

DEVELOPMENT OF ORGANIC FARMING IN EUROPE AT THE CROSSROADS: LOOKING FOR THE WAY FORWARD THROUGH SYSTEM ARCHETYPES' LENSES

Brzezina, Natalia¹; Biely, Katharina²; Helfgott, Ariella³; Kopainsky, Birgit⁴; Vervoort, Joost³; Mathijs, Erik¹

1: KU Leuven, Belgium; 2: Hasselt University; 3: University of Oxford; 4: University of Bergen

INTRODUCTION



Over the last several decades, policymakers and stakeholders in the European Union (EU) have put considerable effort into increasing the adoption of organic farming, with the overall objective of its sustainable development. However, the growth of the organic sector has come with many challenges that jeopardize its sustainability. The question then is how to move organic farming in Europe forward and at the same time capitalize on its potential contribution to sustainability?



Organic farming in the EU is a highly complex and dynamic food system and as such this question cannot be answered in isolation using a one-dimensional mind-set and tools of the past. In this paper we explored the usefulness of system archetypes to sharpen our ability (1) to analyze and anticipate difficulties in the development of organic farming in the EU and (2) to find effective ways to address these difficulties.

METHODOLOGY

System archetypes constitute a catalogue of ten generic *system structures*, accompanied by *storylines*, that involve two or more reinforcing (R) and/or balancing (B) feedback loops driving (1) intended actions (IA) and (2) unintended consequences (UC) often occurring with a delay (||) (Figure 1).

The system structures underlie archetypal *behavior over time*.

For each system archetype there are well-defined yet generic *solutions* that proved to be effective in resolving the undesirable archetypal behavior.

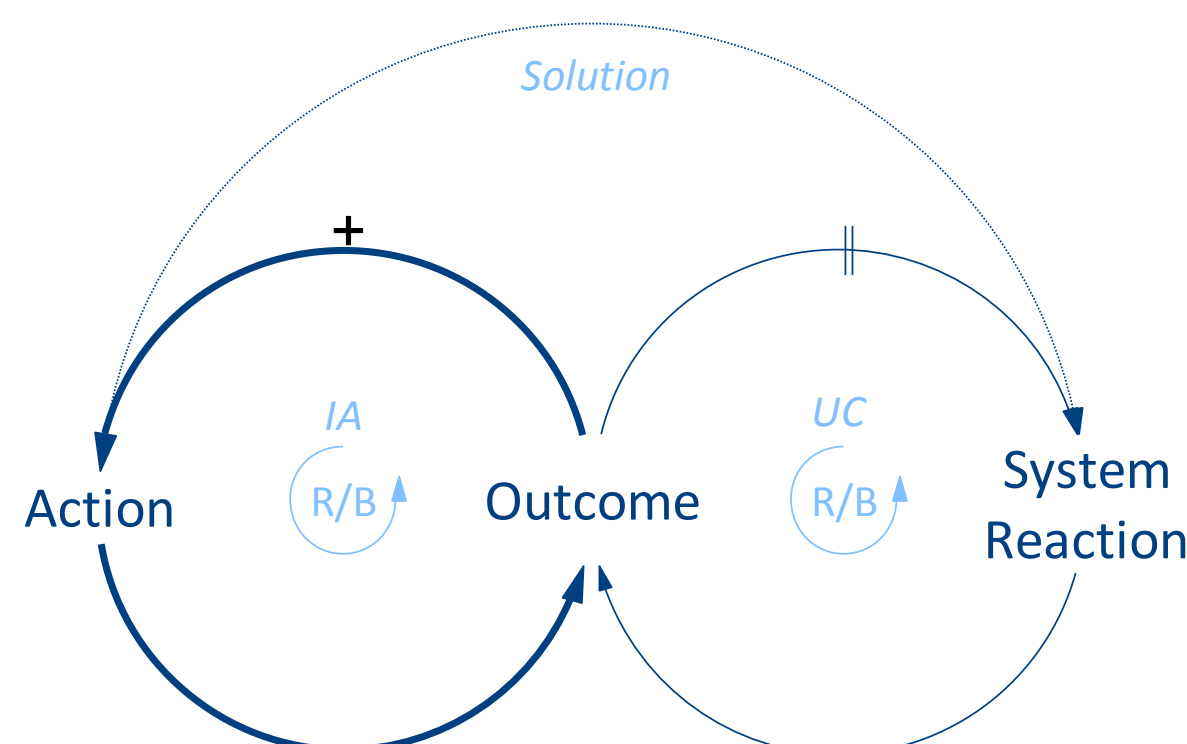


Figure 1. Structure of generic two-loop system archetype; arrows (→) represent the causal links between variables, which indicate both the direction of causality and whether the variables change in the same (+) (i.e., increase → increase; decrease → decrease) or in the opposite (-) (i.e., increase → decrease; decrease → increase) direction; when a feedback loop arises around two or more variables (i.e., IA or UC) we classify it either as a balancing (B; stabilizing, negative) or a reinforcing (R; amplifying, positive) feedback loop

In this paper we used the catalogue of system archetypes as lenses for looking at the development of organic farming in the EU. An overview of our approach is presented in Figure 2.

