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METHODS FOR INTER- AND TRANSDISCIPLINARY RESEARCH AND LEARNING BASED ON PAULO FREIRE

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KATRIN AITERWEGMAIR, GERALD FASCHINGEDER, CONCEPCIÓN MÉRIDA¹ Systematisation of Experiences as a Methodology of Peasant-Based Action Research

ABSTRACT This contribution gives insights into methodological procedures and epistemological results from a transdisciplinary research process with the peasants' organisation OCEZ-CNPA Chiapas in South Mexico. Its methodology was based on Paulo Freire's Popular Education (PE) and its related methodologies, Systematisation of Experiences (SoE) and Participatory Action Research (PAR). The central endeavour of the research was the collective reflection on peasants' agroecological learning experiences and, through a feedback loop, on the same praxis. The reflective practice consisted of action, research and training and thus, generated actionable, epistemological and methodological knowledge. These three interconnected dimensions of knowledge nourished the pedagogical and political praxis of the peasants' organisation, as well as the practice and theory of transdisciplinary and participatory research in the context of agroecology.

KEYWORDS Popular education, participatory action research, Systematisation of Experiences (SoE), agroecology, peasants' research

1. Introduction

The purpose of this article is to share methodological and epistemological reflections resulting from a transdisciplinary research project on agroecological learning, undertaken with a Southern Mexican peasants' organisation. Inspired by Paulo Freire's (2005) proposal of a liberating, problem-posing and situated process of learning, its methodology was based on *Systematisation of Experiences (SoE)* and *Participatory Action* *Research* (*PAR*). These methodological conceptions build on Freire's (2005: 72) assumption that knowledge cannot be transferred by teaching; it can only be created "through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other". The objective of Freire's (2005: 110) research-based *Popular Education (PE)* is to understand the world we live in, in order to transform it.

Half a century after Freire first published his revolutionary ideas on emancipatory education and transformative knowledge, they continue to be relevant, as we are currently facing a multiple global crisis that is grounded on a crisis of knowledge (Leff 2006). The hegemony of western academic thinking in knowledge production has caused an "epistemicide" (Sousa Santos 2010) by negating and destroying the diverse forms of knowledge of the peoples, that do not fit into the Cartesian model of rationalism (Mignolo 2005). However, these "epistemologies of the South" (Sousa Santos 2009) hold the potential for an exit from the crisis model of modernity (Escobar 2015). Thus, Transdisciplinary Studies, Participatory Action Research (PAR), as well as agroecology, call for a renewal in processes of production and validation of knowledge. Research that is committed to social change must be undertaken through a horizontal dialogue of academic and non-academic knowledges and subjects, which implies the crossing of methodological and epistemological boundaries (Vilsmaier et al. 2017).

Agroecology is a transdisciplinary and action-oriented science, as well as a practice and a movement (Wezel et al. 2009; Méndez et al. 2013; Gliessman 2018: 599). It was conceived from scientists like Hernández Xolocotzi (1985) and Gliessman (2013) by studying the indigenous agriculture of Mexican peasants. Thus, it should be further conceptualised by the peasants, since they are the experts of their reality and the "drivers of change" (Van der Ploeg 2011), as we argue in this article. Agroecology seeks to discover, systematise, analyse and strengthen the elements of the local identity inserted in a specific ethno-agro-ecosystem and, by that, to design development strategies in a participatory way in order to foster local resistance to the process of modernisation (Sevilla 2006: 211). This transdisciplinary science values different forms of knowledge and integrates "research, education, action and change that brings sustainability to all parts of the food system: ecological, economic, and social" (Gliessman 2018: 599). Therefore, the pedagogical and epistemological perspective of agroecology is in line with Freire's conception of education and knowledge, as discussed in this article and emphasised by a variety of authors (Ruiz-Rosado 2006; Altieri/Toledo 2011: 180; Méndez et al. 2013; Rosset/Martínez 2014) and practiced by many agroecological movements (see also the contribution from Hensler/Mercon in this issue).

In this paper, we share methodological and epistemological lessons from a specific experience with transdisciplinary and peasant-based research into agroecological learning. The project, titled *Systematisation of Agroecological Learning Experiences (SALE),* was undertaken from 2016 to 2018 in Chiapas, Mexico. Its mission was to learn from peasants' agroecological learning experiences in a dialogical relationship of academic social researchers from the Austrian Paulo Freire Institute, with those from the Mexican universities Chapingo and ECOSUR, and with peasantresearchers from the peasants' organisation OCEZ-CNPA Chiapas. The peasants with experiences in agroecological farming, learning and promoting are experts on their praxis and their reality, as well as being the actors of transformation. Thus, they were regarded as "co-investigators", as Freire (2005: 106) proposed. The task of the social researchers was to facilitate participatory and democratic structures and methodologies for enabling the co-generation of peasants' knowledge.

