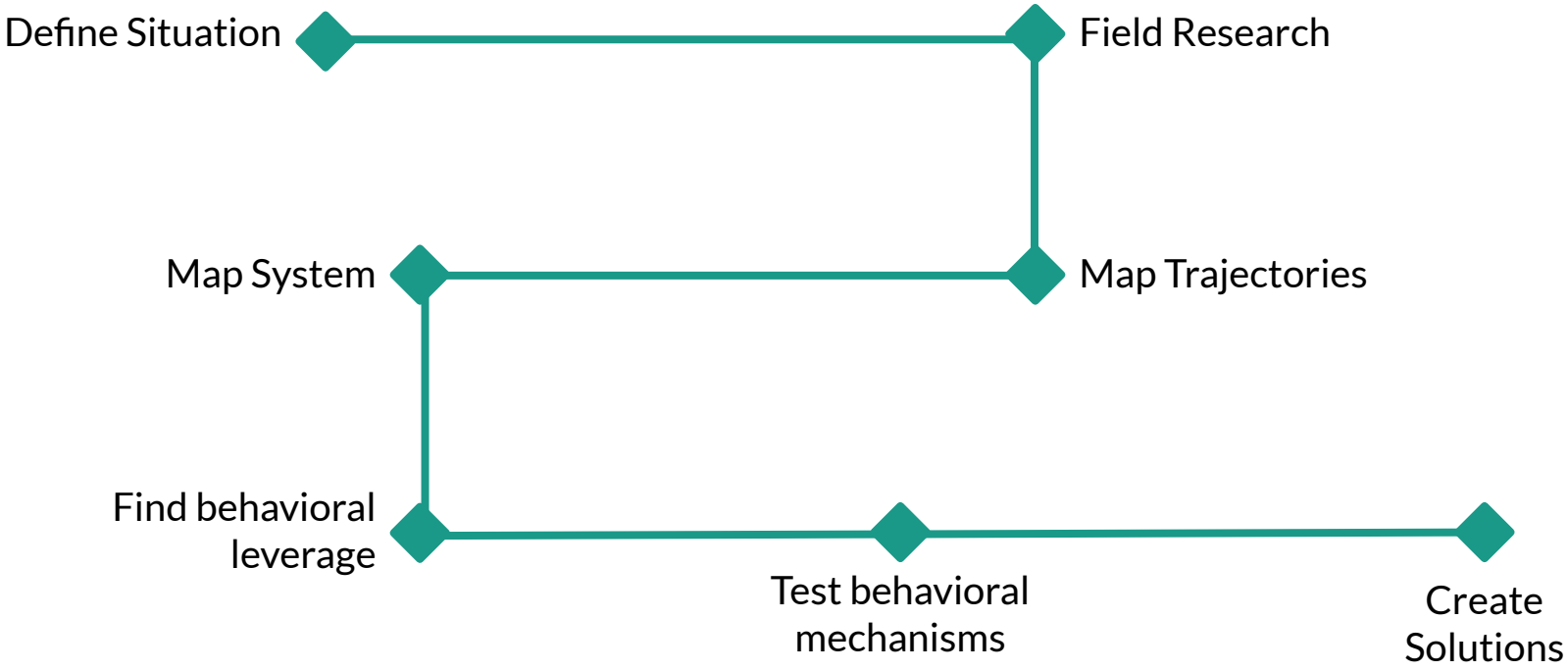
Bruno Rizardi, Daniela Metello

Overview

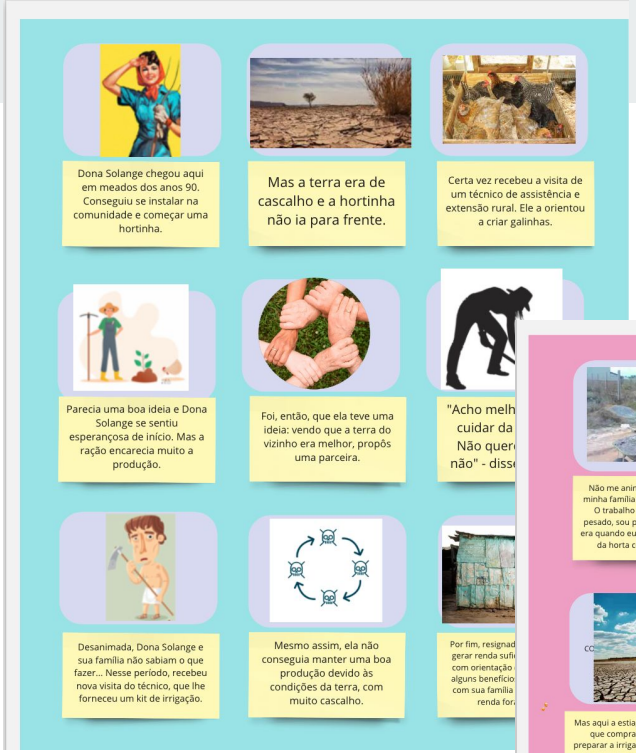
Our work was based on a **design perspective** of human experiences, a **system approach** for modeling causal loops diagrams to find **behavioral** leverage points for systemic change



