Agricultural systems
by design

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IN AGRIFOOD SYSTEMS

A Conceptual And Analytical Framework To Understand Lock-Ins In The Agrifood Systems Transition

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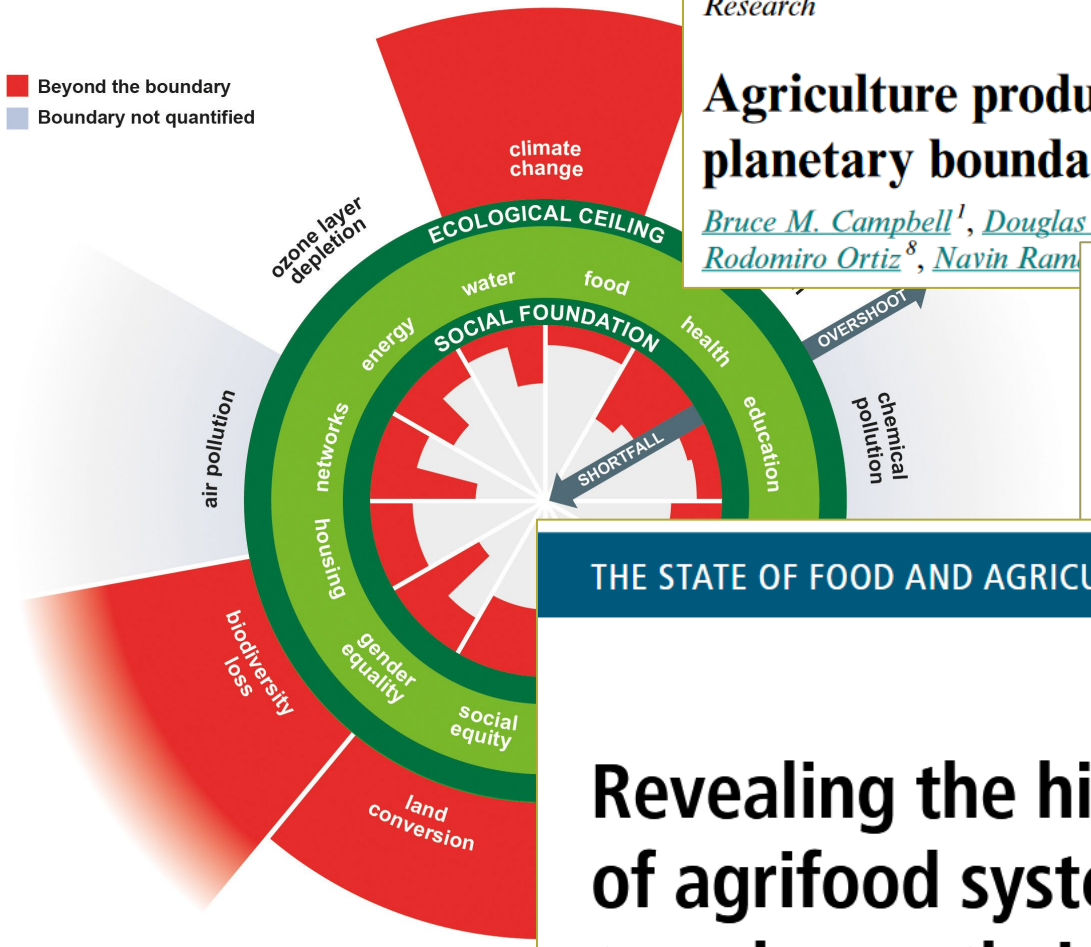
Current agrifood systems have widespread negative externalities



Research

Agriculture production as a major driver of the Earth system exceeding planetary boundaries

Bruce M. Campbell[1], Douglas J. Beare[1], Elena M. Bennett[2], Jason M. Hall-Spencer[3,4], John S. I. Ingram[5], Fernando Jaramillo[6,7], Rodomiro Ortiz[8], Navin Ram

The social costs of pesticide use in France

Delphine Mc Adams-Marin[1],
d Philippe V. Baret[2*]

étale d'Intérêt Collectif, Paris, France, [2]SYTRA—Earth and Life
catholique de Louvain (UCLouvain), Louvain-la-Neuve, Belgium

