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RECEIVED 10 February 2026

REVISED 10 May 2026

ACCEPTED 18 May 2026

PUBLISHED 16 July 2026

CITATION

De Graeuwe M, Brostaux Y and
Maréchal K (2026) Assessing the
pedagogical relevance and
transformative potential of peasant
agroecological farm schools as a
potential signature pedagogy: a case
study of *Le Mouvement d'Action
Paysanne* (Belgium).
Front. Sustain. Food Syst. 10:1808583.
doi: 10.3389/fsufs.2026.1808583

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Assessing the pedagogical relevance and transformative potential of peasant agroecological farm schools as a potential signature pedagogy: a case study of *Le Mouvement d'Action Paysanne* (Belgium)

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Introduction: This study examines the pedagogical relevance and transformative potential of peasant agroecological farm schools as a signature pedagogy, through a case study of the Independent Peasant School (*École Paysanne Indépendante*, EPI) network coordinated by *Le Mouvement d'Action Paysanne* (*Le MAP*) in Wallonia, Belgium. As a farmer-led and community-based initiative, the EPI network delivers long-term, immersive training grounded in experiential learning and peasant agroecological knowledge.

Methods: A mixed-methods approach combined direct field observations in three active farm schools with an online survey of 67 former learners to assess pedagogical relevance, experiential engagement, professional integration outcomes, and change agency.

Results: Results indicate high levels of learner satisfaction and strong experiential immersion, reflected in elevated engagement scores and positive evaluations of training quality. Beyond technical skill acquisition, farm schools foster personal transformation, reflexivity, and durable dispositions aligned with agroecological values. Approximately one-third of former learners established agroecological farming activities, while many others integrated agroecological principles into professional trajectories, community engagement, and everyday practices. The analysis further reveals coherent, multi-dimensional forms of change agency spanning daily life, professional activity, personal networks, and civic or political engagement.

Discussion: At the same time, the study identifies key challenges, including insufficient theoretical structuring, tensions at the boundary between learning and labor, and persistent structural barriers such as limited access to land and capital. Overall, the findings position *Le MAP* farm schools as a distinctive European model of transformative agroecology education, demonstrating how farmer-led, immersive learning environments can support professional integration and contribute to broader food system transitions.

KEYWORDS

agroecology, change agents, experiential learning, peasant farm schools, transformative education

1 Introduction

The urgent call to transform food systems in line with the United Nations Sustainable Development Goals (SDGs) has placed education at the center of global efforts to drive social, sustainable, and ethical transformations. Agriculture today faces major challenges: ensuring food security, maintaining ecosystem services, supporting farmers and food-chain actors while also reducing environmental impacts (Boix-Fayos and De Vente, 2023; Devlet, 2021; Garnett et al., 2013; Rockström et al., 2017). In response, agroecology has emerged as both a scientific and a socio-political paradigm capable of addressing these intertwined challenges of transforming food systems toward more sustainable configurations (FAO, 2025, 2018; Gliessman, 2023; IPES-FOOD, 2024, 2020; Wezel et al., 2009).

Agroecological practices have indeed been demonstrated to be both environmentally beneficial (Boeraeve et al., 2020; Garbach et al., 2017; Vikas and Ranjan, 2024; Wezel et al., 2020, 2014) as well as economically viable (Mouratiadou et al., 2024; van der Ploeg et al., 2019). Small-scale peasant farming¹ systems, in particular, play a central role in enhancing resilience, reducing dependence on external inputs, and strengthening local food systems (De Schutter, 2010; van der Ploeg, 2014). However, beyond the adoption of agroecological practices, the truly transformative potential of agroecology has been shown to also depend on the educational frameworks that support their transmission and appropriation (Anderson et al., 2019a,b; Francis et al., 2020; Meek and Tarlau, 2016).

Education in agroecology increasingly aims to go beyond technical training by cultivating systems thinking, critical reflection, and collective action capacities (Francis et al., 2017; López-García et al., 2019). Over the past decade, numerous universities and colleges have developed agroecology curricula (De Graeuwe and Maréchal, 2024; Nicot et al., 2018; Wezel et al., 2018), yet many of these programs remain embedded in formal academic settings that are partially disconnected from farming realities. In contrast, community-based and farmer-led initiatives provide learning environments rooted in lived experience, peasant knowledge, and long-term immersion (Laforge and Levkoe, 2018).

Among these initiatives, *farm schools* constitute a distinctive educational model. Farm schools immerse learners in active farms over entire production cycles, combining hands-on practice, theoretical inputs and collective reflection instruction (De Graeuwe and Maréchal, 2024; Moore, 2017; Wezel et al., 2009). While

farmer-to-farmer training and farmer field schools are well documented (Chowdhury et al., 2011; Holt-Giménez, 2006; Kansanga et al., 2021; Kpienbaareh et al., 2020; Mariyono et al., 2013; Rosset, 2009), comparatively little research has examined farm school structures and even less so in Europe (Laforge and Levkoe, 2018; Schnyder, 2022).

Beyond skill acquisition, agroecology-oriented education initiatives increasingly seek to develop change agents, individuals capable of influencing food systems across personal, professional, and political spheres (Francis et al., 2020; Kerr et al., 2022). Programs designed with this ambition emphasize transformative learning processes, collective experiences, and reflexivity, enabling learners to reconfigure practices, values, and worldviews. In this perspective, farm schools may function as a *signature pedagogy* of agroecology (Valley et al., 2018), characterized by experiential, place-based, and community-based learning.

Building on earlier comparative research on farm schools in Senegal (De Graeuwe and Maréchal, 2024), this study extends previous findings in three main ways. First, it builds on the identification of key dimensions of pedagogical relevance, including learner experience and professional trajectories, to enlarge the vision regarding the quality of a given pedagogy. Second, it adapts and refines the analytical framework developed in the Senegalese context to a European setting, allowing for cross-contextual comparison. Third, it expands the scope of analysis by explicitly integrating transformative dimensions of learning, particularly change agency, which emerged as a critical yet underexplored outcome in previous research.

In this context, the present study focuses on the Independent Peasant School (École Paysanne Indépendante, EPI) network coordinated by Le Mouvement d'Action Paysanne (Le MAP) in Wallonia, Belgium. As a long-standing farmer-led organization promoting peasant agriculture, food sovereignty, and agroecology, *Le MAP* offers a relevant European case through its network of farm schools.

With these elements in mind, the present study aims to assess the pedagogical relevance of peasant agroecological farm schools through three interrelated research questions: (1) To what extent do farm schools provide meaningful and engaging learning experiences, as reflected in learner feedback and experiential engagement? (2) How do farm schools support the socio-professional integration of learners into agroecology-related activities? (3) To what extent do farm schools foster change agency among learners, understood as their capacity to influence practices, engage in individual and collective action, and contribute to agroecological transitions?

To address these questions, this study combines survey data from former learners with direct field observations. By examining the outcomes of farm school training across these dimensions, the study seeks to position this pedagogical model within the broader landscape of transformative agroecology education.

2 Theoretical framework

2.1 Agroecology education as transformative education

Agroecology education is increasingly understood as a transformative process that goes beyond the transmission of technical knowledge (Anderson et al., 2019a; Anderson et al., 2019b; Anderson and Anderson, 2020; Head, 2020; Horner et al., 2021). In this context, agroecology education increasingly aims to foster “change agents,”

¹ The definition of peasant farming is dependent on the discipline and theoretical framework emphasized by the scholars studying it. Chayanov (1986) described peasant farming as a family-based production system aimed at subsistence rather than profit maximization, with no capital accumulation and production primarily oriented toward meeting household needs. Scott (1977) introduced a sociological perspective, emphasizing the reliance of peasantry on traditional practices, and their resilience within oppressive socio-economic systems. From an economic standpoint, Ellis (1998) framed peasant farming as small-scale, family-oriented agriculture with limited capital investment, partial market integration, and vulnerability to external shocks. More recently, Altieri expanded the concept within an agroecological framework, highlighting the role of peasant systems in biodiversity conservation, ecosystem resilience, and sustainable food production. Finally, institutions such as FAO (2014) or La Via Campesina (2014) offered an institutional definition, underscoring the global significance of peasant farming for food security, the preservation of traditional knowledge, and the advocacy for social justice and land rights. Together, these perspectives reveal the multi-dimensional nature of peasant agriculture, rooted in economic, social, ecological, and political dimensions.

understood as learners who develop the capacity to critically engage with existing agri-food systems and to initiate or support transitions toward more sustainable practices across multiple spheres (Francis et al., 2020; Meek and Tarlau, 2016). It aims to foster systems thinking, critical reflection, and the capacity to engage with complex socio-ecological challenges (Francis et al., 2020). Learning is then no longer considered to be limited to cognitive acquisition but it now involves deeper shifts in values, practices, and worldviews which are essential for engaging in agroecological transitions (Guzmán and Woodgate, 2017; Méndez et al., 2013).

Transformative learning theory provides a relevant framework for conceptualizing such processes. It emphasizes how learning experiences may lead to changes in the frames of reference of learners through critical reflection, experience, and dialogue (Mezirow, 2000, 1997; Taylor, 2008, 2007). In the context of agroecology, this perspective is particularly pertinent, as learners are expected not only to acquire scientific knowledge but also to critically reassess dominant paradigms of prevailing food systems and reflect on their positionality within these systems (Horner et al., 2021; Meek and Tarlau, 2016).

However, despite a recognized interest for this broad direction toward the design of appropriate learning experiences, there remains uncertainty regarding which concrete pedagogical approaches are most effective in fostering transformative learning in agroecology education (Horner et al., 2021). Previous research has indeed highlighted that agroecology education faces specific challenges, notably the need to address complexity, interdisciplinarity, and cognitive lock-ins that may hinder the adoption of agroecological thinking (De Graeuwe et al., 2020; Louah et al., 2017). As a result, effective educational approaches should reconnect knowledge and action and support learners in developing systemic and reflexive understandings of agricultural systems through designing an appropriate learning experience.

