

Real time impact assessment for transformational research – Putting theories on the testbed

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EU-SPRI Forum, Rome 7 June 2019, Special session

“Real-time impact assessment for transformational research and innovation”



The challenge

- Public research and funding organisations are challenged to orient towards missions.
- Mission-oriented organisations are not new, but the context in which they operate is changing
- With a recent orientation towards broadly defined SDGs, with a variety of (often poorly) articulated potential solutions, PROs have to make choices and understand whether they are achieving their aims...
 - DO THEY GENERATE DESIRABLE IMPACTS?
 - DO THEY HAVE THE APPROPRIATE STRATEGIC INTELLIGENCE TO STEER IN REAL-TIME IF THEY ARE “OFF-TRACK”

Introduction

Our definition:

Transformational research relates to situations where the desired transformations (impacts) are well identified but the ways to achieve them are unknown because transformative changes are needed.

Key features:

- Directionality
- System change
- Complexity, emergence
- Non linear processes
- Learning (simple and double loops)

Introduction

Why real time impact assessment is needed?

- The need to align research and social needs (translation processes)
- The need to provide frames and devices for coordinating a diverse and complex set of activities
- The need to articulate top down process (directionality) and bottom up initiatives (research creativity)
- The need to balance exploration (new niches experiments) and exploitation (generalisation – scaling up and out)

Introduction

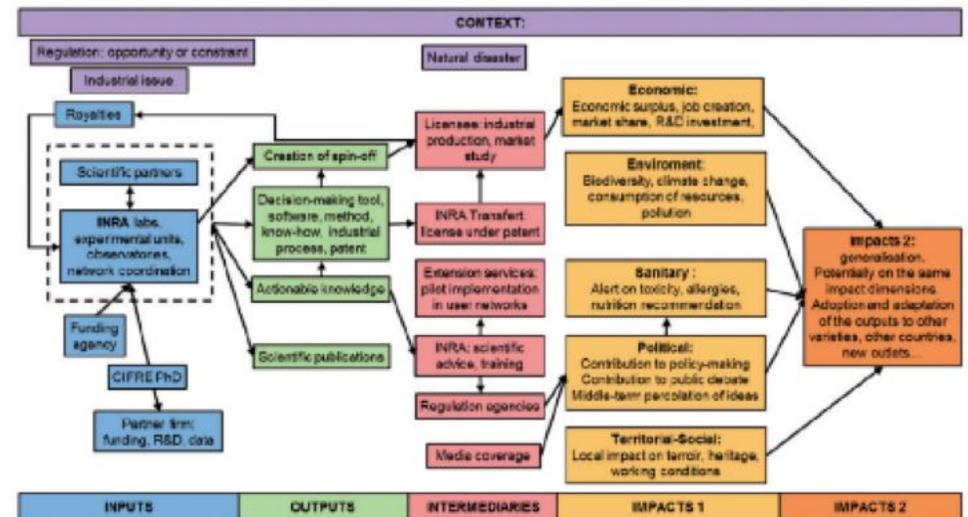
Our strategy:

- First step: On the basis of the literature and Asirpa ex post, define the general requirements for the real time approach;
- Second step: organise testbeds to experiment this provisional approach, learn from these experiments and fine tune the approach
- Third step: Back to the theory

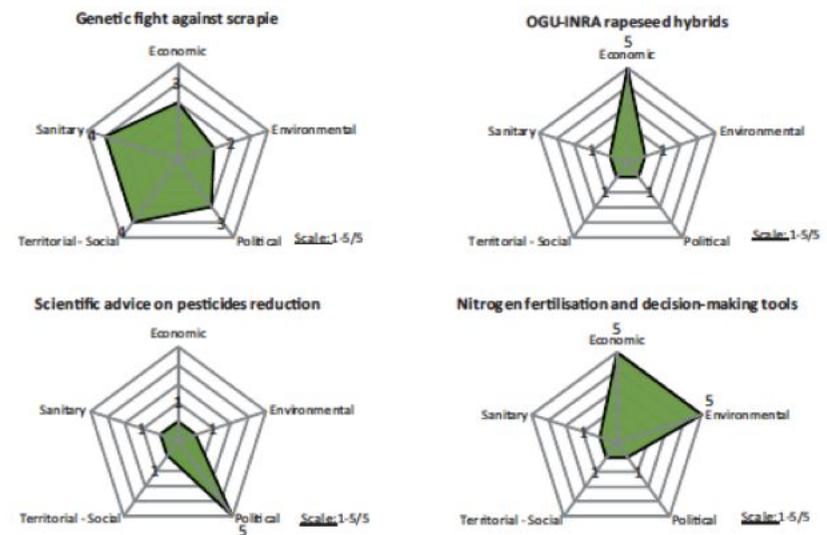
TOWARD A FRAMEWORK FOR REAL TIME IMPACT ASSESSMENT