THE STATE OF FOOD AND AGRICULTURE

Revealing the hidden costs of agrifood systems to enhance their value

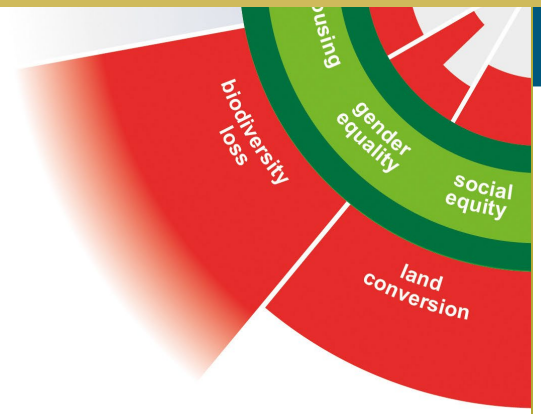
They need to transition towards more sustainability

Research

Agriculture production as a major driver of the Earth system exceeding planetary boundaries

→ There is a need for sustainable transition of agrifood systems

→ On the social, economic, and environmental dimensions



THE STATE OF FOOD AND AGRICULTURE

Revealing the hidden costs of agrifood systems to enhance their value

d Philippe V. Baret[2]*

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This transition faces major resistance

The need for policy to address the food system lock-in: A case study of the Finnish context

Goal frames and sustainability transitions: how cognitive lock-ins can impede crop diversification

Socio-technical lock-in hinders crop diversification in France

Why are grain-legumes rarely present in cropping systems despite their environmental and nutritional benefits? Analyzing lock-in in the French agrifood system

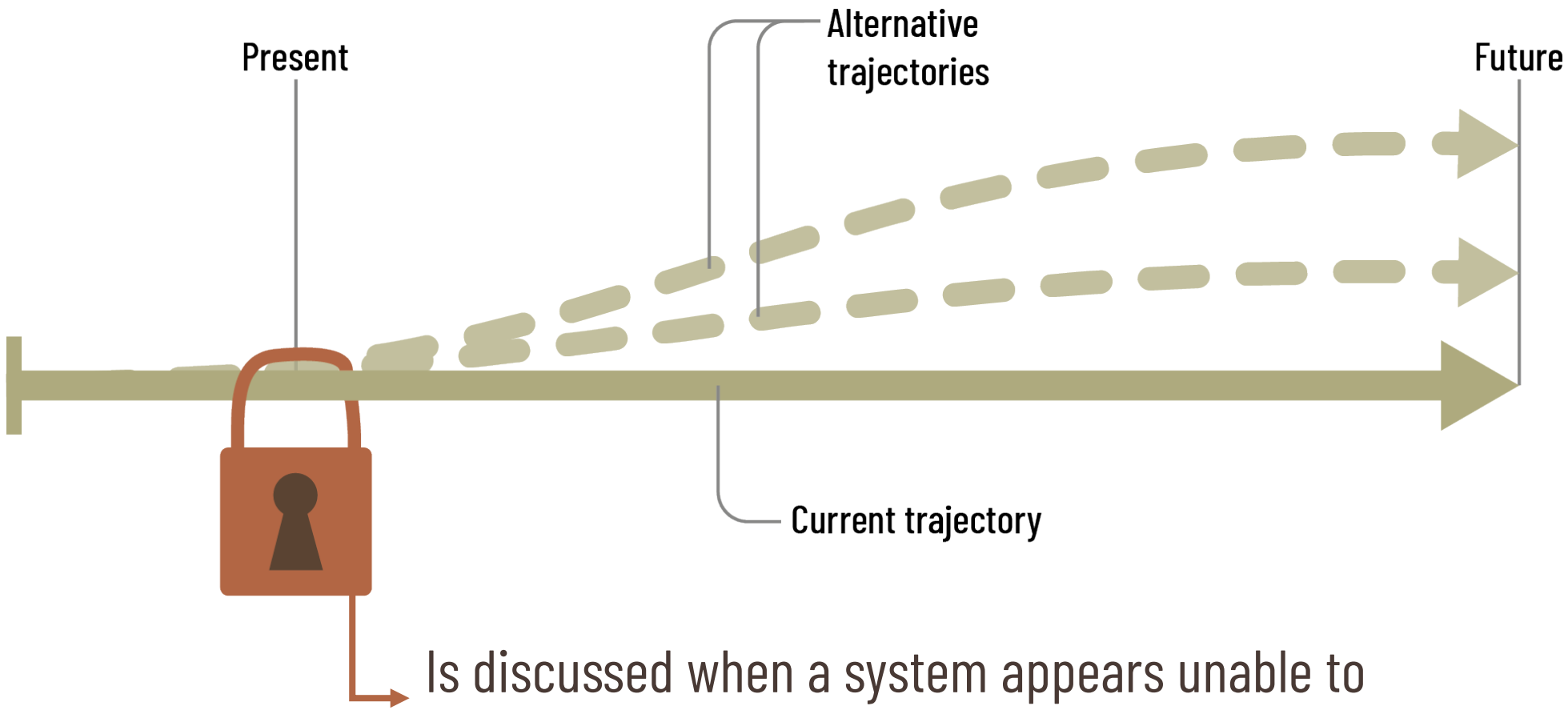
Sprayed to Death: Path Dependence, Lock-in and Pest Control Strategies