2.2 Farm schools as an emerging signature pedagogy of agroecology

Farm schools in agroecology are educational environments where training and production coexist. They emphasize experiential learning through direct participation in farming activities, prioritizing *learning by doing* over classroom instruction (De Graeuwe and Maréchal, 2024; Moore, 2017; Wezel et al., 2009). Within *Le MAP*, farm schools provide immersive, community-based education that connects learners to both ecological systems and social dynamics of peasant life.

The concept of a farm school differs from terms such as “*student farm*,” “*teaching farm*,” or “*university farm*,” which generally refer to farms affiliated with higher education institutions where learners are enrolled students and engage in practical activities as part of their curriculum (De Graeuwe and Maréchal, 2024). It also diverges from “*school farms*,” which are typically associated with younger pupils or educational approaches such as Montessori pedagogy, and aim to introduce learners to food systems and ecological practices (Blair et al., 2023; Gambrill, 2015).

To this respect, farm schools can be interpreted as a specific form of “signature pedagogy” of agroecology. Signature pedagogies refer to the characteristic forms of teaching and learning that shape not only competencies but also professional identities and ethical dispositions (Horner et al., 2021; Valley et al., 2018).

This study aims to assess the pedagogical relevance and transformative outcomes of peasant agroecological farm schools, and to

examine their potential as an emerging signature pedagogy of agroecology.

Farm schools are characterized by long-term immersion in real farming contexts, a strong articulation between theory and practice as well as collective and experiential learning processes. These features align closely with the core principles of agroecology education, which emphasize experiential, transdisciplinary, and action-oriented learning (Francis et al., 2011; Frank et al., 2022; Lieblein et al., 2004; Østergaard et al., 2010). Farm schools thus function as learning environments where knowledge is co-constructed through practice and interaction with real socio-ecological systems.

This perspective extends previous work on farm schools, which has primarily focused on their role in knowledge acquisition and professional training. While these dimensions remain central, a broader pedagogical perspective underscores the potential to shape learner values, identity, and capacity to engage in agroecological transitions.

2.3 Experiential learning and immersion in agroecology training

Experiential learning constitutes a cornerstone of agroecology education and farm school pedagogy. As defined by Kolb et al. (1986), it is structured around a cyclical process comprising four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Such framework appears highly suitable for agroecology education, where learners are directly involved in agricultural practices, critically evaluate their ecological, economic, and social dimensions, and progressively develop problem-solving capacities. Thus, the objective pursued by farm schools can be viewed as a way to operationalize this approach by embedding learners in real farming environments over extended periods. This immersion allows learners to connect theoretical knowledge with practice, develop situated and embodied skills, and engage emotionally and socially in the learning process.

Reconnecting knowledge and action has indeed been identified as a key condition for effective agroecology learning (Østergaard et al., 2010). Experiential learning environments, such as farm schools, therefore, play a crucial role in enabling learners to grasp the complexity of agroecological systems and to develop practical competencies aligned with this paradigm (De Graeuwe and Maréchal, 2024).

2.4 Conceptualizing pedagogical relevance and pedagogical quality

Assessing the pedagogical relevance of farm schools requires a clear conceptualization of what constitutes both pedagogical relevance and pedagogical quality. While these terms are sometimes used interchangeably, they refer to distinct but complementary dimensions of educational processes.

Pedagogical quality refers to the characteristics of the learning environment and processes that support effective learning. It encompasses elements such as learner engagement, coherence of pedagogical practices, and the perceived value of the training experience (Entwistle, 2017; Ramsden, 2013). In this sense, pedagogical quality focuses primarily on the internal functioning of the educational process.

By contrast, pedagogical relevance refers to the extent to which a training system produces meaningful, applicable, and transformative outcomes in relation to its objectives and context. It captures the

capacity of a training program to support learners' socio-professional trajectories and to contribute to broader transformations. Pedagogical relevance therefore reflects the external significance and impact of the educational process (Francis et al., 2011; Kirkpatrick and Kirkpatrick, 2006).

In this study, pedagogical relevance is adopted as the central analytical concept. Pedagogical quality is considered as one of its components, alongside socio-professional and transformative outcomes. This perspective is consistent with agroecology education, which aims not only to deliver effective learning experiences but also to enable learners to engage with real-world challenges and contribute to systemic change.

2.5 From theoretical framework to analytical dimensions

Building on the manifold aspects developed above, pedagogical relevance is conceptualized as a multidimensional construct capturing the capacity of a training system to generate meaningful learning experiences, support the socio-professional trajectories of learners, and foster transformative engagement with agroecological transitions.

While individual indicators, such as the extent of satisfaction or the degree of immersion, do not, in isolation, demonstrate pedagogical relevance, they still provide complementary insights into specific dimensions of the learning process. Their combined analysis allows for a more comprehensive assessment of pedagogical relevance, understood as a multidimensional construct.

This conceptualization draws on three complementary perspectives. First, experiential learning theory emphasizes the importance of lived experiences by the learners and engagement in shaping learning processes (Kolb et al., 1986). Second, transformative learning theory highlights the role of education in fostering shifts in values, frames of reference, and capacities for critical action (Mezirow, 2000; Taylor, 2008). Third, the concept of signature pedagogy underscores how pedagogical environments shape professional identities and dispositions and is operationalized through professional integration and change agency (Valley et al., 2018).

Within this framework, pedagogical relevance cannot be reduced to a single indicator but must be assessed through complementary dimensions reflecting these different aspects of learning. Accordingly, four analytical dimensions are mobilized: (1) learner feedback, capturing perceived quality and meaning of the learning experience; (2) experiential engagement, reflecting the intensity of involvement in situated learning processes; (3) professional integration, indicating the extent to which training supports socio-professional integration; and (4) change agency, capturing the capacity of learners to translate learning into transformative action across multiple spheres.

Taken together, these dimensions provide an operationalization of pedagogical relevance consistent with the transformative and experiential nature of agroecology education.

(1) Feedback from the learners

The subjective evaluations of learners provide insight into their experience of the training and its perceived value. In educational research, the perceptions of learners are widely used to assess pedagogical environments, as they reflect how teaching practices are experienced and interpreted by participants (Entwistle, 2017; Ramsden, 2013; Trigwell and Prosser, 1991).

Moreover, learner feedback is a central component in widely used training evaluation frameworks, such as Kirkpatrick's model, where the reactions of participants constitute a first level of assessment of training effectiveness (Kirkpatrick, 1998).

Feedback from former learners serves as an indicator of how pedagogical environments support engagement and learning processes.

(2) Experiential engagement

Given the central role of experiential learning in farm schools, this study assesses learners' level of engagement in the training. The concept of flow (Csikszentmihalyi, 2014, 2000) provides a useful theoretical background to understand conditions of deep engagement characterized by deep concentration, intrinsic motivation, and a sense of absorption in an activity. In educational contexts, it has been associated with enhanced engagement, persistence, and learning processes (Shernoff and Csikszentmihalyi, 2009).

Although flow was originally conceptualized as a short-term, situational experience (*flow state*), the literature shows a diversity of temporal approaches to its measurement. Several studies rely on post-activity assessments (Chan and Ahern, 1999; De Graeuwe et al., 2025; Mladenović et al., 2017), while others adopt retrospective windows covering several days or weeks (Bakker et al., 2017; Bakker, 2008; Burke, 2010). More dynamic approaches include daily or repeated measures, such as experience sampling over 5 days (Everett et al., 2015), weekly reports (Kirchhoff, 2013), or repeated assessments across a course or semester (Everett et al., 2016). Longitudinal designs have also been used to explore flow over extended periods, ranging from several weeks to months (e.g., Bakker et al., 2017; Rijavec and Ljubic-Golub, 2019). In agroecological education, shorter immersive formats—such as multi-day serious games—have also been shown to generate flow experiences (De Graeuwe et al., 2020). These approaches suggest that the concept of flow can be mobilized to capture broader patterns of engagement in extended learning processes.

To operationalize experiential engagement, this study initially draws on the eight factors proposed in the EGameFlow framework (Fu et al., 2009), namely concentration, clear goals, feedback, challenge, autonomy, immersion, social interaction, and knowledge acquisition. While EGameFlow was originally developed for digital learning environments, these factors correspond to broader conditions of engagement that are not specific to gaming contexts but are widely recognized in educational research (Csikszentmihalyi, 2000; Shernoff and Csikszentmihalyi, 2009). In the present study, these factors were adapted as engagement dimensions to fit the context of agroecological farm schools and retrospective assessment. From this perspective, the objective is not to measure flow as a unified psychological construct, but rather to capture key conditions associated with experiential engagement in immersive learning environments. Accordingly, the adapted engagement dimensions should not be interpreted as a

replication or validation of the original EGameFlow scale, but rather as context-specific indicators of experiential engagement. The results are therefore interpreted as indicative of broader patterns of learner engagement rather than as direct measurements of flow as a psychological construct. This broader approach is consistent with educational research emphasizing the multidimensional nature of engagement in learning processes (Fredricks et al., 2004; Kahu, 2013).

(3) Professional integration

Farm schools aim to support learners' integration into agroecological professions. Professionalization refers to the development of knowledge, skills, and capacities enabling individuals to engage in professional activities (Lilleker and Negrine, 2002).

In this study, however, the empirical assessment of this concept is necessarily limited by the available data. As such, professionalization is operationalized through observable post-training outcomes, namely business creation and employment in agroecology-related activities. These indicators do not fully encompass the broader process of professionalization but are used as proxies to capture learners' socio-professional integration into the agroecology sector.

(4) Change agency

Building on the conceptualization introduced in the theoretical framework, change agency is assessed through the reported capacity of former learners to influence practices, raise awareness, and initiate change processes across multiple spheres. These include family settings, local communities, and professional environments, thereby contributing to agroecological transitions at multiple levels.

The definition of change agency is consistent with the literature on agroecology education, which conceptualizes learners as "change agents" capable of critically engaging with dominant agri-food systems and contributing to transformative processes (Francis et al., 2020; Kerr et al., 2022; Meek and Tarlau, 2016). It reflects a shift from a narrow focus on skill acquisition toward a broader understanding of learning as the development of capacities for action within complex socio-ecological systems (Guzmán and Woodgate, 2017; Méndez et al., 2013).

