

Understanding niche innovation systems for plastic revaluation set up by universities and NGOs

Patricia Wolf, Julie Harboe, Catherine Rothbarth, Urs Gaudenz, Chris Obrist, Manon van Leeuwen and Leyla Arsan

Empowering Niches – literature

For empowering radical change in a regional system, the focus of governing actors should be on **establishing and empowering niches** (complexity theory-based).

There are, at least, two types of **institutions with a special potential to empower** dispersed and grassroots driven sustainable development initiatives:

Universities: key drivers in societal change. They are able to identify transformations at an early stage with civil society actors and local communities

NGOS: capable to act as “bridging organizations” pushing changes in systems and supporting societal actors to work on social development challenges

Research question

What kind of **niche set up process** governed by universities and NGOs empowers dispersed grassroots communities to align local action in sustainable development initiatives?

Challenges involved:

- 1) Structure, cultures and practices of a local system are difficult to change because of the **complex adaptive system patterns regional systems exhibit**;
- 2) Financial **resources** and mechanisms are not available to the same extent to universities and NGOs action on their own;
- 3) **Grassroots reception** of coordinated and aligned actions regarding development strategies.

Methods

Qualitative research design for an exploratory research question (Flick, 2009)

Complexity theory perspective prescribes a focus on the interactions between universities and NGOs over the period of the niche set up process.

Comparative case study for studying and comparing development process which are bounded by time and place (Creswell, 1998).

Methods

1. Sampling

Three pilot initiatives of the EU Project “**Plastic Twist**”:

 Switzerland
(**University**)

 Netherlands (**NGO**)  Greece (**NGO**)



Revalue recycled plastic, using an open platform environment with blockchain

Bottom-up approach:

Jan/2018 to March/2019 – Grow locally

from April/2019 – connect via the global platform

Methods

2. Data Collection

Data from **January 2018 to March 2019**, before the global platform was launched.

45 pages of text containing internal and external project communication about the pilot initiatives

3 **Problem-centered interviews** (Witzel, 2000) with representatives from the pilots asking them to describe the journey they went through when they set up their niche.

Semi-structured interview guideline: main activities and important actors?