The central endeavour of this project was to organise a systematic way of collective reflection on the peasants' experiences in agroecology by developing and applying a participatory research methodology in order to create knowledge from praxis and for praxis. "Praxis" means for Freire (2005: 87ff.) – and thus, in this paper – collective action and reflection that innovates practice and theory. The project's epistemic objective was guided by the collectively defined question of "How are traditional and innovative agroecological knowledge and practices being (re-)constructed and disseminated?". In addition to the objective of generating "knowledge for understanding" and "knowledge for action" (Cornwall/Jewkes 1995: 1667), the process aimed at producing methodological knowledge on how to do research in a participatory and transdisciplinary way by acting and reflecting on our own investigative praxis.

The project title contains a reference to the central methodological conception on which it is based: The *Systematisation of Experiences (SoE)*. The *SoE* is a methodology of *Popular Education (PE)*, which concretises

Freire's emancipatory learning by means of a specific proposal of designing a process of systematic participatory and critical reflection on a collective praxis. This methodological framework was complemented with principles and methods taken from Participatory Action Research (PAR). The eclectic combination of these related transformative methodologies enhanced the creation of an open and process-oriented investigative context that enabled the re-introduction of research results into the research process in order to deepen the same process (Villasante 1994 cited by Jara 2012: 63). PAR, PE and SoE, as well as agroecology, integrate action, research and training in a balanced way. PAR, understood "as the way groups of people can organise the conditions under which they can learn from their own experiences and make this experience accessible to others" (McTaggart 1991), has a similar aspiration to that of SoE. The popular educator Oscar Jara (2006: 22; translated by the authors) defines SoE as a "critical interpretation of one or more experiences that [...] discovers the logic of the experienced process, the factors intervening in the process, how they relate, and why they related in this way." While the purpose of PAR is to investigate a specific problem, a question or a dimension of reality in a participatory way, the object of SoE is the collective reflection on an experienced situation or process (Jara 2012: 57). Since these methodologies have different foci, but are based on the same principles and goals, they can enrich and complement each other, as we affirmed in our research. A central common feature of these methodological conceptions is their embeddedness in the concrete and existential situation of the people, as they are considered to be epistemic and transformative subjects (Jara 2010). Freire (2005: 85) emphasises that the starting point of a liberating research action "must always be with men and women in the "here and now", which constitutes the situation within which they are submerged, from which they emerge, and in which they intervene." The importance of situating the research process in the reality and the historical and cultural identity of the subject is highlighted in our analysis, as we found it to be significant for transformative research on agroecological learning.

In the following pages, we share some reflections on both the methodological procedures and epistemological results of the transdisciplinary peasants-based research. In the subsequent section, the methodological framework of the *SALE* project is described, highlighting the transdisciplinary and international structure of the research collaboration, as well as the design and implementation of its methodology. After the methodological outline, an epistemological result from the peasants-based research on agroecology is highlighted, and its political and pedagogical significance for transformation is analysed in dialogue with Freire's conception. With this study we suggest that agroecology, as a situated and transformative knowledge, movement and praxis, cannot be taught. It can only be created by a respectful and loving dialogue in the sense of Freire, one situated in the particular territory, history and culture of the peasants.

2. The methodology of the *Systematisation of Agroecological Learning Experiences (SALE)* in Chiapas, Mexico

In the following pages, the context and methodological framework of the project *Systematisation of Agroecological Learning Experiences of farmers in Camagüey, Cuba and La Trinitaria, Chiapas, Mexico (SALE)* is summarised. Special attention is given to the research subject and its transdisciplinary collaboration structure, the holistic methodological framework, as well as to the implementation of the procedure *Systematisation of Experiences (SoE)*, which was adopted from Oscar Jara (2006) and adapted to our context and to the interests, needs and capacities of the peasants' research collective. Before that, we give a short introduction to the general setting and the participants of the research process.

