Desired compliance or business opportunity: How to frame the ecological transition in farming?

Prof. Dr. Ir. Erik Mathijs

7th SUD Symposium
Brussels, December 12, 2019
Overview

• *Thesis*: Ecological transition in farming is framed mainly as **desired compliance / adoption** of practices (focus on costs)

• *Anti-thesis*: Strategic and operational fit into farmers’ **business model** (focus on value)
Behavioural factors affecting the adoption of sustainable farming practices: a policy-oriented review

François J. Dessart*, Jesús Barreiro-Hurlé and René van Bavel

European Commission, Joint Research Centre (JRC), Seville, Spain

Received April 2018; editorial decision February 2019; final version accepted March 2019
Review coordinated by Sophie Thuyer and Raphaëlle Poget

Abstract
This paper reviews the findings from the last 20 years on the behavioural factors that influence farmers’ decisions to adopt environmentally sustainable practices. It also proposes policy options to increase adoption, based on these behavioural factors and embedded in the EU Common Agricultural Policy. Behavioural factors are grouped into three clusters, from more distal to more proximal: (i) dispositional factors; (ii) social factors and (iii) cognitive factors. Overall, the review demonstrates that considering behavioural factors enriches economic analyses of farmer decision-making, and can lead to more realistic and effective agri-environmental policies.

Keywords: environment, sustainability, conservation, farming, agriculture, behavioural sciences, muddle, psychology

JEL classification: D91 Role and Effects of Psychological, Emotional, Social, and Cognitive Factors on Decision Making, Q13 Agriculture and Environment, Q17 Agricultural Policy

1. Introduction
1.1. Context and objectives
Over the last decades, researchers have increasingly studied the factors that influence farmers’ adoption of environmentally sustainable practices. Within this literature, there is a burgeoning stream investigating the role of behavioural factors. Previous academic attempts to take stock of the factors influencing farmers’ adoption of sustainable practices (Kabi and Horwitz, 2006; Pannell et al., 2006; Knosche and Bradshaw, 2007; Prokopy, et al., 2006; Baumgart-Getz, Prokopy and Flores, 2012) did not specifically focus on the role of behavioural factors, often resulting in an incomplete overview and limited theoretical understanding of how and why these factors affect
Integrated conceptual framework

Source: Hansson et al., 2018, LIFT Deliverable 2.1
Fig. 1. An integrated framework of behavioural factors affecting farmers’ adoption of environmentally sustainable practices
What do behavioural studies teach us?

Dessart et al. (2019) show that

• “extraversion, openness to new experiences, risk seeking, moral and environmental concern, as well as lifestyle farming objectives are associated with higher adoption of sustainable practices.”

• “Conversely, being resistant to change and moved by economic objectives makes farmers reluctant to convert.”

They state that “a more long-term strategy, [...], entails increasing farmers’ environmental concerns and promoting conservation as a farming objective, as well as boosting consumers’ willingness to pay for environmentally friendly food.”
What do behavioural studies teach us?

**Behavioural** studies have attention for
- perceived costs and benefits and risk
- perceived control
- role of supply chain actors (directly) and final consumers (indirectly)
- (type of practice?)

But they miss a **managerial** approach:
- strategic and operational fit
- change of business model **in addition to** change of practice
VA = value added
GVP = Gross Value of Production
LU = Labour unit

Strategic differences between agro-ecology and industrial agriculture

1. Higher reliance on internal resources (less expenses)
2. Less specialised (more diversified output)
3. Higher focus on use-efficiency of internal resources through synergies
4. Centrality of labour in farming (technical efficiency increases are generated instead of bought)
5. Alliances among farmers and with consumers leading to better prices

Source: van der Ploeg et al. (2019)
A **business model** addresses how value is created, captured and delivered:

- Customer value proposition (**value creation**)
- Profit formula (**value capture**): revenues & costs
- Key resources required to deliver the value proposition + key operational and managerial processes to deliver value in a consistent way (**value delivery**)