Locked in unsustainability: Understanding lock-ins and their interactions using the case of food packaging

Lock-Ins and Agency: Towards an Embedded Approach of Individual Pathways in the Walloon Dairy Sector

The concept of "lock-in" is used in many papers analysing this resistance.

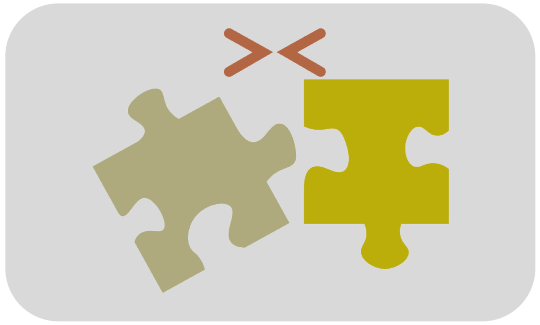
There is a shared understanding of the overall lock-in concept



Is discussed when a system appears unable to change toward an alternative trajectory

But there are three main research gaps in the literature addressing agrifood systems lock-ins

Inconsistent terminology

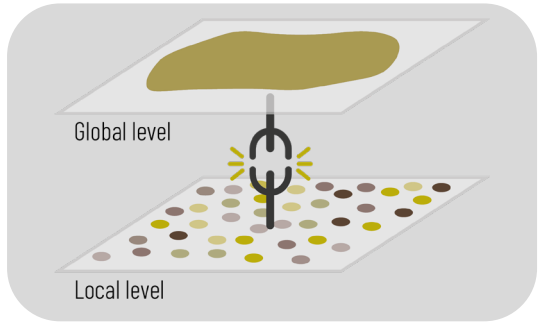


The terminology used differ between lock-ins analyses.

Insufficient consideration of lock-in's systemic nature

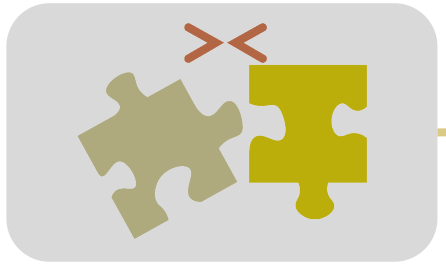
Lock-in analyses do not explore all lock-ins' components, nor the interactions between them.

Limited connection between local & global approaches

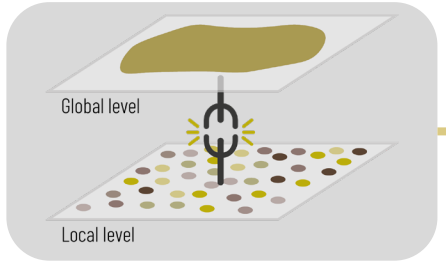


Global and local lock-in analyses are two separate approaches.