The method


Define Situation
Field Research
Map System
Map Trajectories
Find behavioral leverage
Test behavioral mechanisms
Create Solutions

System Mapping

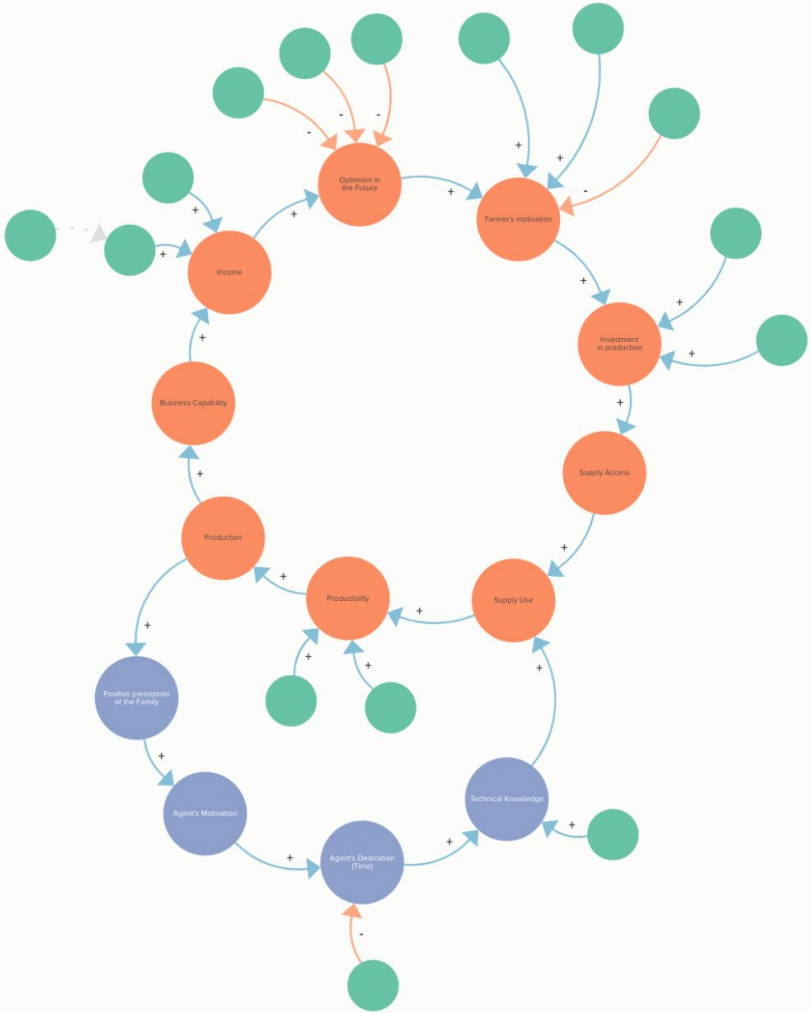


Typical case trajectory (not successful)