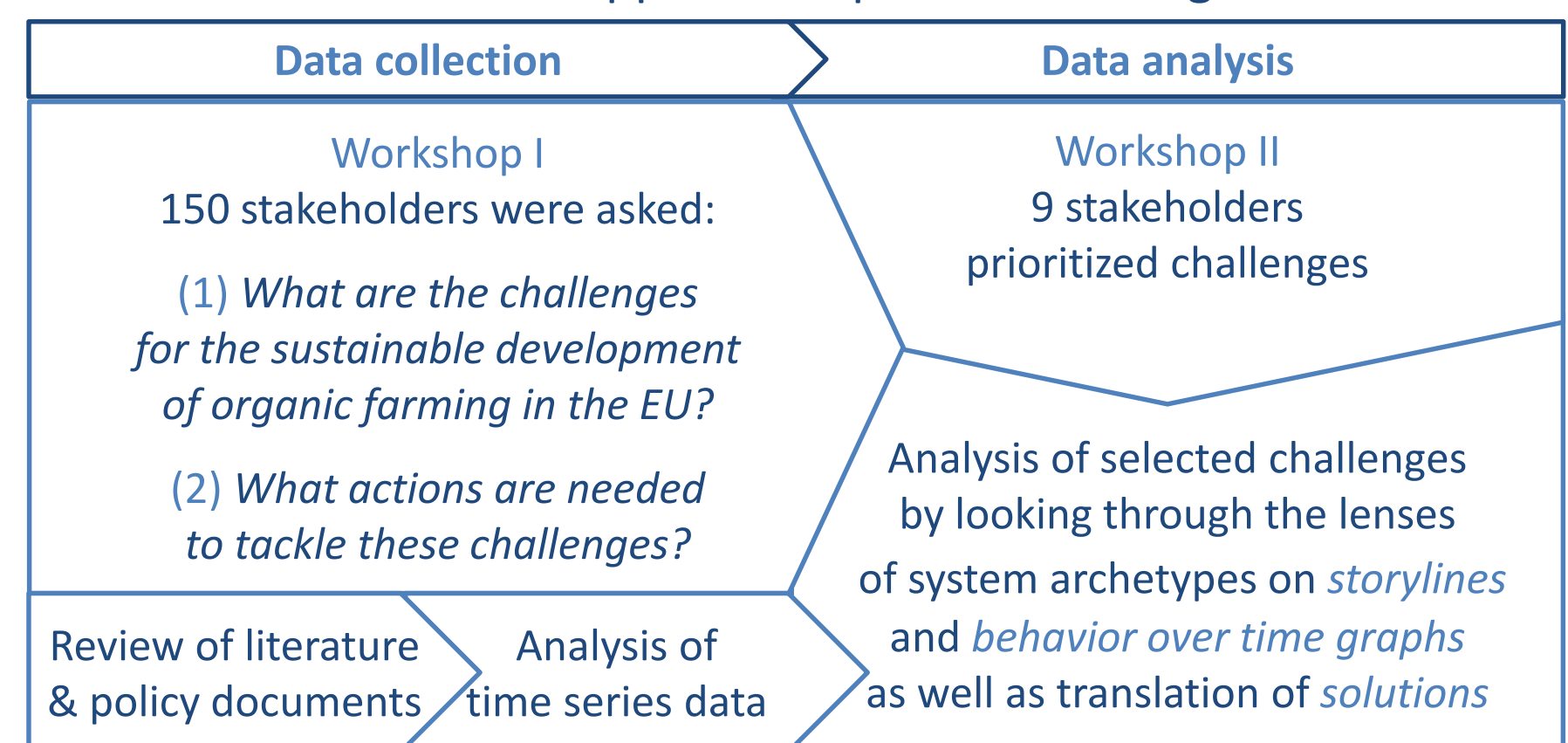


Figure 2. Methodological approach

RESULTS

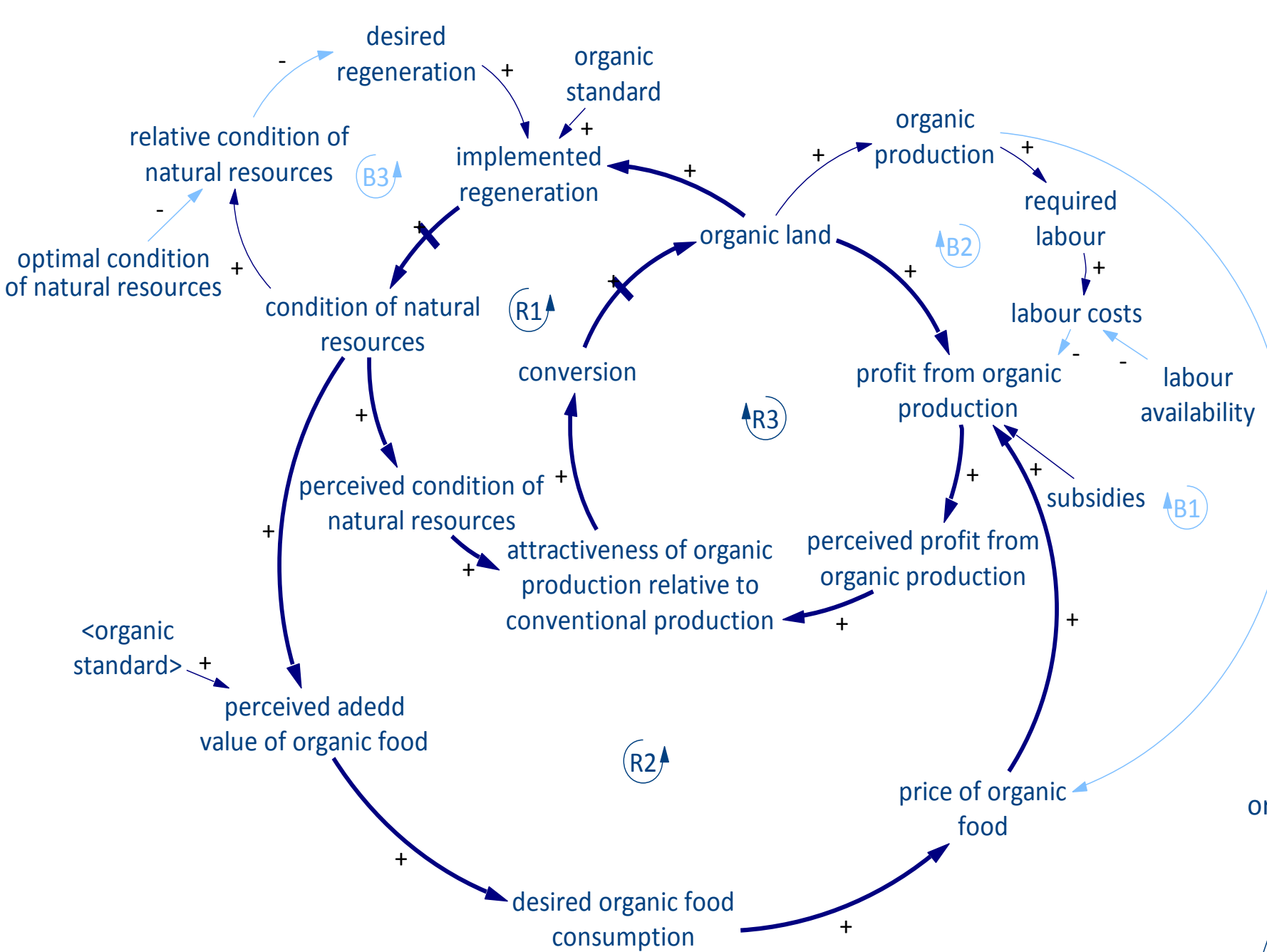


Figure 3. Limits to Growth: Growth engines of the development of organic farming (R1, R2, R3) with exemplary limiting pressures related to price squeeze (B1), labor requirements (B2) and lack of motivation to implement regenerative practices (B3)

Limits to Growth (Figure 3):

How to move organic farming in the EU out of the niche?

The Way Forward: There is no such thing as unlimited growth. Hence the leverage for moving organic farming out of the niche does not necessarily lie in increasing subsidies that push engines of growth, but rather in anticipating and managing its limits arising from, for instance, its market dynamics or intrinsic environmental motivation of food producers and consumers.

Eroding Goals (Figure 4): How to reverse conventionalization of organic farming in the EU?

The Way Forward: It is important to continuously improve regulatory standards based on an external frame of reference, otherwise organic farming in the EU will continue on its trajectory towards conventionalization.