To address these gaps, we propose a conceptual and an analytical framework



A conceptual framework



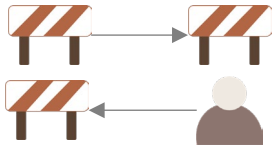
An analytical framework

Clear differentiation between

Barriers Lock-ins

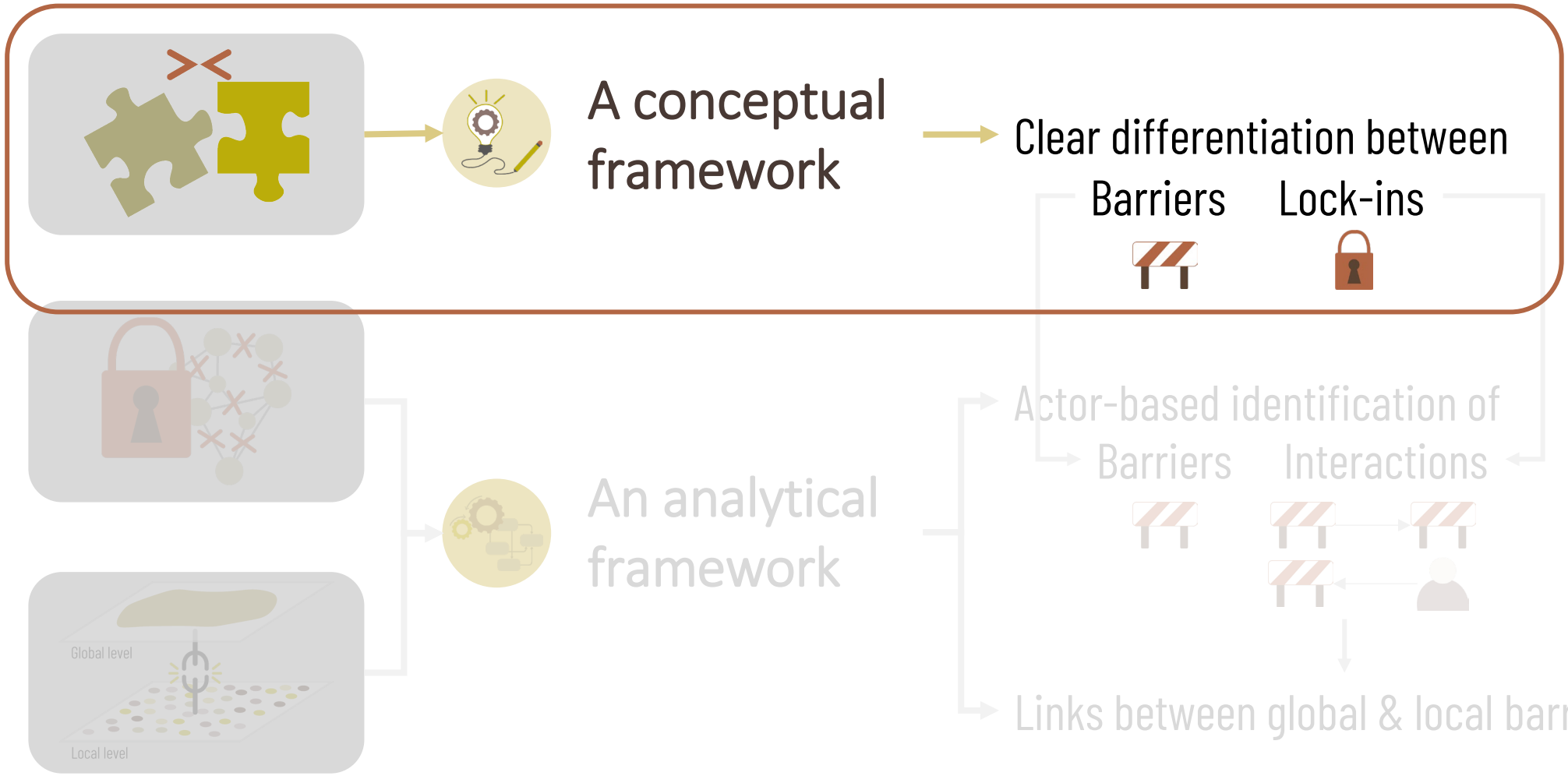
Actor-based identification of

Barriers Interactions



Links between global & local barriers

A conceptual framework to treat the inconsistent terminology



A conceptual framework to treat the inconsistent terminology

Barrier

= Specific and concrete elements of the current system that, by their existence and their interactions, contribute to its blockage.