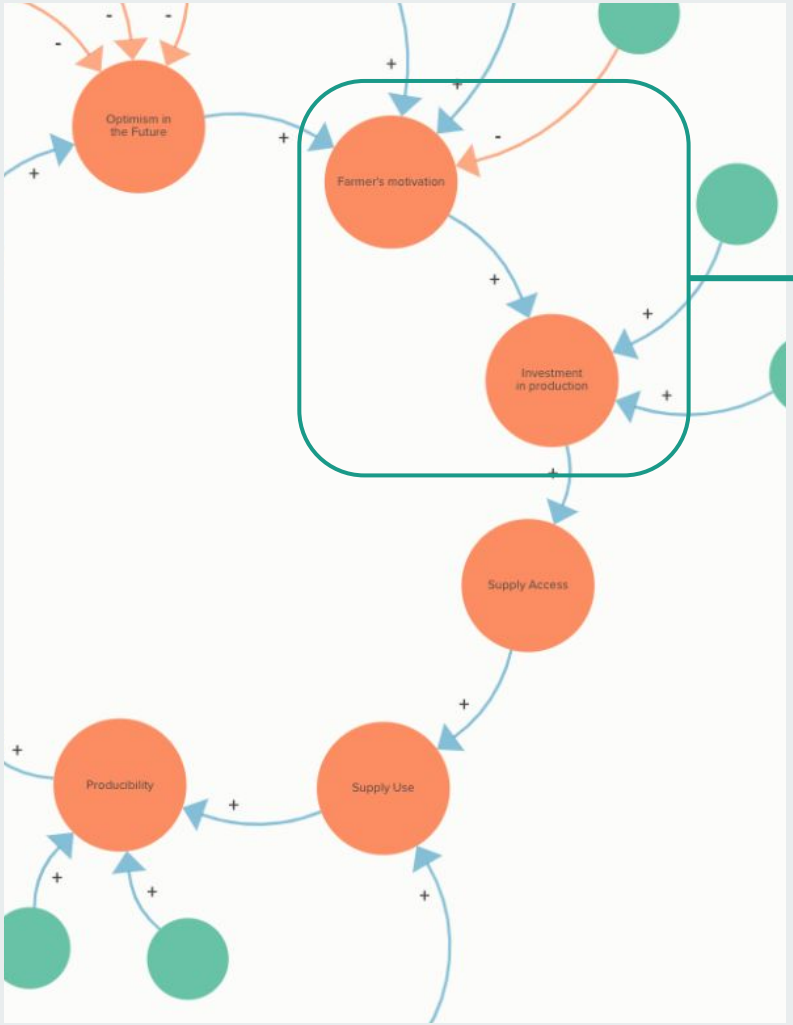
Positive deviant trajectory (successful)

We mapped both successful and unsuccessful trajectories do determine which variables were relevant for our system map.

By tracking how these both trajectories intersected, we were able to identify important variables and turning points for each case, composing a system using user's stories.


Optimism in the Future
Farmer's motivation
Income
Investment in production
Business Capability
Supply Access
Production
Producibility
Supply Use
Positive perception of the Family
Agent's Motivation
Technical Knowledge
Agent's Dedication (Time)

Behavioral Testing



The leverage point (place in the system with potential to enact systemic change) was based on where the user had ***agency***, meaning where in the system decision-making played an important role to determine the variable.

Those decision-making moments are behavioral leverage points, combining both ***agency*** and ***systemic-level change potential***.