From a transformative learning perspective, change agency is linked to processes through which learners reassess their frames of reference and translate these shifts into action (Mezirow, 2000; Taylor, 2008). In agroecology education, such processes are often embedded in collective and experiential learning environments that foster reflexivity, systems thinking, and engagement with real-world challenges (Francis et al., 2011; Anderson et al., 2019a,b).

This dimension extends previous work on farm schools, where the role of graduates as "change-makers" has been identified as a key outcome (De Graeuwe and Maréchal, 2024). In line with the concept of signature pedagogy, farm schools contribute to shaping not only competencies but also dispositions and commitments that enable learners to act across multiple spheres (Valley et al., 2018). In this

study, change agency therefore captures the extent to which learners translate their training into concrete transformative actions, whether through professional practices, community engagement, or everyday behaviors, reflecting the broader societal relevance of agroecology education.

To complement this analysis, a "consumption index" was constructed to capture selected dimensions of food-related practices among former learners. Rather than relying on a standardized or validated scale, this index reflects a context-specific operationalization of sustainable consumption practices. The selection of the four statements was based on a co-construction process with actors from *Le MAP*, taking into account both the values promoted within the training and what could realistically be influenced through farm school participation. This process was guided by a general understanding, widely acknowledged in the literature, that sustainable food practices involve reducing food waste and supporting local and organic production systems (e.g., IPES-FOOD, 2016). Given that MAP farm schools are not primarily designed as food consumption training programs, the selected statements represent a pragmatic and limited proxy of broader consumption practices. They do not aim to provide an exhaustive assessment (e.g., dietary patterns), but rather to capture specific dimensions that are both relevant to agroecological principles and meaningfully connected to the training experience. Accordingly, this index should be interpreted as an exploratory and context-specific indicator rather than a standardized measure of sustainable consumption.

2.6 Research strategy

This study adopts a mixed-methods research strategy designed to ensure coherence between the research questions, the theoretical framework, and the empirical analysis. Building on the conceptualization of pedagogical relevance as a multidimensional construct, the research strategy combines quantitative and qualitative data to capture complementary dimensions of learning processes, socio-professional outcomes, and transformative capacities.

The study is structured around three interrelated research questions addressing: (1) the extent to which farm schools provide meaningful and engaging learning experiences, (2) their role in supporting learners' socio-professional integration, and (3) their capacity to foster change agency. Each research question is operationalized through specific analytical dimensions derived from the theoretical framework, namely learner feedback, experiential engagement, professional integration, and change agency (Table 1).

To address these questions, the research relies on two main sources of data: (i) a survey conducted among former learners, and (ii) direct field observations carried out in three farm schools within the MAP network. The survey provides standardized quantitative data on learners' experiences, trajectories, and reported practices, while also including open-ended questions that allow for qualitative insights. Field observations complement these data by documenting pedagogical practices, learning environments, and interactions within farm schools.

TABLE 1 Research strategy: alignment between research questions, analytical dimensions, and data.

Research question	Analytical dimension	Data collected
RQ1: To what extent do farm schools provide meaningful and engaging learning experiences?	Learner feedback & experiential engagement	Satisfaction scores, Likert statements, open-ended responses, experiential engagement dimensions
RQ2: How do farm schools support the socio-professional integration of learners?	Professional integration	Employment status, business creation, barriers
RQ3: To what extent do farm schools foster change agency among learners?	Change agency	Survey statements (Likert), consumption index, qualitative examples

The analytical strategy is based on a systematic articulation between research questions, data, and methods. The first research question, focusing on learning experiences, is examined through indicators related to learner feedback and experiential engagement, using descriptive statistics, inferential analyses (e.g., ANOVA, regression), and qualitative interpretation of open-ended responses. The second research question, addressing socio-professional integration, is analyzed through indicators of professional integration, including employment and business creation, using descriptive and comparative statistical analyses. The third research question, related to change agency, is investigated through specific survey statements and composite indices, combined with both quantitative analysis and qualitative interpretation.

Table 1 provides a structured overview of how each research question is operationalized through specific analytical dimensions and data collected.

3 Materials and methods

3.1 Study context

Wallonia, the French-speaking region of Belgium, constitutes a relevant setting for examining community-based agroecology education. The region is characterized by a dense network of civil society organizations advocating for sustainable agriculture and food sovereignty, alongside a diversified institutional landscape of agricultural training. In addition to formal agricultural colleges, non-profit organizations play a significant role in providing alternative training pathways for individuals seeking to engage in peasant and agroecological farming.

Within this context, *Le Mouvement d'Action Paysanne* (The Peasant Action Network, in English) represents a long-standing actor at the intersection of farmer support, political advocacy, and agroecological education. Founded in 1998, *Le MAP* is a Belgian non-profit organization that defends and promotes peasant agriculture, food sovereignty, and agroecology as both a socio-political and environmental project. Concretely, *Le MAP* provides advice to farmers, engages in policy advocacy, and organizes public events aimed at presenting the interest of agroecological alternatives (LE MAP, n.d.). *Le MAP* also contributes to participatory guarantee systems for local markets and maintains alliances with *La Via Campesina* (Rosset, 2013) and *Agroecology in Action* (AiA is a Belgian non-governmental movement promoting agroecology and food-system transformation).

To formalize its educational mission, *Le MAP* established the *École Paysanne Indépendante* (EPI), a professional training center recognized by the Walloon Region. This institutional recognition

acknowledges peasant agroecology as a legitimate agricultural pathway, distinct from conventional agribusiness-oriented training.

The EPI brings together several types of training programs, ranging from short specialization courses to long-term immersive training (see Appendix 1 in the Supplementary material for more details). Among these modalities, peasant farm schools constitute the central object of enquiry in this study.

According to LE MAP (n.d.), “*The farm school is a place of production, life, and hospitality [...] where learners reappropriate peasant knowledge and skills through long-term immersion (from sowing to harvest) one to three days per week.*” The primary objectives of EPI farm schools are:

- 1) to strengthen practical competence in agroecological techniques;
- 2) to professionalize learners;
- 3) to foster critical reflection and empowerment as change agents within communities.

Each training cycle lasts an entire growing season, combining theoretical courses with supervised practice. Learners follow the rhythms of the farm and participate in decision-making processes. Trainers transmitting tacit knowledge accumulated through years of peasant practice, learners are then exposed to the social, economic, and ecological realities of peasant life.

3.2 Case selection

The first step of the research consisted of identifying agroecological training initiatives in French-speaking Belgium that could be qualified as farm schools (Appendix 2 in the Supplementary material). Four criteria were applied: (1) an explicit focus on agroecology and peasant farming, (2) long-term immersive training, (3) the existence of at least one graduated cohort, and (4) more than 8 years of training experience. Based on this inventory, *le Mouvement d'Action Paysanne* (Le MAP) emerged as the only initiative meeting all four criteria. Beyond fulfilling these conditions, *Le MAP* is also the only organization explicitly claiming affiliation with the farm school movement.

Since the creation of the EPI, seven farm schools have been part of the network: six specializing in agroecological market gardening [see Dumont et al. (2020) or Biot et al. (2025) for a definition in the Walloon context] and one in farmer-baker production. Each farm school operates on an active production site and simultaneously functions as a learning environment. While all farm schools share common objectives and a commitment to agroecology, solidarity, and autonomy, each reflects the specific expertise and vision of its

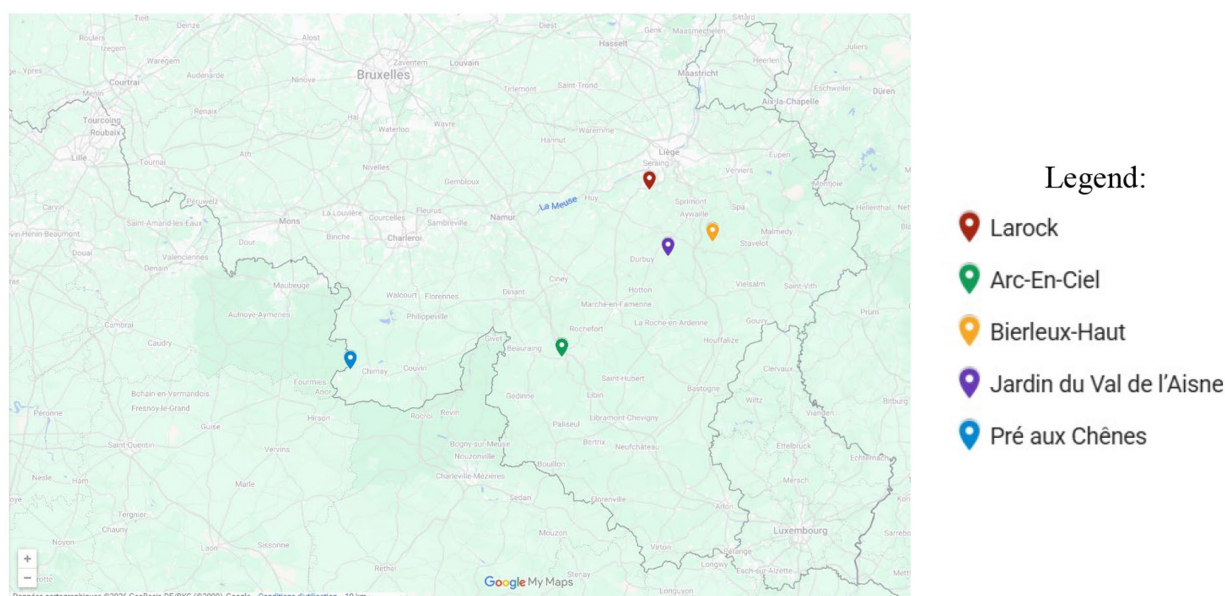


FIGURE 1

Location of the 5 active farm schools in Wallonia (Belgium). Source: The map was created using Google My Maps (Google Maps) and displays the geographical distribution of the farm schools included in the study. Colored markers represent individual farm schools.

trainer. In practice, in 2023 and 2024, only 5 farm schools were active (see Figure 1).