Asirpa ex post

- A standardised approach for ex post impact assessment
- 50 case studies
- Implemented on a routine base at Inra
- Training activities (MOOC)



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The main lessons from ASIRPA ex post

Main characteristics of the genesis of impact

- Complexity
 - Productive interactions: diversity of actors and material resources that produce impacts;
 - Impact produced by a set of activities rarely brought together in a single project;
 - Different levels of nestedness.
- Uncertainty
 - Role of the external context which can have facilitating or blocking effects, and open or close, sometimes suddenly, windows of opportunity;
 - Critical points along the impact pathway (with a special role of intermediaries and the process of generalization).
- Temporality
 - The long temporalities of the impact (20 years on average between the initiation of research and the first impacts, with important variations);
 - Dual temporality (time of impact pathway v. time of the project).
- The need to prioritize learning and develop a culture of impact among researchers

From ex post to real time assessment - Back to ToC?

ToC = a heterogeneous set of approaches

Mayne 2015

program theory, logic model, theory of change, results chain, outcome pathway, action theory, implementation theory

Rogers 2012

Programme theory, variously referred to as programme theory, programme logic (Funnell, 1997), theory-based evaluation or theory of change (Weiss, 1995, 1998), theory-driven evaluation (Chen, 1990), theory-of-action (Schorr, 1997), intervention logic (Nagarajan and Vanheukelen, 1997), impact pathway analysis (Douthwaite et al., 2003b), and programme theory-driven evaluation science (Donaldson, 2005)

- Basic definition: Theories of change are models of how change is expected to happen. Theories of change represent how and why it is expected that an intervention will contribute to an intended result.

Representation of:

- (a) the causal pathway from activities to outputs to a sequence of outcomes to impacts (impact pathway)
- (b) the causal assumptions showing why and under what conditions the various links in the causal pathway are expected to work. (Mayne 2015: 121)

Two core issues:

- How to cope with complexity/emergence (whereas ToC rests on the identification of causalities)?

Rogers (2012)

- Recursivity
- Tipping points
- Integration of different viewpoints

What about emergence and system change?