Behavioral Testing

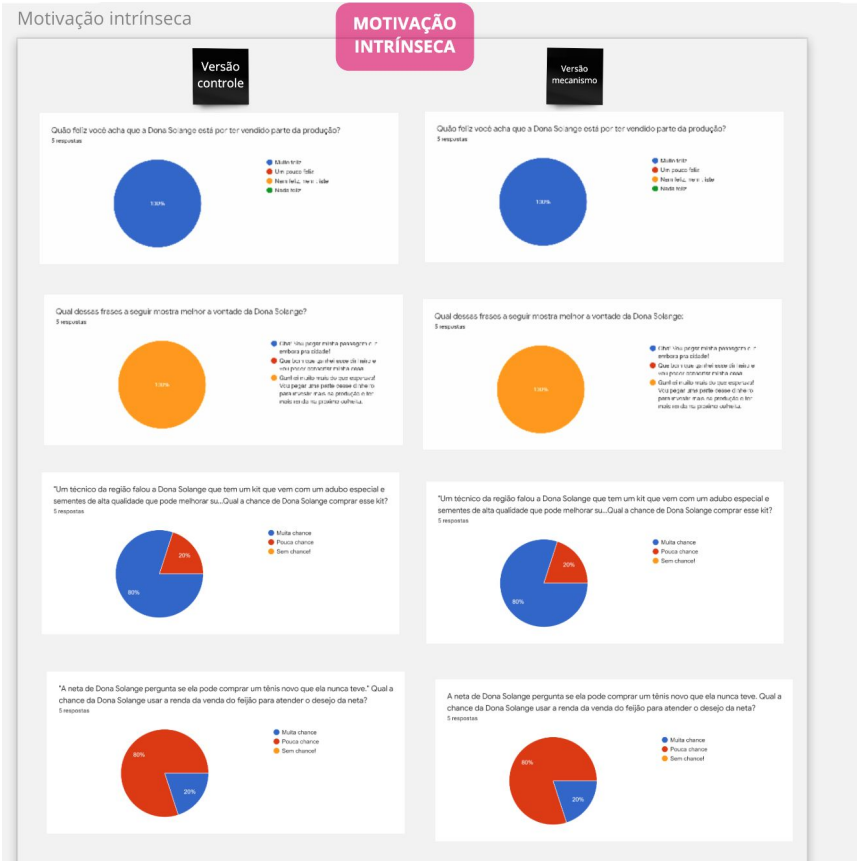
To identify the behavioral mechanisms that could create change, we designed a test with vignettes.

The vignettes comprised a standard story and a test version which varied according to the behavioral element that would be tested - mental model, selective learning and intrinsic motivation.

The farmers answered questions about the 2 versions so we could compare the results.

Intrinsic Motivation

No significant change was found between control and treatment tests.