Among these 5 active farm schools, the one specialized on the profession of farmer-baker (i.e., called “Pré aux Chênes” and in the network since 2017). Will not be further considered in the subsequent analysis due to this distinct focus.

The other four peasant farms schools train in agroecology market gardening. This constitutes their similarity. However, each farm school teaches by emphasizing different practices or agroecological visions. Moreover, some training includes other particularities. This is why it seems important to describe the farm schools quickly.

- “*Larock*” farm school: This training also includes livestock management aspects (such as management of a bovine herd, the role of the animal on the farm, milking, milk processing, pasture, and forage management). This farm follows the biodynamic principles and philosophy (Scheepmans, 2023a).
- “*Arc-En-Ciel*” farm school: The training focuses on soil quality. Learners are taught agricultural practices such as BrEF, Bokashi, Biochar, Terra Preta, Effective Microorganisms EM, compost teas, etc. (Scheepmans, 2023b).
- “*Bierleux-Haut*” farm school: In this farm school special attention is given to draft horses. The training includes ethology, trimming, and dressage (Scheepmans, 2023c).
- “*Jardin du Val de l’Aisne*” farm school: This training is heavily focused on self-sufficiency in the broad sense: low-tech mechanics and eco-construction. Learners will, for example, learn how to solder (Scheepmans, 2023d).

The learners enrolled in farm school programs are heterogeneous. They include aspiring farmers without formal agricultural backgrounds, individuals undergoing career transitions, and

participants motivated by ethical, environmental, or political concerns rather than immediate professional establishment.

To ensure analytical consistency, only farm schools with comparable years of training experience and similar curricular structures were selected. Consequently, three active market gardening farm schools, anonymized as A, B, and C, were retained for the study.

3.3 Data collection

The research team conducted exploratory visits in 2023 to the three selected farm schools. Several full days of training were observed in each farm school, and theoretical lessons were attended. These visits enabled direct observation of pedagogical practices and facilitated preliminary interviews with trainers and learners, providing contextual understanding of the training environments.

To assess former learners’ experiences and outcomes, an online survey was subsequently designed. Access to former learners was made possible through the membership database of *Le MAP*, which identified 305 individuals who had participated in EPI programs. Given the limited administrative capacity of the network, this database did not capture all individuals trained since the foundation of the farm schools, but it constituted the most ample available source.

We assume that, despite minor adjustments over time, the core identity and pedagogical characteristics of each farm school remain largely stable. This stability is further reinforced by the fact that the lead trainer at the farm school has remained the same since its establishment. The role of the lead trainer is central in shaping the learning environment and pedagogical approach. Consequently, analysis of the current curriculum provides a reliable basis for interpreting former learners’ training experiences and living conditions. For this reason, preliminary field observations and explanatory interviews constitute a necessary first step in the research process to contextualize and interpret survey responses.

Field observations were conducted as an exploratory and qualitative component of the research design. Rather than relying on a predefined observation grid, an open and flexible observation approach was adopted. This choice was intentional, aiming to capture the complexity and situated nature of pedagogical practices without constraining the observation process to predefined categories. This approach is consistent with qualitative research traditions in participant observation, which emphasize the importance of inductive and context-sensitive data collection (Emerson et al., 2011). Observations were recorded through detailed field notes taken during full training days, focusing on pedagogical interactions, learning environments, and the articulation between practice and theory. The objective of these observations was not to produce standardized measurements, but to develop a contextualized understanding of the pedagogical processes and to support the interpretation of survey results.

A total of 107 former learners completed the survey, corresponding to a response rate of 35% (Table 2). Respondents associated with short-term or purely theoretical courses, as well as those linked to host farms or “A and B” courses, were excluded from the analytical sample, as these trainings did not meet the definition of farm schools. After applying these selection criteria, 67 valid responses corresponding to former learners of the three selected farm schools were retained for analysis (Table 3).

3.4 Research design

The survey questionnaire was developed based on insights gained through direct observation of the farm schools and included both open-ended and closed-ended questions. Open-ended questions were particularly effective in encouraging more detailed and candid responses, such as personal experiences. This method allowed participants to express themselves freely, ensuring their voices are heard (Hansen and Świdorska, 2023; Singer and Couper, 2017). The survey was structured into four sections, each designed for capturing different aspects of the training experience and outcomes.

The survey began with a “feedback” section aimed at evaluating perceptions of the training program among former learners. It featured three open-ended questions, allowing participants to share their general impressions of the training and suggest possible improvements. A closed-ended question that allowed former learners to give a satisfaction rating out of 10. Additionally, this section included a 5 Likert-scale inventory (strongly disagree, ‘disagree’, ‘neutral’, ‘agree’, and ‘strongly agree’), consisting of five statements (Table 4), each addressing potential opinions about the training.

To assess experiential engagement empirically, survey statements were developed and adapted to the context of farm

school-based training. The questionnaire included 10 statements grouped into eight experiential engagement dimensions: concentration, clear goals, feedback, challenge, autonomy, immersion, social interaction, and knowledge acquisition. These dimensions were informed by the EGameFlow framework (Fu et al., 2009), but the original scale was not reproduced. Instead, one or two representative statements were selected for each dimension and adapted to a retrospective survey and to the context of farm-based training. This adaptation was necessary because the study did not examine short-term digital learning activities, but long-term experiential training in real farming environments. The resulting statements are therefore interpreted as context-specific indicators of experiential engagement, rather than as a validated measurement of flow. To ensure survey feasibility and limit respondent burden, a reduced number of statements was retained. All statements were assessed using a five-point Likert scale ranging from strong disagreement to strong agreement (same scale as for the “feedback” section).

A “professional integration” section was also included to assess the impact of the training on participants’ post-training careers. This section also gathered background data to characterize former learners. It included general questions such as age and motivations for participating in the training (close-ended question), as well as specific questions related to work experience and any previous agricultural training. It also included a closed-ended question about the obstacles and barriers faced. To assess their relative importance, it was asked to former learners to rank a series of 10 predefined items known as the most encountered obstacles to business establishment in farming.

Finally, a section dedicated to “change agency” was included in the survey to capture the broader and longer-term effects of farm schools understood as a signature pedagogy. Signature pedagogies are expected to shape not only technical competencies, but also durable dispositions influencing how learners analyze situations, make decisions, and engage with their social and professional environments. This section therefore began with the statement: “*The experience I had with Le MAP has influenced the decisions I make in my daily life and/or the way I analyze situations.*” Former learners were asked to respond with either ‘yes’ or ‘no’. A negative response ended the section, whereas a positive response led to a set of eight statements designed to assess the extent to which this pedagogical experience translated into sustained changes across multiple spheres of action (see survey questionnaire, Supplementary material).

Responses were assessed using a five-point Likert scale ranging from ‘no impact’ to ‘very strong impact’. The first four statements focused on food-related behaviors, reflecting everyday practices directly connected to agroecological values. The remaining statements

TABLE 2 Distribution of former learners ($n = 107$).

The Independent Peasant School (EPI)							
Farm Schools							Other trainings
A	B	C	D	E	F	G	
25	21	21	2	6	3	4	25

TABLE 3 Study sample of former learners ($n = 67$).

Farm schools			Sample
A	B	C	
25	21	21	67

TABLE 4 Additional statements.

Statements
The training was beneficial in improving my understanding of peasant agriculture.
I enjoyed the training.
The training should have been longer.
The training was of high quality.
The training offered a well-balanced mix of practical and theoretical components.

TABLE 5 Consumption Index.

Statements	Weights
I pay attention to waste generated by my food consumption.	25%
I buy local food.	25%
I purchase fruits, vegetables, meat, or bread from peasant farming.	25%
I consume foods produced without pesticides	25%
Consumption Index	100%

addressed broader dimensions (political, familial, professional, and personal) corresponding to different arenas in which signature pedagogies are expected to produce enduring effects. When respondents selected ‘strong impact’ or ‘very strong impact’, they were invited to provide concrete examples. The four food-related statements were aggregated into a Consumption Index (Table 5) to synthesize changes in daily food practices.

Given the length of the survey, it was decided not to require former learners to answer all questions. Some questions were mandatory (see survey questionnaire, [Supplementary material](#)), while others were optional, allowing participants the flexibility to complete the survey at their own pace. This approach was intended to reduce survey fatigue and increase response rates, ensuring that participants could provide thoughtful and detailed answers to the most critical questions.

3.5 Data analysis of survey results

The analysis of survey responses primarily involved reviewing the aggregated feedback, data, and scores provided by former learners, grouped by farm school or grouped by type of motivation for enrolling in the training program. Statistical analysis was conducted using R software version 3.5.3 (R Core Team, 2021).

For the feedback section, descriptive statistics were used to analyze the overall satisfaction score. An ANOVA and confidence interval were used to see if scores varied between farm schools. Then, open-ended responses were analyzed using a thematic approach. Initially, lexical fields mentioned by respondents were identified, allowing key themes to emerge. A binary variable was then created for each theme, assigning a value of 1 if the theme was mentioned and 0 if it was not. Finally, the individual responses were aggregated by

each farm school to facilitate comparative analysis. Finally, a factorial correspondence analysis was applied to the proposed improvements (Section 3.4). This analysis technique is a valuable data science visualization tool, allowing for the identification and representation of relationships between the values of one variable and various other variables within a geometrical space.

Responses to the 10 experiential engagement statements were converted into a 0–4 scale, ranging from 0 (“strongly disagree”) to 4 (“strongly agree”). For each former learner, dimension scores were calculated by averaging the statement scores associated with each of the eight engagement dimensions.

An overall experiential engagement score was then computed by averaging the scores of the 8 dimensions. Given the adapted and exploratory nature of these indicators, this score should be interpreted as a synthetic measure of perceived experiential engagement, rather than as a standardized psychological measure of flow. Descriptive statistics, including median scores, were calculated for the full sample and by farm school. A regression analysis was then conducted to explore the association between the overall experiential engagement score and the satisfaction score.