Methods

3. Data analysis

Qualitative coding

Innovation journeys: Maps relating events to actors and points in time

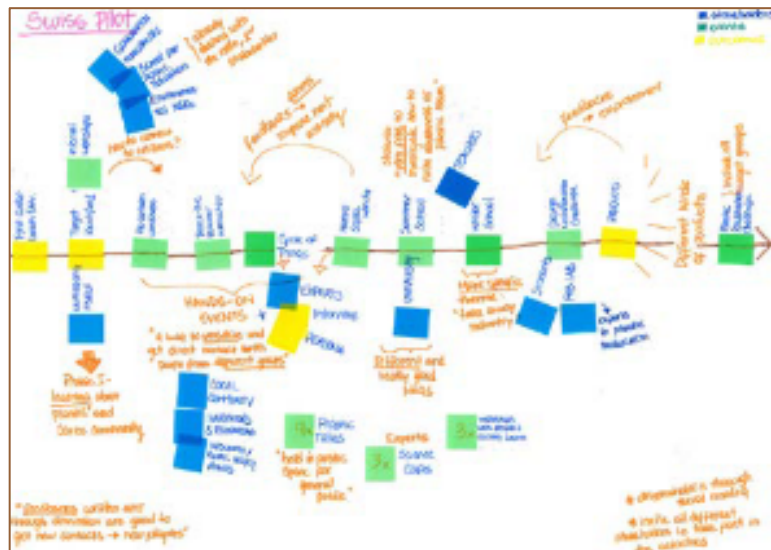


Fig. 1: Swiss innovation journey

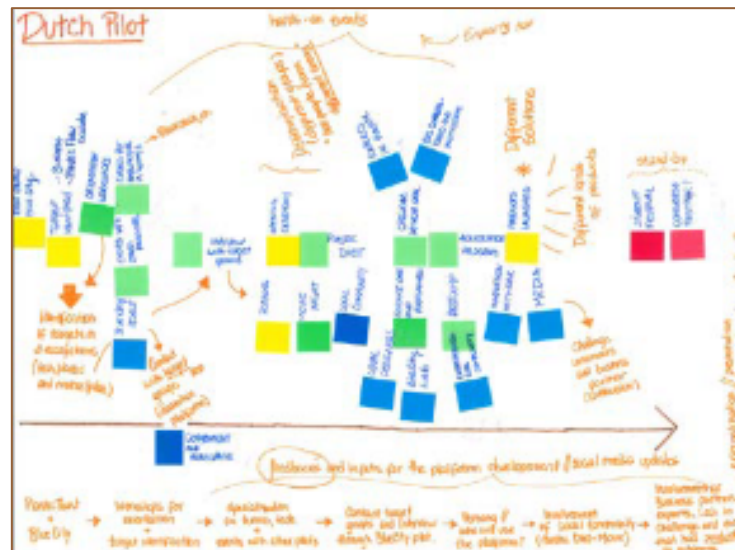


Fig. 2: Dutch innovation journey

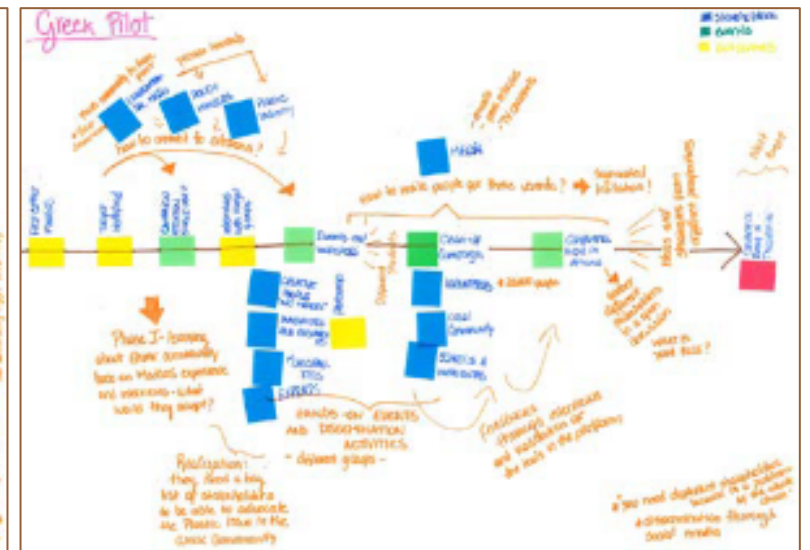


Fig. 3: Greek innovation journey

Findings

1. Set up phases

Phase 1



- Learn about members of the local community, their level of awareness related to plastic and expectations;
- Find target groups
- Create Personas

Phase 2



- Get in touch with target groups
- Organize workshops and events

Phase 3

- Design more specific events
- Create challenges for plastic revaluation. Ex: Winter School

Findings

2. Common characteristics across the three cases

- 1) **Stay Flexible.** General plans in form of work packages left flexibility to adopt the activities to the wishes and needs of grassroots communities. Feedback contribution.
- 2) **Personalized bonds.** Targeting different groups with a personalized communication. Events were held separately to allow focusing in diverse players every time.
- 3) **Go hands-on.** Bootcamps and Science Cafes. Plastic Diet from the Dutch Pilot, Design Collaboration Challenge in Switzerland and the Greek Clean-up campaign.
- 4) **Open up to variance.** All ideas and approaches were equally welcomed and encouraged. Goal was not to create a single best solution.
- 5) **Never walk alone.** Involving not just citizens but also other stakeholders like themselves (other NGOs or Universities).

Discussion

Open, personalized and flexible approach led to:

- the emergence of a **multicity of patterns of participation** and alignment of formerly dispersed actors (without need of direct interaction) □ **awareness** of citizens and initiatives about that they are acting alike with others who also care for plastic revaluation;
- the **acceptance** of the university and/NGOs as coordinators at regional level □ freedom to join the process and the opportunity to **provide feedback and see changes** based on this feedback in almost real-time (what is important to the communities);
- approach **compensated for the missing authoritarian** power of the universities and NGOs to implement change top-down

Conclusion and limitations

The pilots stimulated a high variance of different interaction patterns that **all led into the same direction.**

We confirm that, in general, grassroots innovations develop and diffuse **“in quite different ways to conventional innovations”** (Seyfang and Longhurst’s, 2013)

□ They create more **fragmentation and variety** instead of the theory-based predicted consolidation and coherence.

As our research was a single project on a single topic, we invite further studies to investigate whether this is a general pattern in sustainable developments initiatives.

Thank you very much for your attention

Any questions/comments?