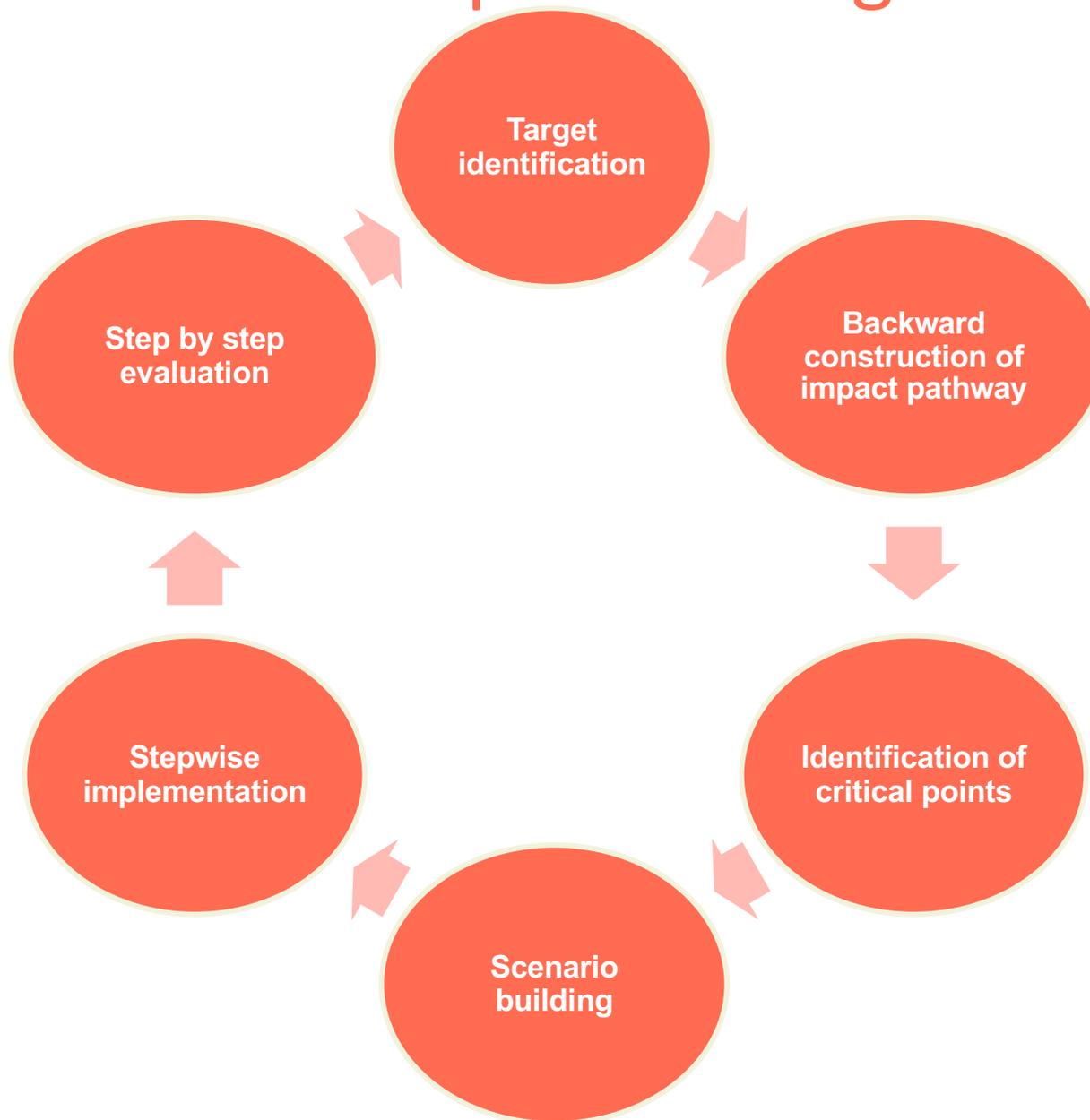
Two core issues:

- How to cope with complexity/emergence (whereas ToC rests on identification of causalities in the current state of the system)?
- How to integrate information growth?