For the professional integration section, descriptive statistics were primarily used by farm schools. Additionally, a one-factor analysis of variance (ANOVA), Tukey’s test and some Fisher’s exact tests were conducted to analyze the data. For the barriers to agricultural establishment, the ranking of statements was considered. Specifically, the top-ranked barrier received a score of 10, with subsequent rankings assigned progressively lower scores. The results were then compiled by farm school and divided by the total possible score to estimate each obstacle’s relative importance as a percentage.

For the change agent section, descriptive statistics were used to analyze if farm schools influence the capacity of former learners to become actors of change.

4 Results

In this section, we present our results that deal with the relevance of each of the 3 farm schools selected for the EPI network (A, B and C). The findings are classified into four analytical dimensions used to operationalize pedagogical relevance: (1) learner feedback, (2) experiential engagement during training, (3) professional integration, and (4) change agency.

4.1 Feedback about the training

Results from the “feedback” section are presented in three steps: overall satisfaction scores, qualitative perceptions of training quality, and perceived areas for improvement.

Overall, farm school training is well regarded by former learners. Half of the respondents rated their overall satisfaction at 8 out of 10 or higher, with an average score of 7.93 and a median score of 8 (Figure 2). While satisfaction levels are generally high across the sample, greater variability was observed in Farm School A, where three respondents assigned a score of 5.

Normality was not met for two farm schools (A and B), but homogeneity of variance was confirmed. Given the documented robustness of the one-way ANOVA to moderate departures from normality, we

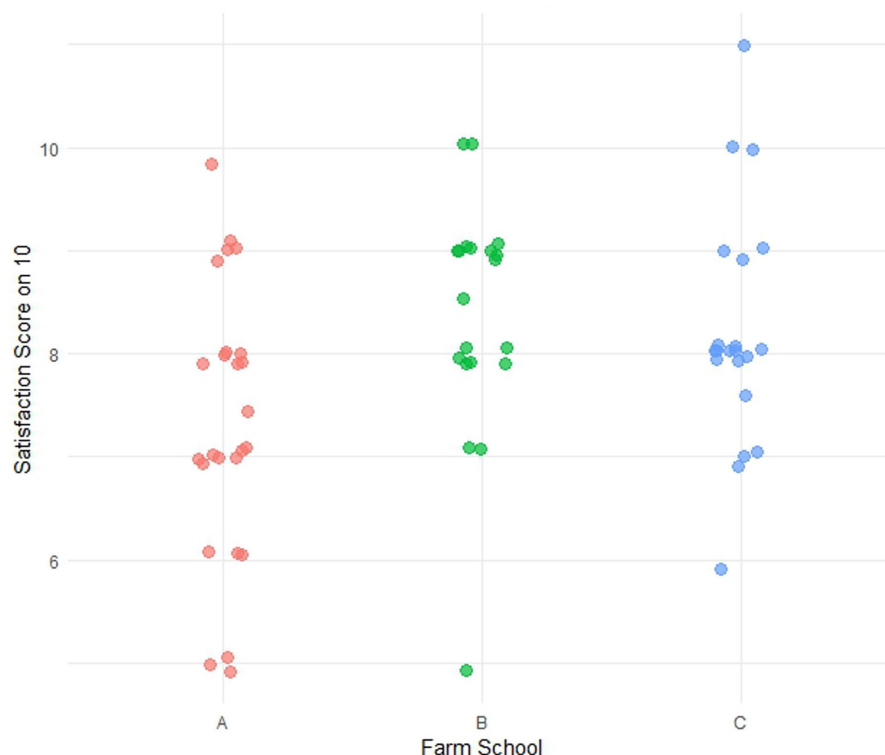


FIGURE 2
Dot plot of satisfaction score by farm school.

TABLE 6 Response rate and elements spontaneously mentioned by former learners regarding the quality of training.

Items	Sample	Farm Schools		
		A	B	C
Response rate (<i>n</i>)	91% (61)	100% (25)	81% (17)	90% (19)
Interesting/Meets expectations	69%	76%	71%	71%
Varied training	34%	16%	65%	38%
Lack of pedagogical structure	21%	36%	6%	19%
Initiation	27%	36%	12%	33%
Self-development	9%	4%	18%	10%

Bold values indicate percentages calculated for the full sample; non-bold values are reported by farm school.

conducted an ANOVA and interpret results cautiously, which yielded a significant result (p -value < 0.05). The 95% confidence intervals for each group partially overlap between farm school A and the other groups, suggesting that there may be a significant difference between A and B or C. However, the confidence intervals for B and C overlap, indicating that there is likely no significant difference between these two groups.

Two open-ended questions were used to capture overall perceptions of training among former learners. Responses to the question “What did you think about the training?” indicate that the majority of respondents perceived the training as interesting and aligned with their expectations (69%; Table 6). Approximately one third of respondents spontaneously mentioned the diversity of the training, an aspect particularly emphasized by former learners from farm school B. This diversity is reflected in comments such as: “Excellent. Very diverse, the goal was to confirm my desire to establish myself [...]. Promises exceeded my expectations.”

Regarding the pedagogical aspect of the training, one-fifth of former learners felt that the program lacked structure. By “structure,” they referred, for example, to insufficiently defined learning objectives, an imprecise training schedule, or a theoretical/practical balance that could have been more suited to their expectations. This issue is especially evident at farm school A, where feedback is both highly positive and notably critical. While the training largely met the expectations of most participants (76%), many expressed (36%) that the program could have benefited from a more structured pedagogical approach.

In addition, around one quarter of respondents described the training as an initiation to market gardening and peasant agroecology rather than as full preparation for autonomous farm management. This is reflected in comments such as “The training was very interesting, and even though it was only one day per week over a season, I gained a solid overall understanding of agroecology. Having found a job as a farm worker at the end of the training, I believe it is a good way to get started, a solid stepping stone to progress further in the farming world.”

Beyond technical learning, a smaller proportion of former learners report personal development outcomes, including increased self-confidence and psychological well-being. Although less frequently mentioned, these elements point to non-technical effects of the training experience.

The second open-ended question addressed perceived opportunities for improvement: “What are three potential improvements for future training?” Across the sample, pedagogical aspects were the most frequently mentioned area for improvement. Former learners notably suggest clearer learning objectives, increased theoretical input, written materials to consolidate learning, and additional practical tools, such as how to create a crop cultivation plan.

Once themes were identified, a factorial correspondence analysis was conducted to explore relationships between farm schools and proposed improvements (Figure 3). The analysis revealed two main profiles. Farm school A was primarily associated with a need for increased networking and exchanges with peasant professionals. In contrast, farm schools B and C were more strongly associated with improvements related to accommodation conditions and the articulation between training objectives and labor contributions within the farm school.

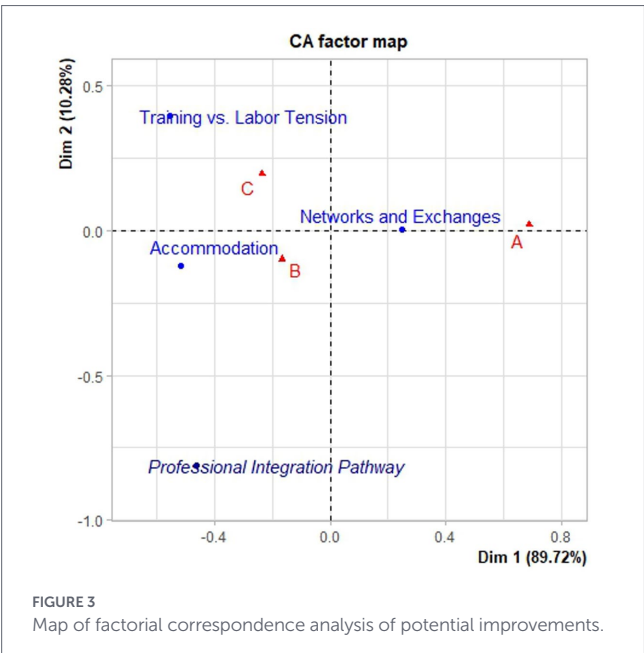


FIGURE 3 Map of factorial correspondence analysis of potential improvements.

Responses to the closed-ended statements confirm a high level of satisfaction across the EPI network (Table 7). A large majority of former learners agreed that the training improved their understanding of peasant agriculture and that they enjoyed the training experience. However, the proportion of positive responses to the statement “The training offered a well-balanced mix of practical and theoretical components” is significantly lower in farm school A compared to the other farm schools, highlighting a specific pedagogical tension within this site.

4.2 Experiential engagement during training

On a scale ranging from 0 to 4, the median score across the eight experiential engagement dimensions reaches 3.1, corresponding to agreement with most engagement-related statements. This indicates a generally high level of experiential engagement during training. Among the eight factors, autonomy received the lowest median score (2), corresponding to a neutral position. Field discussions and interviews indicate that some former learners express a desire for greater opportunities for individual experimentation in order to increase autonomy during training.

Regarding differences between farm schools, four experiential engagement dimensions—knowledge acquisition, social interaction, challenge, and clear goals—receive comparable median scores across sites (Figure 4). At farm school A, feedback and autonomy are the lowest-rated factors, while autonomy also receives the lowest rating at farm school C. In contrast, farm school B displays the highest median engagement scores overall, ranking first across all factors, either jointly or alone for concentration, autonomy, and immersion.

Moreover, to examine the relationship between experiential engagement and overall satisfaction, we tested the association between the overall experiential engagement score and the satisfaction score. Prior work suggests on flow and engagement can co-occur with higher satisfaction and engagement; the study also sought to confirm or refute whether a relationship exists between the satisfaction score assigned to the training and the overall experiential engagement score. As a reminder, Burke’s study (2010) underscored the importance of harnessing flow to enhance work satisfaction. While his research focuses on professional settings, Mladenović et al. (2017) and Chan and Ahern (1999) emphasize the role of flow in fostering learning. In this study (Figure 5), the overall experiential engagement score is a highly significant variable ($p < 0.0001$, with approved application conditions). Based on this regression, it is estimated that each additional point in the experiential engagement score results in an increase of 2.58 points in the training grade.

TABLE 7 Rate of positive responses to each statement.