The *SALE* project was coordinated by the Paulo Freire Institute and financed by the Commission for Development Research (Kommission für Entwicklungsforschung – KEF), both located in Austria. It was carried out from 2016 to 2018 by two local teams, one in Camagüey, Cuba and the other in La Trinitaria, Chiapas, Mexico. The transdisciplinary, international and intercultural research teams were composed of social researchers, peasants experienced in practising, learning and promoting agroecology, as well as leaders and coordinators of the peasant organisations. In the Mexican research group, investigators from the Autonomous University of Chapingo, a Master's student from the El Colegio de Frontera Sur (ECOSUR), and 17 peasants and three coordinators from the organisation OCEZ-CNPA (Organziación Campesina Emiliano Zapata – Coordinadora Nacional Plan de Ayala) Chiapas participated. The Cuban experience of peasants' popular education was an important inspiration and support, especially in the kick-off phase of the project, which was dedicated to the collective construction of the methodology. However, the contents discussed in this article are mainly drawn from the Mexican process, with the farmers' organisation OCEZ-CNPA in Chiapas. This is due to various reasons: first of all, to the pragmatic need to reduce complexity for this article; second, to the fact that two of the authors continue to accompany the educational praxis of the OCEZ-CNPA; and third, the stronger commitment of the participants from the OCEZ-CNPA with the research, which led to a wider outreach of the cycle of action and reflection.

Indeed, the engagement of the members of the OCEZ-CNPA Chiapas as peasant-researchers went deeper than initially expected. The "epistemological curiosity" (Freire 2008: 26; see also Hensler/Mercon in this issue) and the consequent high research motivation of the leaders of the OCEZ-CNPA were based on the sense of frustration that the agroecological training courses and discourses, which they have been promoting in the last decade, have not shown the desired outcome. Most of the members of the organisation continue to use agrochemicals and have not been "convinced" by the agroecological approach, as the leaders of the organisation admitted. Thus, they felt the urgent need for a reflection on their own pedagogical praxis. The objective of the OCEZ-CNPA met with the mission of the Paulo Freire Institute – namely of promoting popular education. Their common political-pedagogical principles set the ground for enabling a peasant-based form of research in a transdisciplinary team.

2.1 The transdisciplinary collaboration structure SoE

In the *SoE*, only those who have been involved in the inquired experience can be the researchers (Jara 2006). Therefore, the peasant-researchers were considered as the protagonists in the execution of the research, while the role of the academic researchers was focussed on the facilitation, coordination, organisation and documentation of the process. A crucial condition for a transdisciplinary research project is a successful team organisation and collaboration structure, which includes the collective agreement on the specific objectives and methodology of the research, and on the decisions on how, when and by whom it should be carried out.

The transdisciplinary principle was applied in all of the three interacting team levels: the local team of action research, the local facilitation teams, and the international team of coordination and research. The local team of action research was the extended group, predominantly consisting of peasants of the OCEZ CNPA with experiences in agroecological learning and promotion. The local facilitation team was the "core group", using the term of Hensler/Mercon in this issue, that organised, planned and facilitated the research, in which the extended local team of action research participated. The facilitation team was composed of two leaders from the educational area of the organisation, three peasants, and two academic researchers. This predominantly female team carried out the crucial tasks of execution, documentation, and the critical evaluation and interpretation of the research process. It collectively decided on the specific actions and methods to be implemented in order to respond to the emerging questions, challenges, and preliminary findings of the research in an ongoing process of action and reflection. The local facilitation team had a crucial interface position, since it communicated its decisions and analytic observations in a constant dialogue, both to the extended peasants' group (the local team of action research), as well as to the international team of coordination and research. The international coordination team was composed of researchers and national coordinators of the project, that had a consultative and steering function in the process.

2.2 The methodological framework

A methodological design entails methods, techniques and instruments in order to address the objectives, the subject and the object in a coherent way (Jara 2006: 227f.). The methodological conception of Popular Education (*PE*) and Participatory Action Research (*PAR*) goes beyond technical issues, as it essentially considers ethical and political attitudes, behaviours and values, such as empathy, solidarity and sharing (Chambers 1997: 105; Fals Borda 1999: 24). Therefore, the methodology includes monitoring and evaluation in order to critically reflect our methodological and ethical performance (Grundmann/Stahl 2002:17).