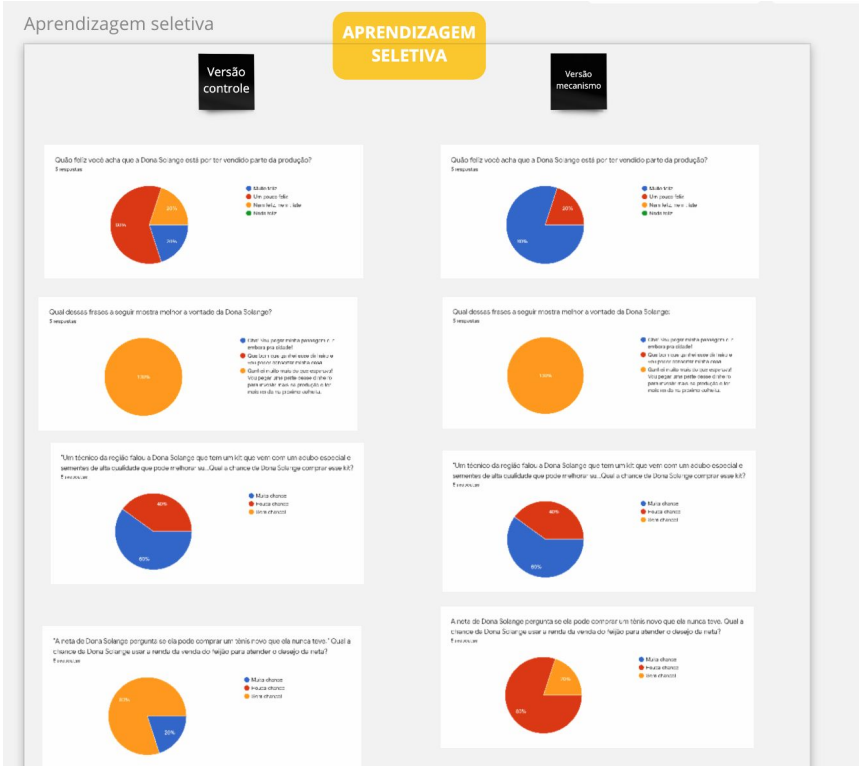


Mental Models

Mental models showed negative results.

Selective Learning

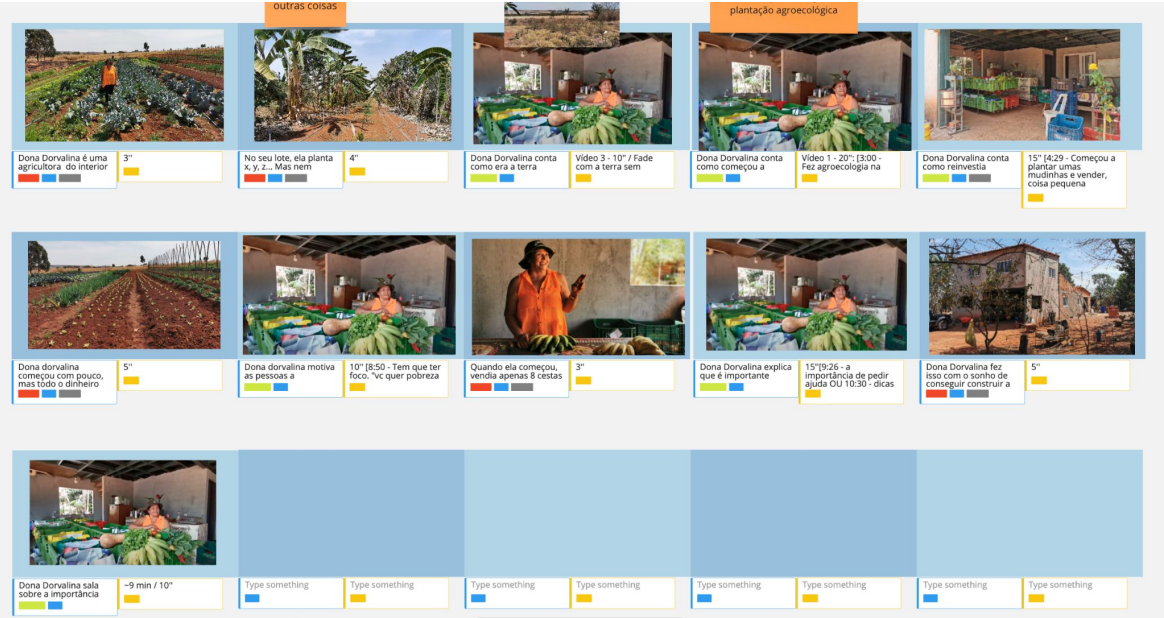
Selective learning showed a significant variation.



Solution prototyping

The team designed a peer-to-peer learning experience, using positive deviant role models to change peers' mental model and teach new techniques

We are testing a video with a successful story



Conclusions

- The relationship between behavioral sciences and systemic design has proven to be quite promising;
- It is possible to identify people's key behaviors that seem to have systemic impacts - the use of vignettes has shown good results;
- It is important to test which mechanisms can leverage behavioral changes;
- The use of contrasts between positive deviances/typical case shows what are the key factors in systems;
- If possible, it is important to test different levers to find the most promising.

Thank you!

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