Statements	Sample	Farm schools		
		A	B	C
The training was beneficial in improving my understanding of peasant agriculture	94%	92%	95%	95%
I enjoyed the training.	93%	92%	90%	95%
The training was of high quality.	84%	80%	95%	86%
The training should have been longer.	13%	8%	19%	14%
The training offered a well-balanced mix of practical and theoretical components.	66%	40%	86%	76%

Bold values indicate percentages calculated for the full sample; non-bold values are reported by farm school.

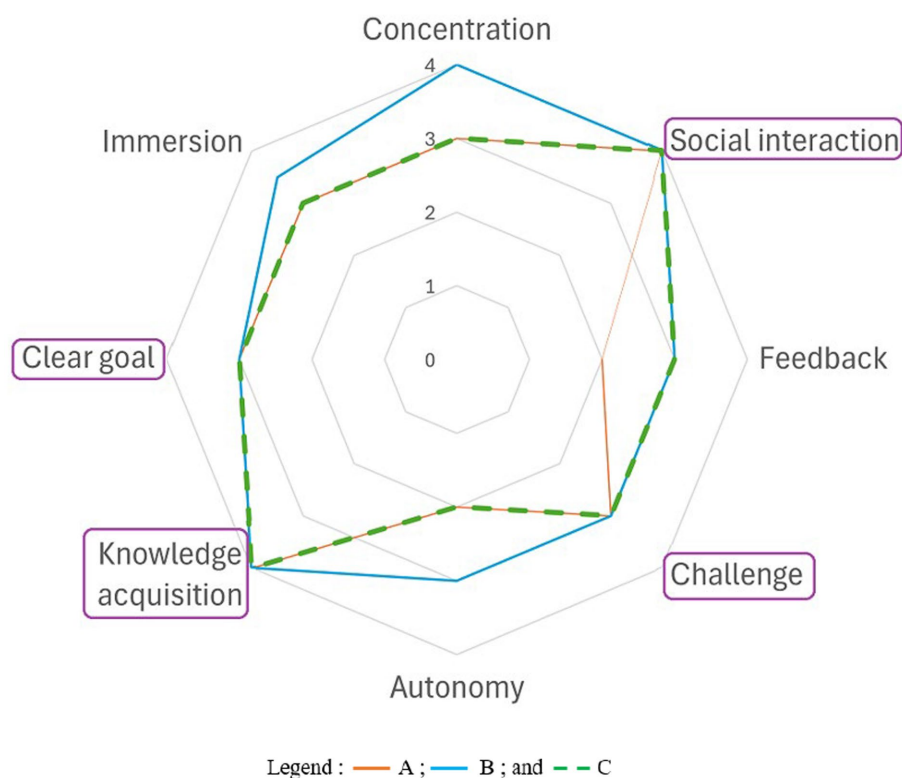


FIGURE 4
Median of each dimension of engagement by farm school.

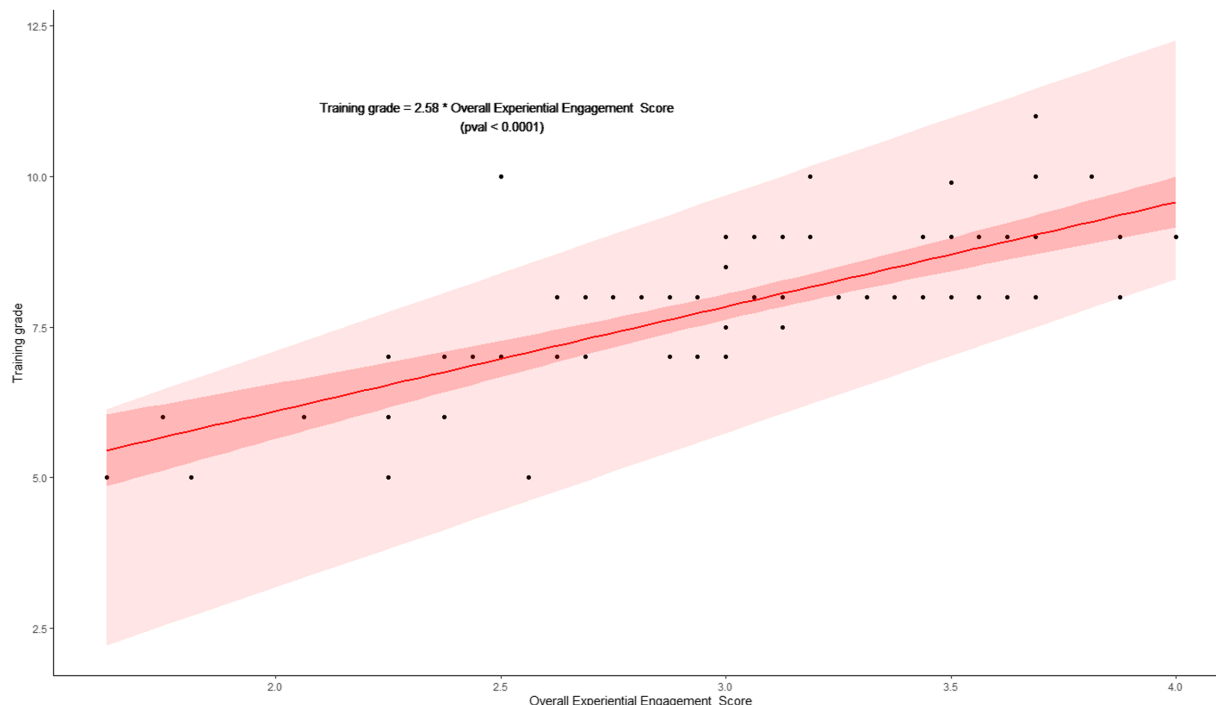


FIGURE 5
Linear regression between training grade and overall experiential engagement score.

4.3 Professional integration

All farm schools focusing on agroecology provided training programs designed to prepare learners for professional roles in the

agricultural sector, adopting practices rooted in agroecological principles. To assess the alignment between training objectives and learner motivations, former learners were asked to indicate their two main reasons for participating in the training.

A total of 26 former learners on 67 (i.e., 39%, [Table 8](#)) report that their first or second motivation for participating in the training was business establishment in farming. Among them, almost a third manage (31%) to do so. Although it must be interpreted very cautiously given the very low samples involved, it appears that the rate of establishment (i.e., 40%) is higher at farm school B. It must also be noted that, quite unexpectedly, four individuals who did not primarily enroll in the training to establish themselves in agriculture ultimately do so after completing the program. Among them, three attended the training at farm school C and one at farm school A. All the 12 individuals who have established themselves consider their farming practices to be agroecological. A great majority of them (8 out of 11, with one abstention) also agreed that the training significantly or strongly helped them establish themselves in agriculture.

Former learners motivated to establish a farming activity were asked to rank a predefined list of 10 commonly reported barriers to agricultural establishment. The relative importance of these barriers is largely consistent across farm schools ([Table 9](#)). Access to land emerged as the most significant constraint at the sample level, followed by access to capital and uncertainty of remuneration. Other frequently cited barriers included lack of knowledge and self-confidence.

Some variations are observed between farm schools. Access to land was particularly emphasized at farm school A, while social pressures from family or professional networks were less frequently reported at farm school B. At farm school C, lack of knowledge was ranked lower than in the other sites. Overall, regulatory constraints and access to agricultural subsidies are perceived as less limiting than material and economic factors.

As previously noted, expecting that every former learner motivated to establish themselves in agriculture would start their own business is unrealistic. Therefore, examining the former learner who did not establish themselves in agriculture and their overall employment outcomes becomes valuable. Among this group, 44% are employed in the agricultural sector or in jobs related to peasant agriculture ([Table 10](#)).

Employment patterns vary between farm schools. In Farm school A showed the highest proportion of employment (50%), whereas farm school B displayed the lowest overall employment rate in this subgroup (17%). Farm school C exhibits the highest overall employment rate across all sectors combined (67%). At Farm School A, all three former learners are employed in occupations related to the peasant agriculture sector. These results indicate that, beyond direct establishment, farm school training supports diverse forms of professional integration within and beyond the agricultural sector.

TABLE 8 Number of former learners motivated to establish themselves in agroecology and what they have done after training.

Initial motivation and post-training trajectory	Sample	Farm schools		
		A	B	C
Motivation to establish myself in agriculture	26	8	10	8
<i>After training,</i>				
<i>you have established yourself in agriculture.</i>	8	2	4	2
<i>you still plan to establish yourself one day.</i>	8	3	2	3
<i>you no longer plan to establish yourself.</i>	10	3	4	3

Establishment in agriculture after training corresponds to one of the professional integration objectives of the farm schools.

TABLE 9 Weight of each obstacle allocated by former learner expressed as a percentage.*

Type of obstacles	Sample	Farm schools		
		A	B	C
Access to Land	20%	25%	19%	18%
Access to Capital	16%	12%	19%	16%
Uncertainty of remuneration	11%	13%	9%	12%
Lack of Knowledge	10%	11%	11%	8%
Self-Confidence	10%	8%	10%	10%
Hardship of the Profession	9%	10%	9%	10%
Regulations	8%	4%	8%	10%
Human Capital	7%	7%	8%	6%
Granting of Agricultural Aid	6%	3%	6%	7%
Social Pressures	3%	6%	1%	3%

*As explained in the Materials and Methods section, we assessed the barriers to agricultural establishment by considering the ranking of statements. Specifically, the highest-ranked barrier was assigned a score of 10, with subsequent rankings receiving progressively lower scores. The results were then aggregated at the farm school level. To estimate the relative importance of each obstacle as a percentage, we summed the total scores assigned within each farm school (e.g., 250 points in total). We then divided the points allocated to a specific category (e.g., 50 points for 'Access to Land') by this total (e.g., 50/250 = 20%). Bold values indicate percentages calculated for the full sample; non-bold values are reported by farm school.

4.4 Change agency outcomes

A section dedicated to change agency was included in the survey to assess the broader and longer-term effects of farm schools understood as a signature pedagogy. Former learners were first asked to respond to the statement: “*The experience I had with Le MAP has influenced the decisions I make in my daily life and/or the way I analyze situations.*” Responses were binary (yes/no). A positive response led to a set of eight additional statements designed to capture sustained impacts across multiple spheres of action.