➡️ **By interacting and reinforcing each other, the barriers create a complex situation where the system acquire strong resistant to change.**

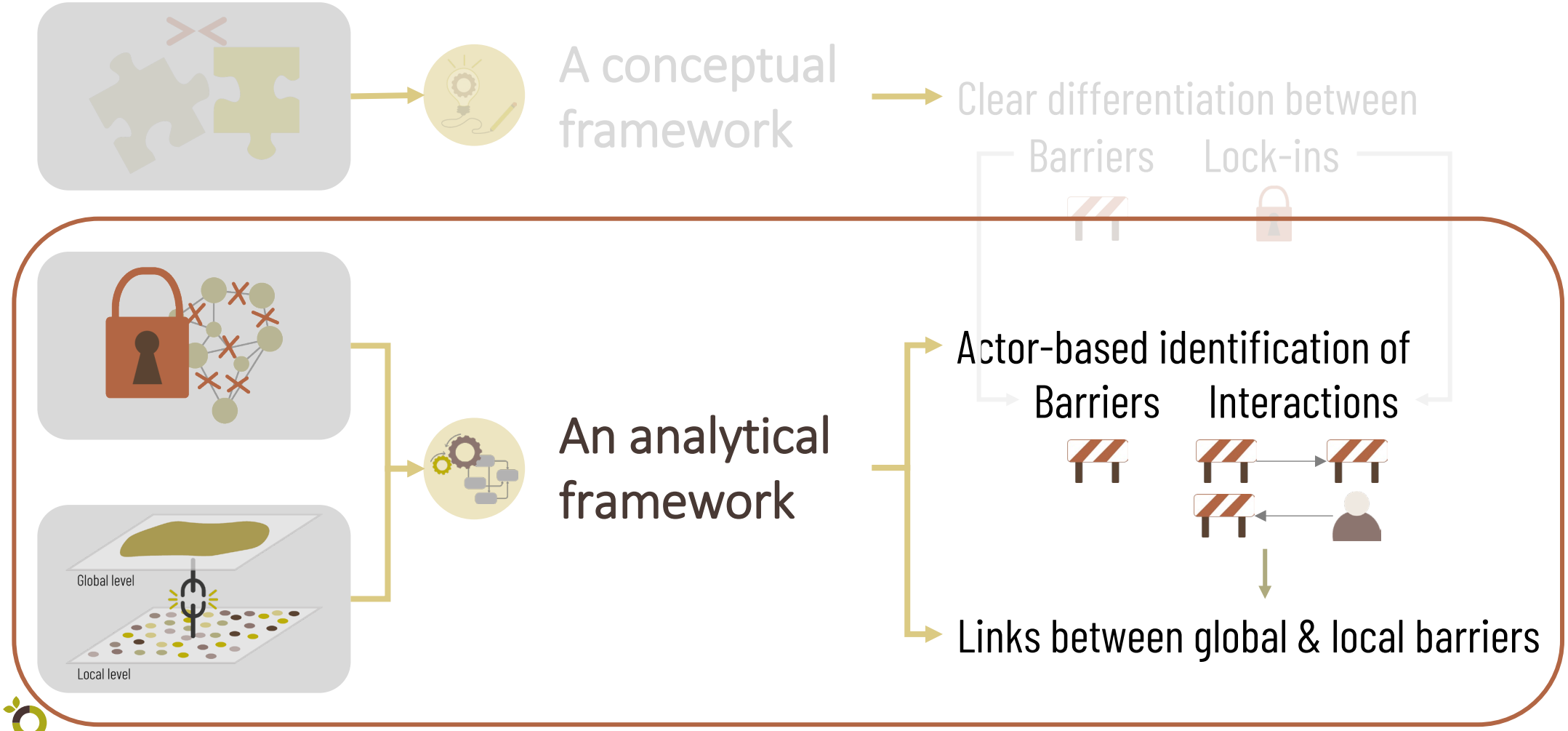
Lock-in

= State of a (agrifood) system in which a specific configuration becomes deeply entrenched, making the system resistant to change.

➡️ **It results from interactions between barriers.**

Operational dissociation between the two concepts, preventing confusion between them

An analytical framework to approach lock-ins systemically using participatory approach



An analytical framework to approach lock-ins systemically using participatory approach

Actors as
research partners

Actors are consulted at several steps of the lock-in analysis. They are considered as the principal source of information regarding systems' barriers.

Multiplicity of actors

Farmers, processors,
policymakers, advisors, etc.

An analytical framework to approach lock-ins systemically using participatory approach

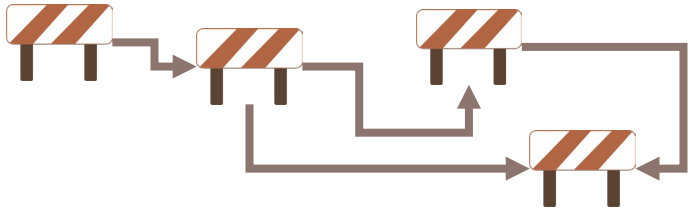
Multiplicity of actors

Farmers, processors, policymakers, advisors, etc.