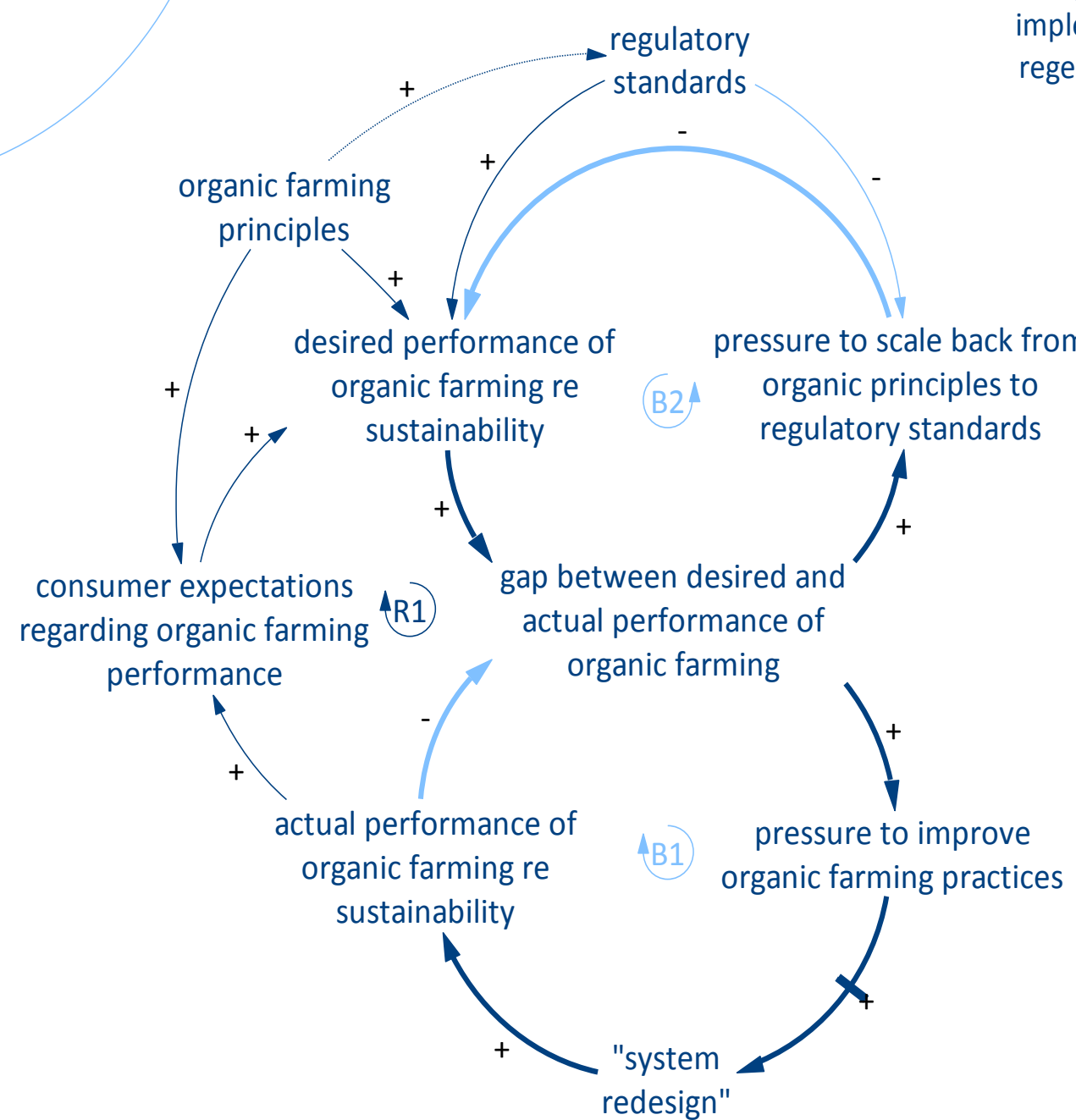


Figure 4. Eroding Goals: Implementing corrective actions (B1) versus lowering goals (B2) to reduce the gap between desired and actual performance of organic farming along with unintended reinforcing processes related to erosion of consumer expectations (R1)