Across the sample, 75% of former learners report that their experience within the MAP farm schools had influenced their decision-making processes and analytical frameworks (Table 11). This proportion is lowest in farm school A (68%) and higher in farm schools B (81%) and C (76%).

For respondents reporting an influence of the training, four statements related to food practices were aggregated into a Consumption Index (Table 5). Results indicate a generally high level of impact on food-related behaviors across farm schools (Figure 6). Although former learners from farm school A report a lower overall proportion of perceived influence at the initial screening question, consumption-related impacts among those who reported being influenced were comparable to, and in some cases higher than, those observed in the other farm schools. However, this difference is not statistically significant.

Beyond food-related practices, four additional dimensions are analyzed: daily life, community or political engagement, personal networks, and professional life (Table 12). Across the entire sample, daily life emerges as the most strongly impacted dimension (Figure 7), with half of respondents reporting strong or very strong changes toward greater sustainability. These changes include concrete modifications of everyday practices and routines.

The three remaining dimensions (Figure 7)—community or political engagement, personal networks, and professional life—display moderate but consistent impacts, with median scores corresponding to moderate influence. Former learners report engagement in a variety of collective, social, and professional activities related to agroecology and sustainability, indicating that the effects of the training extend beyond individual practices.

Spearman correlation analyses revealed moderate to strong positive associations between the four change agency dimensions (ρ ranging from 0.38 to 0.75), indicating that impacts on daily life, community or political engagement, personal networks, and professional practices tend to co-occur rather than operate independently. This coherence suggests that reported changes form an integrated profile of change agency rather than isolated behavioral effects.

While overall patterns are consistent across the network, some variations between farm schools are observed. Farm school B displayed slightly higher median scores across daily life and professional life dimensions, whereas farm school C showed relatively higher scores in the personal network dimension and lower scores in daily life. These variations did not alter the general pattern of sustained, multi-dimensional impacts observed across the sample.

5 Discussion

5.1 Pedagogical strengths and transformative impact

This section discusses the pedagogical relevance of farm schools through the lens of experiential learning and transformative outcomes.

TABLE 10 Work after training for former learners motivated to establish themselves in agroecology (and who did not establish themselves).

Post-training professional situation	Sample	Farm schools		
		A	B	C
<i>you started working in the agricultural sector.</i>	3	0	1	2
<i>you have a job related to peasant agriculture.</i>	2	1	0	1
<i>you started working in the agricultural sector and you have a job related to peasant agriculture.</i>	3	2	0	1
Total	8	3	1	4
Percentage	44%	50%	17%	67%

Note. Percentages are calculated relative to the number of former learners who reported an initial motivation to establish themselves in agriculture but did not establish themselves after training: Sample, $n = 18$; Farm School A, $n = 6$; Farm School B, $n = 6$; Farm School C, $n = 6$.

TABLE 11 Impact of Le MAP training on decision-making and way of analyzing across farm schools.

MAP impact	Sample	Farm schools		
		A	B	C
Le MAP impactful	50	17	17	16
Le MAP not impactful	17	8	4	5
Percentage of impactful cases	75%	68%	81%	76%

Medians of the Consumption Index (on 10)

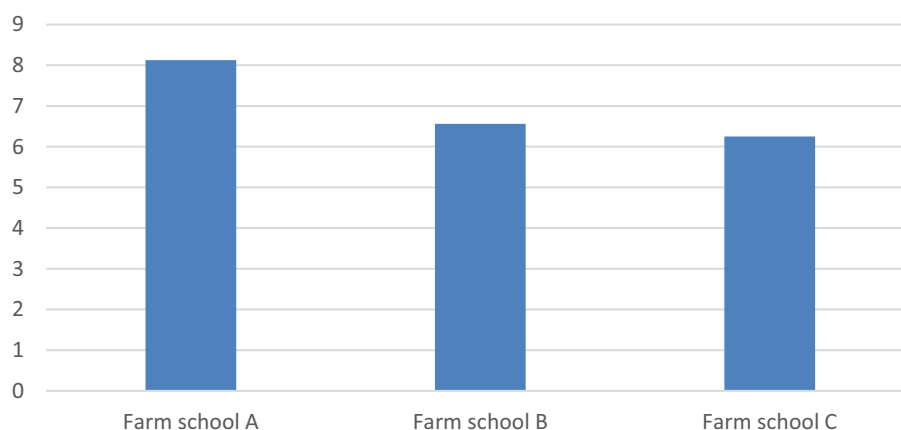


FIGURE 6
Consumption Index (on 10)—median by school farm.

TABLE 12 Categories for the statements.

1. Daily Life:
I implement concrete changes to enhance sustainability in my daily life.
2. Community or Political Engagement
I engage within my community or the political sphere on issues related to agroecology.
3. Personal Networks
I positively influence the choices made by my family and friends.
4. Professional Life:
I implement concrete changes to enhance sustainability in my professional life.

The findings suggest that the farm schools coordinated by *Le Mouvement d'Action Paysanne* represent a distinctive form of community-based agroecology education that successfully combines long-term experiential learning, reflexivity, and community engagement. Former learners express high levels of satisfaction and appreciation for the diversity of learning experiences, particularly within farm school B. These results are consistent with previous research emphasizing the effectiveness of situated and experiential learning environments in agroecology education, where cognitive, affective, and social dimensions of learning are closely intertwined (Valley et al., 2018). From an experiential learning perspective, such perceptions reflect how learners engage with and interpret pedagogical environments, which constitutes a key dimension of learning process (Entwistle, 2017; Kolb et al., 1986) and contributes to the pedagogical relevance of the training by shaping meaningful learning experiences.

Beyond technical skill acquisition, learners' testimonies point to the transformative potential of immersive farm-based training. Several former learners described the training as a process of personal transformation, contributing to increased self-confidence, psychological well-being, and identity reconstruction. Such outcomes resonate strongly with transformative learning theory, which highlights the role

of lived experience and critical reflection in reshaping worldviews, values, and self-perceptions (Niewolny et al., 2012). In the context of agroecology education, such transformations are particularly relevant, as they support capacity of learners to critically engage with dominant agri-food systems and to reconfigure their relationship to agricultural practices (Anderson et al., 2019a,b; Meek and Tarlau, 2016). These outcomes therefore constitute core dimensions of pedagogical relevance, rather than mere secondary effects.

The perception of the training as an "initiation" to peasant agroecology, reported by a subset of former learners, further nuances this interpretation. In some farm schools, particularly those with fewer diversified income sources, learners experience the training as more intensive and closely aligned with the economic realities of market gardening. Field observations suggest that this perceived realism, associated with production pressures and limited financial margins, may reinforce professional immersion while simultaneously heightening the demands placed on learners. It also highlights how local socio-economic conditions shape the lived experience of farm school training. This finding is consistent with research emphasizing the situated and context-dependent nature of agroecology education (Lieblein et al., 2004; Østergaard et al., 2010).

The positive relationship observed between engagement and overall satisfaction provides further insight into the mechanisms underpinning experiential engagement. This interpretation is consistent with educational research highlighting engagement as a key condition for effective learning processes (Shernoff and Csikszentmihalyi, 2009). In agroecology education, such engagement reflects the immersive and embodied nature of learning environments, where knowledge is constructed through action, interaction, and reflection (Francis et al., 2011). The observed association between engagement and satisfaction therefore supports the relevance of experiential engagement as a dimension of pedagogical relevance.

Nevertheless, certain methodological constraints must be acknowledged. The survey captured 67 valid responses, a substantial but not exhaustive sample. Triangulation with field observations was used to strengthen the robustness of the analysis and to

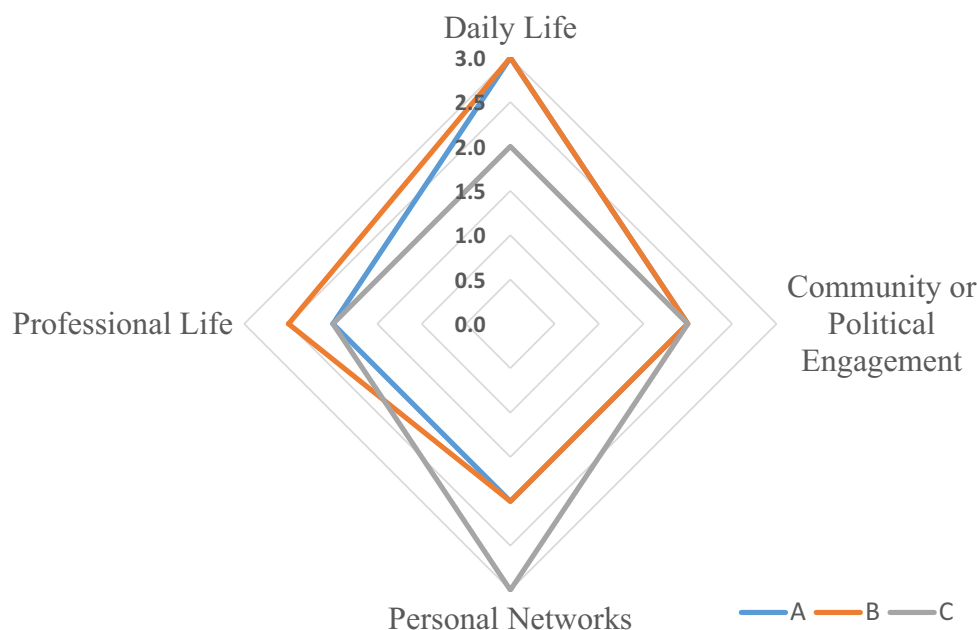


FIGURE 7

Four categories of change agent empowerment ranked from 0 to 4 (no impact to really strong impact).

contextualize self-reported data, as voluntary participation might have overrepresented the most engaged or satisfied learners. These limitations do not undermine the findings but highlight the need for further longitudinal research to assess longer-term transformative effects.