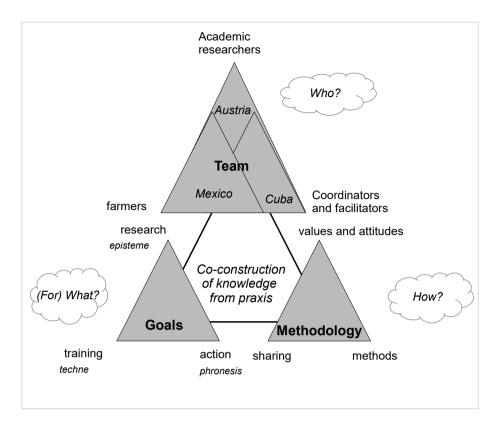


Figure 1: The conceptual triangle of *SALE Source: authors' own elaboration*

Based on these conceptions, the coordinating Austrian Paulo Freire Institute set the methodological ground. The diagram above (Figure I) illustrates the tri-dimensional methodological framework of *SALE*. It consists of three equally important components: goals (research, training and action); methodology (values and attitudes, sharing and methods); and, literally on the top, the transdisciplinary research subject, already presented in the former sub-sections. The cornerstones of the three triangles of subject, objectives and methodology are interwoven and designed in a holistic way as a methodological "road map". This flexible design allowed for the adaptation to the local conditions, political events, pedagogical opportunities and epistemological findings encountered 'on the road'. In that way, the methodological framework offered orientation, and at the same time granted openness for the collective specification of objectives, methods, actions and questions.

As the research addressed action, research and training, it generated forms of knowledge (in Aristotelian terms) in the same three dimensions: the research interest in understanding farmers' agroecological learning experiences (*episteme*) was complemented by methodological training (*techne*) in the sense of learning by doing, as well as actionable knowledge (*phronesis*) with which to improve our learning praxis. *Phronesis* means prudence, the practical knowledge of how to do the right thing in the right moment, which we experienced to be essential for the participatory action research process. Fals Borda (1999: 24; translated by the authors) adopts this Aristotelian concept of knowledge to highlight the necessary "serenity in participatory political processes, helping to find the just mean and accurate proportion for the aspirations".

2.3 The application of the Systematisation of Experiences (SoE)

While the triangular methodological framework gave a general orientation to the project's methodological logic, the Systematisation of Experiences (*SoE*), as was proposed by Oscar Jara (2006), specified our methodological route in accordance with that logic. He suggests five chronological steps for structuring the procedure of *SoE* in a coherent way. The following figure 2 illustrates the methodological outline of the *SALE* process. It was based on Jara's (2006: 89ff.) proposal, but adapted to the specific context of the OCEZ-CNPA and extended by a second loop of collective (auto-) critical reflection in order to respond to our aspiration of researching into our transdisciplinary and transformative performance.

The knowledge generation process was based on a dialectical cycle, which consists of a recursive back and forth movement between reflecting and acting on the research praxis. As depicted in the graph (Figure 2), *SALE* consisted of a "double loop process" (Argyris/Schön 1978) of reflecting on two moments of peasants' learning experiences: 1. the experiences of agroecological learning in the OCEZ-CNPA, and 2. the process of *SoE*. In the terminology of Donald Schön (1983), the first loop of reflective practice is

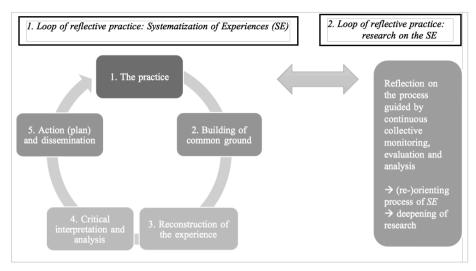


Figure 2: The methodological cycle of the *Systematisation of Experiences Source: adapted from the proposal of Jara (2006) and extended by a feedback loop for in-depth reflection*

called "reflection in action", while the second loop constitutes a "reflection on action". The latter, consisting of systematic monitoring, evaluation and analysis of our own process, deepened the understanding of our praxis of participatory research and, by that, re-oriented our praxis in the course of the project. This feedback loop enriched the analytical dimension and informed the process in order to continuously align it for the sake of generating transformative theory and practice. A crucial feature of doubleloop-learning is the (auto-)critical examination of the pre-set mental and epistemological models and consequent "theories-in-use" (Argyris/Schön 1974: 256), on which the praxis is built, as the following section intends to exemplify. However, before addressing the epistemological results of the process, the core methodological procedure of SALE, namely the Systematisation of Experiences (SoE), is outlined. The chronology follows the five stages, as proposed by Jara (2006) and depicted in the left cycle of Figure 2, but the specific terms and ways of implementation have been adapted to our particular process.

I. The starting point is prior to the *SoE*, as it refers to the collective experience to be systematised. This was, in our case, the agroecological

learning experiences of the peasants of the municipality of La Trinitaria, integrated in the OCEZ-CNPA Chiapas. Jara (2006: 96ff.) mentions the condition, that records of the experience are available, an aspect which was lacking in our case. Consequently, we deepened the research dimension by implementing a process of famers' field research in order to get information on the practical outcomes of the agroecological training courses promoted by the organisation (see 3rd stage).