**Business models**
Business model components

1. How do we create value? (factors related to the offering)
2. Who do we create value for? (market factors)
3. What is our source of competence? (internal capability factors)
4. How do we competitively position ourselves? (competitive strategy factors)
5. How do we make money? (economic factors)
6. What are our time, scope, and size ambitions? (personal/investor factors)

Source: Morris et al. (2005), The entrepreneur’s business model: toward a unified perspective, Journal of Business Research, 58, 726-735
<table>
<thead>
<tr>
<th>Component 1: Offering</th>
<th>Conventional farm</th>
<th>CSA farm</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offering</td>
<td>Standardized product, sorted and packaged</td>
<td>Limited customized product mix</td>
<td>Broader product mix (staple food)</td>
</tr>
<tr>
<td></td>
<td>Narrow and shallow lines Internal manufacturing</td>
<td>On-farm experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indirect multichannel distribution</td>
<td>Broad lines with medium depth Internal manufacturing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internal manufacturing</td>
<td>Direct distribution</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component 2: Market</th>
<th>Conventional farm</th>
<th>CSA farm</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Broad market Transactional</td>
<td>Niche market</td>
<td>Broad market</td>
</tr>
<tr>
<td></td>
<td>Production system</td>
<td>Production system/ internal resources</td>
<td>Supply chain management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component 3: Internal capability</th>
<th>Conventional farm</th>
<th>CSA farm</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal capability</td>
<td>Production system</td>
<td>Production system/ internal resources</td>
<td>Supply chain management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component 4: Competitive strategy</th>
<th>Conventional farm</th>
<th>CSA farm</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive strategy</td>
<td>Low cost</td>
<td>Intimate customer relationship</td>
<td>Innovation leadership</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component 5: Economics</th>
<th>Conventional farm</th>
<th>CSA farm</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics</td>
<td>Spot market</td>
<td>Prepaid membership fees</td>
<td>Labour cost</td>
</tr>
<tr>
<td></td>
<td>High operating leverage</td>
<td>Low operating leverage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High volume</td>
<td>Low volume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low margin</td>
<td>Medium margin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component 6: Purpose</th>
<th>Conventional farm</th>
<th>CSA farm</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Income</td>
<td>Subsistence</td>
<td></td>
</tr>
</tbody>
</table>
Internal barriers for CEBM

• **Financial**
  - Lack of financial resources
  - High up-front investment costs
  - Higher costs related to CEBM (e.g. collection)
  - Unclear financial business case

• **Organizational**
  - Administrative burden
  - Organization of reverse infrastructures
  - More complex management and planning processes

• **Knowledge and technology**
  - Lack of technical know how and expertise
  - Lack of information/data

Source: Based on Vermunt et al., 2019, J. Cleaner Production
External barriers for CEBM

• **Supply chain**
  - Lack of partners and low availability of materials
  - Higher dependence on external parties
  - Lack of info exchange between supply chain actors
  - Conflicting interests between actors in the supply chain
  - Bad re-use practices/reluctance of third parties

• **Market**
  - Low virgin material prices
  - Lack of consumer interest/ non-acceptance of CEBM
  - Resistance from stakeholders with vested interests in linear economy

Source: Based on Vermunt et al., 2019, J. Cleaner Production
External barriers

- **Hard institutions**
  - Ineffective recycling or waste policies
  - Incentives that promote material consumption over services (e.g. VAT)
  - Specific current accounting rules and management systems that are inappropriate for CEBM
  - Lack of standards and guidelines for repurposed products

- **Soft institutions**
  - Lack of awareness and sense of urgency within society

Source: Based on Vermunt et al., 2019, J. Cleaner Production
Concluding remarks

• Behavioural factors matter for ecological transition, but they are very context-specific
• Change in agricultural practice needs to go hand in hand with change in business model
• Attention mainly on internal value delivery model (higher reliance on internal resources) and less on value creation and capture (including supply chain management)
More information

- LIFT: www.lift-h2020.eu
- SUREFARM: surefarmproject.eu
- FOX: www.fox-foodprocessinginabox.eu