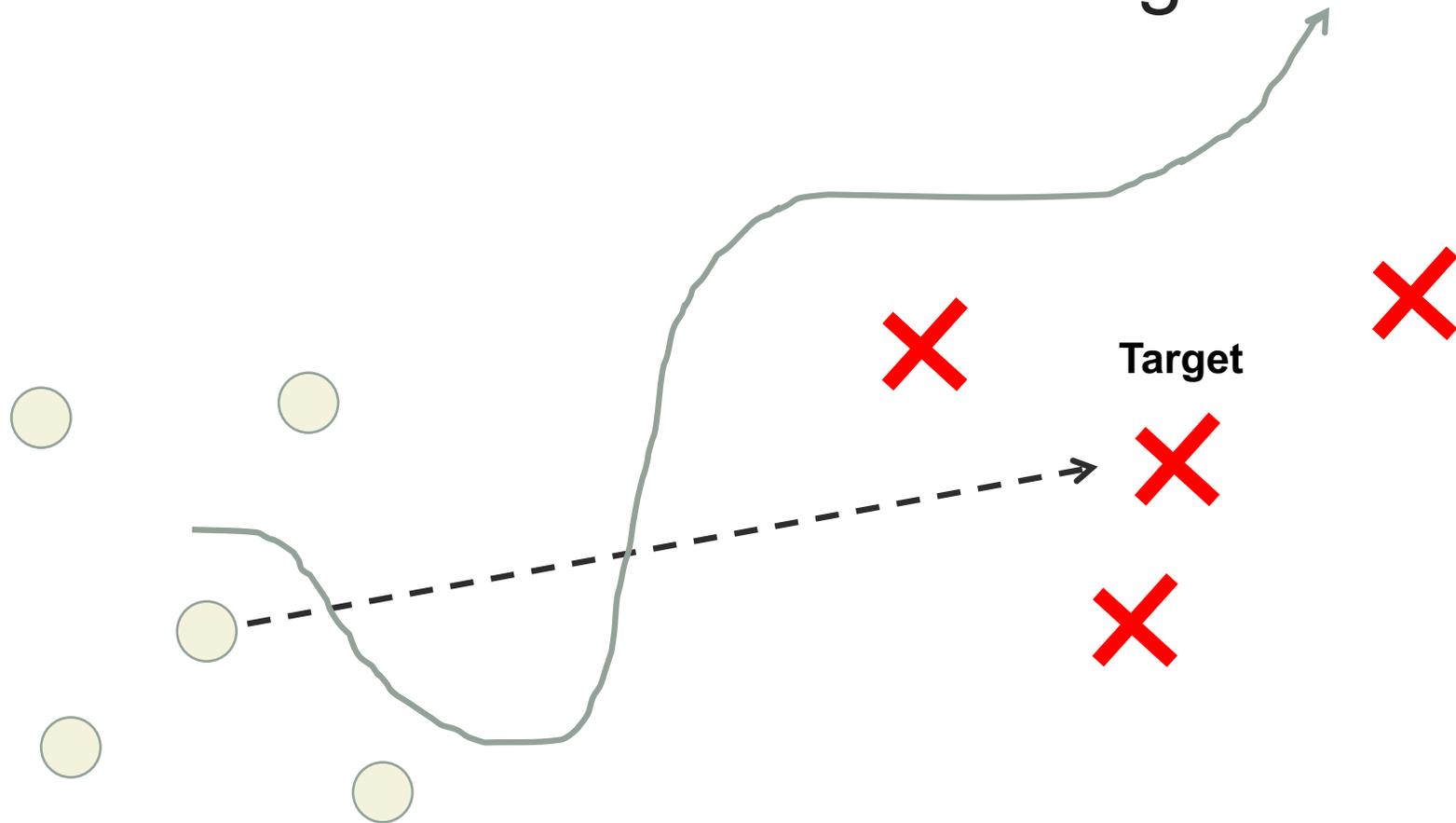
Our suggestions

- Design an iterative approach
- Adopt a principle of parcimony of information
- Dual approach: Long term ambition/ short term key activities