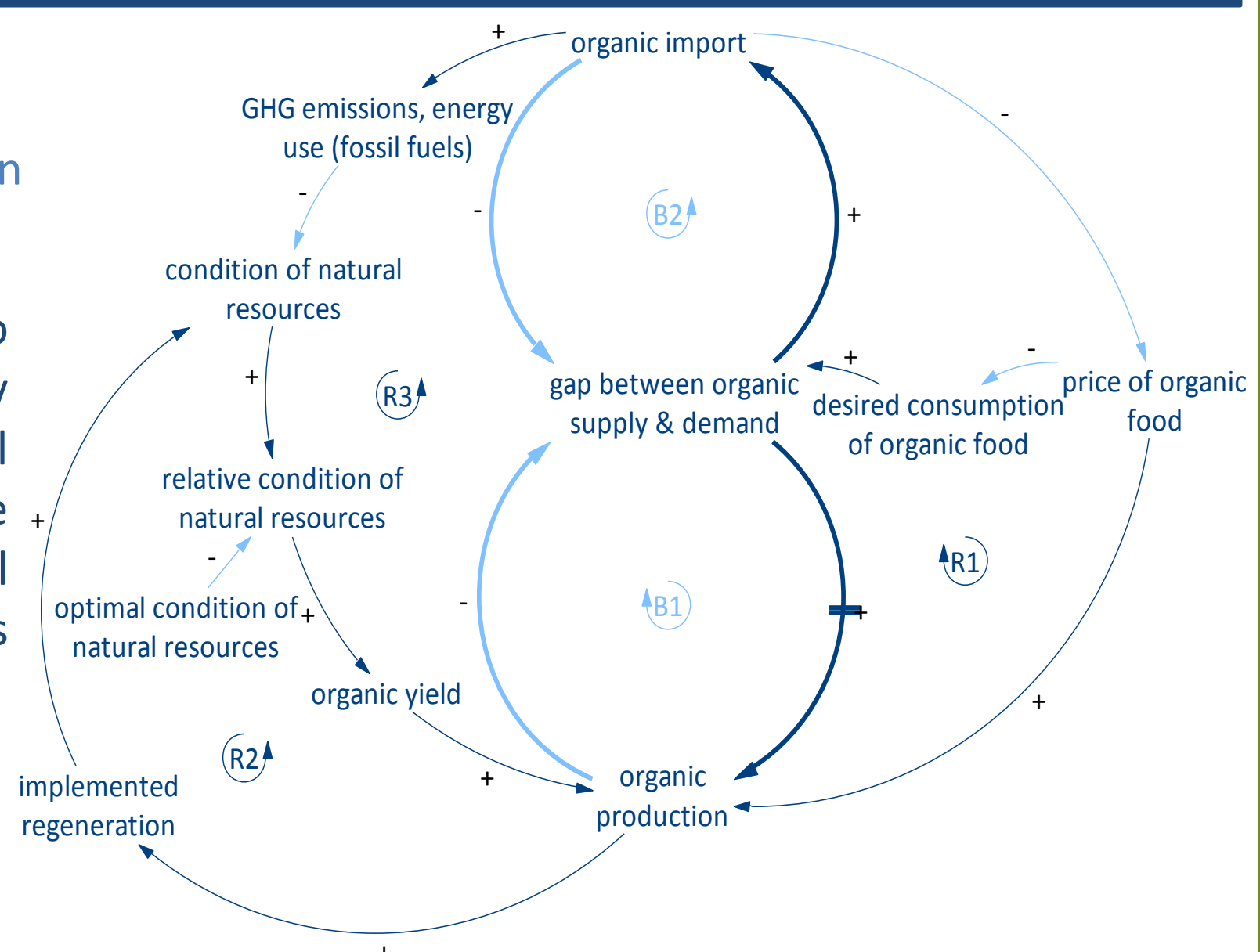


Figure 5. Shifting the Burden: Fundamental solution (B1) and quick fix (B1) to the problem of widening gap between organic domestic production and desired consumption of organic food along with unintended reinforcing processes related to price squeeze (R1), decline in implementation of practices regenerating natural resources (R2), degradation of natural resources (R3)

Shifting the Burden (Figure 5):

How to balance supply of organic food with the rapidly growing demand for it?

The Way Forward: The organic farming system can easily and unnoticeably become dependent on third countries and undermine its own sustainability, if importation is applied on and on as symptomatic solution to bridge the shortage of organic food on the market. The leverage is to prevent this archetypal behavior of applying "quick fix - importation" from becoming engrained in the system and focus on developing the domestic production of organic food.

CONCLUSIONS

Russel Ackoff once stated: "We don't need better solutions, we need better thinking about problems". We proposed a new way of thinking about the challenges to the sustainable development of organic farming in the EU. The system archetypes revealed that the EU organic farming system faces (or in the future may face) many problems related to the unintended consequences of one-dimensional solutions.

FURTHER RESEARCH

- Investigation of the development of organic farming by:
 - Using the remaining system archetypes;
 - Developing quantitative system dynamics models.