Multiplicity of barrier types

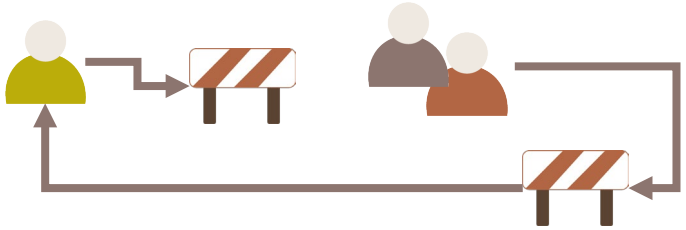
External, financial, governance-related, knowledge-related, market-related, organizational, relational, socio-cultural, and technical.

Interactions between barriers



→ Lock-in maps

Interactions between barriers and actors



→ Barriers are analyzed through actors' agency

A first step to bridge local and global approaches

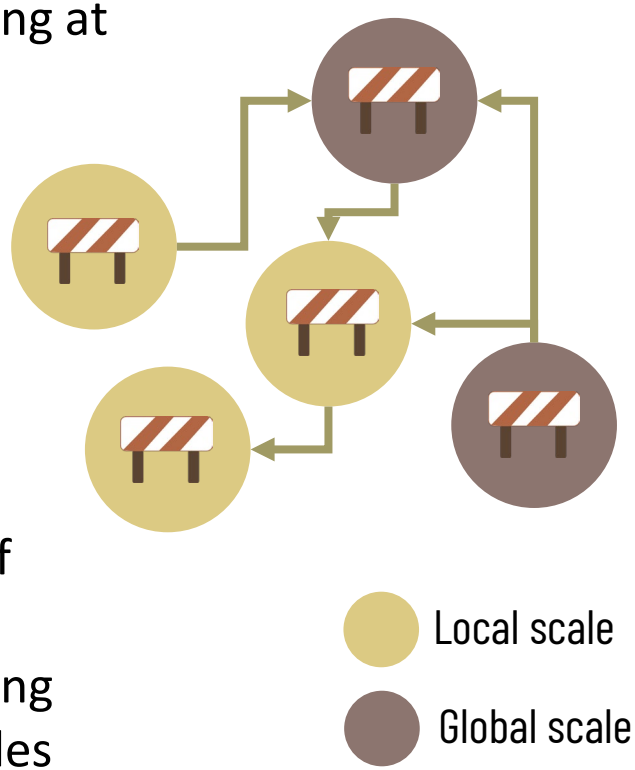
Multiplicity of actors (& related visions)

Multiplicity of barrier types

Lock-in analysis transcending scales, touching upon barriers unfolding at different scales

Interactions between barriers & barriers and actors

Identification of links between barriers unfolding at different scales

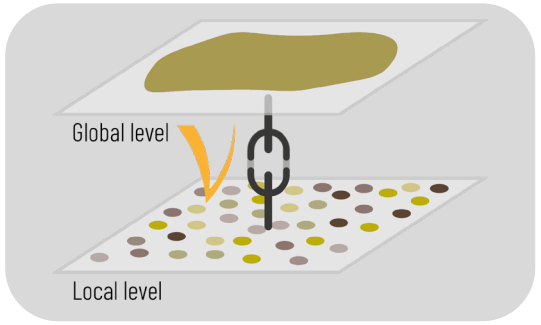


Example:
The lack of suitable machinery for harvesting intercropping is a local barrier, experienced by individual farmers.
It is linked to global barriers, e.g., the lack of R&D investment for intercropping-suited machinery by worldwide agricultural machinery companies and the lack of financial support for investment in machinery for intercropping in the CAP.

Our conceptual and analytical frameworks' contributions to the three identified gaps

- Clear and operational distinction between barrier and lock-in.

- Focus on interactions between barriers and bewteen barriers and actors,
- Consideration of barriers of different nature,
- Involvement of a diversity of actors.



- Identification of barriers operating at different scales,
- Identification of links between barriers operating at different scales.

These new conceptual & analytical frameworks are a work in progress and an open call to collective reflection on how to effectively address agrifood systems' lock-ins.

SYTRA

transition of food systems

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