The ASIRPA^{rt} approach – Formative assessment and adaptive management



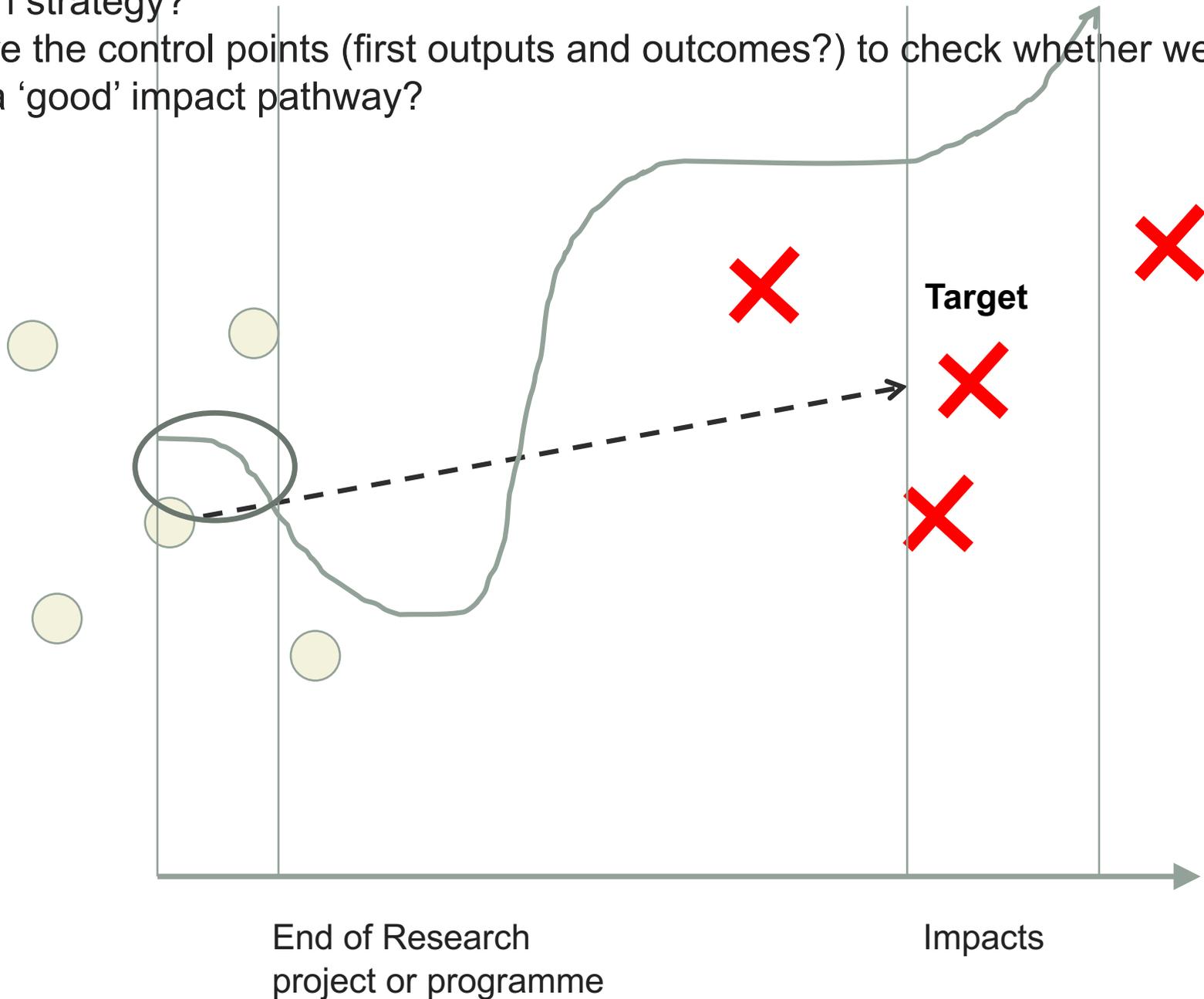
Start with the identification of a target ...



... which has to be considered as a 'rational myth' (because of emergence)

How to cope with the temporal dimension?

- How ex ante ToC and representation of impact pathway may influence the research strategy?
- What are the control points (first outputs and outcomes?) to check whether we are on a 'good' impact pathway?



DESIGNING AND EXPERIMENTING – OUR TESTBED APPROACH

Introduction

- The need to drastically reduce pesticides in agriculture (*Toward free pesticides agriculture*) leads to design and implement ambitious research programmes
- French “Programme prioritaire de recherche - Cultiver et protéger autrement” launched on June 5th
(30 M€, 6 years)



PROPOSITIONS POUR UN PROGRAMME PRIORITAIRE DE RECHERCHE

« CULTIVER ET PROTÉGER AUTREMENT »