5.2 Balancing practice, theory and ethical boundaries

This section highlights key tensions affecting pedagogical relevance, particularly regarding the balance between practice, theory, and ethical conditions of learning.

While immersion constitutes a core element of the pedagogical identity of *Le MAP* farm schools, participants frequently reported insufficient theoretical framing and structure. The strong emphasis on practice was widely valued, yet many respondents requested clearer learning objectives, more written materials, and explicit links between hands-on work and agroecological theory. Similar challenges are highlighted by Coquil et al. (2018), who emphasize the need to balance experiential immersion with conceptual scaffolding to enhance knowledge retention and systemic understanding. From an experiential learning perspective, this tension reflects the difficulty of ensuring the articulation between concrete experience and abstract conceptualization, which constitutes a key condition for effective learning processes (Kolb et al., 1986).

This tension reflects a broader issue in transformative education: the articulation of tacit knowledge into explicit frameworks (Ingram, 2018). Transformative learning theory further suggests that critical reflection plays a central role in enabling learners to make sense of their experiences and integrate them into coherent frames of reference (Mezirow, 2000; Taylor, 2008). In immersive

farm-based learning contexts such as the MAP farm schools, the absence of structured moments for reflection and theory–practice integration may result in fragmented learning. This finding is consistent with previous research in agroecology education highlighting the need to reconnect knowledge and action through structured reflexive processes (Lieblein et al., 2004; Francis et al., 2011). Such limitations may therefore affect pedagogical relevance by constraining the consolidation and transferability of learning outcomes. Introducing collective debriefings, reflexive journals, or peer discussion groups could help consolidate experiential insights and strengthen the pedagogical coherence of the training without undermining its experiential character.

Beyond pedagogical structuring, the data brings to light an important ethical dimension related to the balance between learning and labor. Some former learners reported tensions between the educational objectives of the training and their role as labor contributors within the farm schools, particularly prior to the introduction of public subsidies. This raises concerns about the clarity of pedagogical intent and the fairness of labor arrangements. These perceptions underscore the importance of clearly delineating educational activities from productive labor in immersive training environments. Such tensions echo broader debates in work-based and experiential learning, where the boundary between learning and productive labor can become blurred, raising both pedagogical and ethical concerns (Billett, 2011).

From the perspective of signature pedagogy, ethical boundaries between learning and labor are not secondary considerations but central to preserving the pedagogical integrity of farm schools. Signature pedagogies are characterized not only by specific forms of teaching and learning, but also by the values and norms that structure professional formation (Valley et al., 2018). Ensuring that experiential learning remains a space for reflection,

empowerment, and skill development—rather than a source of ambiguity—requires clear training frameworks and transparency regarding expectations and compensation. At the same time, administrative and resource constraints typical of grassroots organizations partly explain existing gaps. The decentralized structure of *Le MAP* network, combined with limited funding and uneven record-keeping, constrains the ability to formalize pedagogical frameworks consistently across farm schools. These constraints are consistent with broader observations on grassroots agroecology initiatives, which often operate with limited institutional support while maintaining strong contextual and community-based characteristics (Anderson et al., 2019a,b). Strengthening institutional support, coordination, and the development of shared pedagogical tools could help mitigate these tensions while preserving the authenticity and contextual specificity of each farm-based learning environment.

5.3 Professional integration, structural barriers and change agency

This section examines pedagogical relevance in terms of socio-professional integration and broader transformative impacts.

Professional integration outcomes reveal both promises and constraints. A substantial proportion of learners achieved professional integration, either by establishing agroecological farms or by working in related sectors. These findings are consistent with previous research showing that agroecology education supports diverse forms of socio-professional integration, extending beyond farm establishment to include hybrid and alternative trajectories within food systems (van der Ploeg et al., 2019). However, structural barriers, particularly limited access to land and capital, continue to impede broader transitions, reflecting systemic challenges for new entrants into European agriculture (Van Der Ploeg et al., 2015). These constraints highlight how broader structural conditions shape the outcomes of pedagogical processes and therefore condition the realization of pedagogical relevance.

Importantly, the analysis of change agency reveals that the impacts of farm school training extend well beyond formal professional establishment. The coherence observed across dimensions of change agency—daily life, community or political engagement, personal networks, and professional practices—suggests that farm schools foster integrated and sustained forms of engagement rather than isolated behavioral changes. This finding aligns with research in agroecology education emphasizing that learning processes contribute to the development of capacities for action across multiple spheres, rather than solely technical competencies (Francis et al., 2020; Meek and Tarlau, 2016). It further suggests that pedagogical relevance extends beyond employment outcomes to include the capacity of learners to influence socio-ecological systems across different domains. In the context of Wallonia, this engagement materializes through participation in concrete institutional and collective arrangements, such as involvement in local associations, cooperative initiatives, food system mediation roles, or municipal level agroecological projects. In parallel, many former learners describe acting as role models within their personal networks, influencing family members, friends, and colleagues through everyday practices and professional choices.

Beyond individual trajectories, these findings highlight the role of farm schools in supporting food system transitions, through the emergence of actors capable of influencing production, distribution, and consumption practices.

These forms of engagement can also be interpreted as contributions to broader food system transformations, as learners participate in the development of alternative production models, local food networks, and more sustainable consumption practices (Francis et al., 2020; IPES-FOOD, 2020).

These findings reinforce the interpretation of farm schools as a signature pedagogy of agroecology, capable of shaping dispositions across multiple spheres of life (Francis et al., 2017). More broadly, this result resonates with transformative learning theory, which emphasizes the development of agency and the capacity to enact change as key outcomes of educational processes (Mezirow, 2000; Taylor, 2008). By embedding learning in real-world farming contexts, fostering collective reflection, and exposing learners to the social and political dimensions of agriculture, farm schools contribute to the formation of change agents who operate within and beyond the boundaries of farming itself. This supports the conceptualization of pedagogical relevance as encompassing not only professional outcomes but also broader socio-ecological impacts.

From a methodological standpoint, the multiplicity of interacting factors examined in this study (ranging from pedagogical processes to professional trajectories and forms of social engagement) limits the possibility to apprehend causal relationships and thus calls for further longitudinal research to better capture long-term trajectories of professional integration and social engagement. Nevertheless, the convergence of quantitative indicators and qualitative testimonies strengthens confidence in the observed patterns and underscores the transformative potential of farmer-led agroecology education within the limits of the present study design.

6 Conclusion

This study contributes to the literature by conceptualizing and empirically assessing pedagogical relevance as a multidimensional construct encompassing experiential, professional, and transformative dimensions of learning. This study positions the farm schools of *Le Mouvement d'Action Paysanne* (MAP) as an emerging signature pedagogy in agroecology. While grounded in a Belgian case study, these findings provide insights into the potential broader relevance of this pedagogical model. Farm schools provide immersive, community-embedded, and reflexive learning environments that transmit both technical skills and peasant knowledge, fostering professional competencies and change agency. Learners emerge not only as farmers but also as advocates, role models, and community leaders. At the same time, challenges remain: pedagogical structuring must be strengthened, ethical boundaries between learning and labor must be clarified, and systemic barriers to professional integration require coordinated institutional and policy support.

This case study also offers several transferable insights for the design and evaluation of community-based agroecology education. Embedding learning in real contexts fosters deep

understanding and long-term commitment through experiential immersion. Balancing practice with theory through structured pedagogical design enhances reflection and cognitive integration. Ensuring ethical transparency—by clearly distinguishing between learning and labor—preserves pedagogical integrity and fairness. Supporting post-training transitions through mentorship, land access, and cooperative models is essential to sustain professional outcomes. Collectively, these lessons suggest that farm schools function not merely as training centers but as laboratories for transformation—spaces where knowledge, practice, and community converge to reimagine food systems for sustainability (Valley et al., 2018).

Farm schools also contribute to broader sustainability objectives, including sustainable production, inclusive education, and climate resilience, although systematic evaluation of these impacts remains limited. Future research could build on longitudinal and mixed-method approaches to better capture the multi-scalar and long-term effects of agroecological education. Future work should integrate longitudinal and mixed-method approaches aligned with SDG performance frameworks to better capture the multi-scalar impacts of agroecological education (e.g., Brundijs et al., 2021; Giangrande et al., 2019).

Conceptually, this study interprets the approach of *Le MAP* through two complementary perspectives: transformative learning theory, which emphasizes empowerment and critical reflection, and agroecological systems thinking, which situates learning within the ecological and social complexity of food systems. However, these frameworks only partially capture the political and economic forces that shape the viability and scalability of such educational models. Unequal power relations, land concentration, and market pressures continue to constrain the transformative potential of farmer-led education. Future research should therefore draw on political economy and actor-network theory to better understand how agroecological education interacts with structural constraints and opportunities within European food systems. By addressing these analytical and institutional challenges, farm schools can consolidate their role as transformative pedagogical spaces contributing to the broader reconfiguration of European food systems.

Overall, the findings demonstrate that farm schools, as experiential and community-based learning environments, play a significant role in fostering pedagogical relevance and supporting agroecological transitions.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Le Comité d'Éthique en Sciences Humaines et Sociales de l'Université de Liège. The studies were conducted in accordance with the

local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

MG: Conceptualization, Formal analysis, Investigation, Writing – original draft, Writing – review & editing. YB: Formal analysis, Writing – original draft, Writing – review & editing. KM: Conceptualization, Formal analysis, Supervision, Writing – original draft, Writing – review & editing.

Funding

The author(s) declared that financial support was not received for this work and/or its publication.

Acknowledgments

The authors warmly thank Johanne Scheepmans, whose generous assistance in providing access to *Le MAP* database. Gratitude is also extended to Vincent Dupuy, whose enthusiasm for the topic offered inspiration throughout the study. Sincere appreciation goes to all the farm-school trainers who welcomed the research team, shared their pedagogical approaches, and provided valuable field insights. Finally, heartfelt thanks are given to the former learners and the 2023 cohort participants who devoted time to completing the extensive survey and shared personal anecdotes that illuminated meaningful moments of their learning journeys. Their openness and reflections give this study its human depth.

Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fsufs.2026.1808583/full#supplementary-material>

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