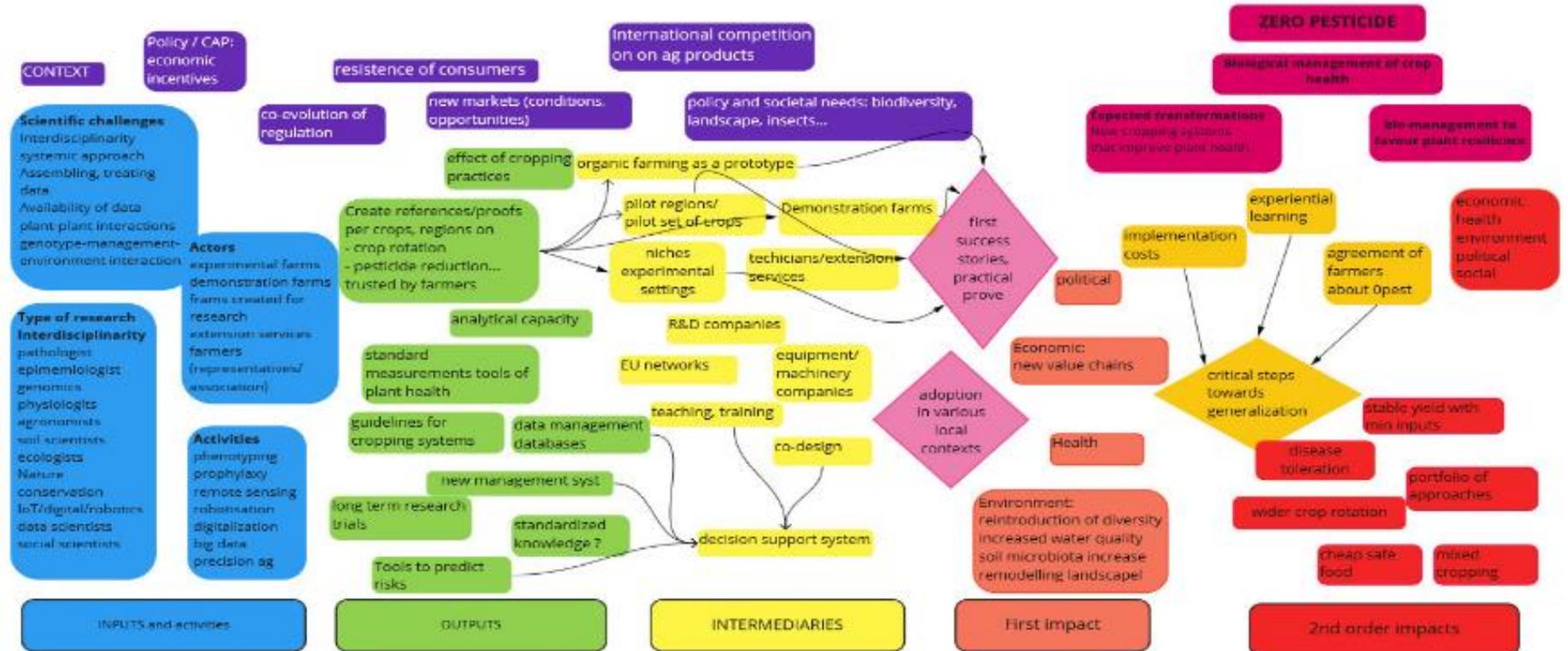
Alternative aux phytosanitaires : mobiliser les leviers de l'agroécologie, du biocontrôle et de la prophylaxie pour une agriculture performante et durable

Our first workshop

- Step 1: definition of the transformation target(s)
- Step 2: identification of the transformations that may be achieved in the 6 years period
- Step3: scientific and technical knowledge that may contribute to these transformations
Position of the project/program in its ecosystem (analysis of specific contribution / identification of complementary or antagonic projects, strategies or policies)
- Step 4: identification of blocking factors along the pathway and in the environment of the programme
- Step 5: First draft of an impact pathway; imagination of associated narratives

First experimentation

- 1 day WS on April 25th
- 2 groups of 8 researchers (agronomy, plant sciences, microbiology, SSH)
- Design of IP related to two specific challenges of
- Report of the WS presented at an international seminar on the issue in Berlin



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Main lessons for the research programs

- ***Credibility of the transformative policy is crucial.*** The research programme has to contribute to the credibility cycle. Need to identify number of transformation objectives:
 - That can be achieved quickly,
 - That will have a strong demonstration effect,
 - For which different stakeholders can be interested.
- ***Identification of lock-in and blocking (f)actors,*** e.g.:
 - Researchers (“need to change the culture of researchers”)
 - Regulation
 - (...)
- ***Interestment and enrolment of actors.*** Need of economic incentives/market creation to involve actors concerned and initiate the transition processes, e.g.:
 - Complementary innovations that can improve the efficiency of new cropping systems,
 - Market segmentation that will allow a premium to be granted;
 - The production of agronomic and economic references on crop rotation, pesticide reduction ... upon which farmers could trust to change their practices.
- ***Coping with complexity and uncertainty*** requires dynamic flexibility of the research programme.

CONCLUSIONS

What has been achieved at this stage?

- A first outline of the approach
- A first testbed that allows to:
 - Improve the approach
 - Learn some general lessons on transformative research

What's next?

1. We are embedded in the French research programme with the aim to design and implement the real time approach:

Iterative exercise at different stages of the programme :

- More sophisticated IP, different levels of granularity
- Prioritization of activities and actions
- Interactions between projects...

2. Other testbeds ongoing (Learning and improving « expected impact » in Europea projects, etc.)

3. Back to the theory, development of the approach and tool

4. The challenge of the change of culture of researchers and research organisations



Thanks for your attention!