2. As a second step, Jara (2006: 102) proposes the definition of initial questions regarding the object, the objectives and the axis, that limit the topic of systematisation. We implemented this proposal but integrated it into a broader process of 'building the common ground'. This addresses the collective preparation, mediation and construction of the project, including the specification and planning of the methodology as well as the building of the team and of communication structures.

3. This core phase of the collective reconstruction of the experiences was implemented in SALE by combining diverse participatory methods and techniques, carried out in workshops at the educational centre of the OCEZ-CNPA, as well as in the fields of the participating peasants. Responding to the research interest in the agricultural realities and practices, as well as to the lack of existing records, the facilitator team designed a methodology for a process of farmers' field research. It was composed of different methods of PE and PAR, including Participatory Rural Appraisal (Chambers 1994). At the visits to the farms of the peasant families that participated in SALE, we applied the method of participatory observation, based on an observation guide. While one part of the facilitation team documented the results and visualised them by mapping the farm, the other part deepened the research by means of a dialogue from peasant to peasant. The semi-structured interview was enhanced by a guide, and the result, the reconstructed learning path, was visualised by means of a flow chart. This on-farm research was complemented by workshops, applying diverse participatory methods and creative exercises adopted and partly adapted from PE, PAR as well as from the Theatre of the Oppressed (see the contribution of Raule in this issue). These targeted the facilitation of a dialogue on agroecology in consideration of the peasants' ways of learning, acting, feeling and being.

4. The phase of critical interpretation and analysis of the experience, according to Jara (2006: 117), addresses the crucial question, "Why did what happened, happen?" This implies synthesising and classifying the information, which was, in our case, facilitated by the following categories: 1. Agroecological learnings acquired and practiced; 2. Spaces, processes and ways of agroecological learning; 3. Motivations for and challenges in agroecological learning and practice; 4. The economic, social and ecological results of agroecological learning and practice. The information, structured in this way, was analysed by exposing it to critical questions, which focussed on achievements and challenges, as well as on significant moments and contradictions in the peasants' process of agroecological learning and practice. This (auto-)critical reflection on coherences and incoherences between objectives and practices of the organization, in contrast with the peasants' realities and epistemologies, deepened the understanding of the organisation's praxis in its historical situation. This critical self-reflection paved the way to the last, but not final, stage of the SoE.

5. The validity of the knowledge generated in the former stages is measured by its utility for informing and improving praxis. In the fifth phase of *SoE*, the most significant strengths, challenges and limitations as well as lessons learnt were selected and translated into (proposals for) action, in order to nourish the organisation's future praxis. Furthermore, in this concluding phase, the results were disseminated by creative ways of popular communication² as well as by academic publications.

2.4 People over plans

Concluding the summary of the methodological process of *SALE*, it should be emphasised that the outlined methodological steps of the *SoE*, proposed by Jara (2006), were neither strictly separated nor chronologically followed, as figure 2 in the former section may suggest; rather, they were intertwined and implemented according to the collective decisions and opportunities of transformative action. For example, we did not wait until the fifth stage to engage in action. Windows of opportunities for transformation, that were in line with the goals and preliminary findings of the project, were integrated into the research project. Following that logic, outcomes that differed from the initial plan were part of the plan, as we considered them as essential learning results for the transformative research praxis.

The flexibility and people-centred openness in our research process evoked that the transformative outcome went beyond the initially addressed object. As suggested by Jara (2006: 102), for the second methodological step we initially limited our systematisation object to the "learning processes in agroecology in the period of 2009–2016". However, through the deepening of our "thematic investigation" (Freire 2005: 107), we realized that the agroecological knowledge accumulated, which is inscribed in the peasants' historically grown agri-cultural identity, has a greater significance for the desired agroecological transformation than the knowledge taught in agroecological training courses during this last decade. In order to respond to this "generative theme" (ibid.), we needed to dig deeper into the past, and through that, we discovered the ontological bases of a peasants' epistemology. Introspective, creative, corporal and sensual methods, which we elaborated on the way, were able to recall collective memories on traditional agri-clture and consequently to reveal a way of being and of knowing very different from the western academic paradigm, as will be examined in the following section.

From this experience, we emphasise that a transformative methodology should guide the research process in a holistic way, but not over-determine it. A strict adherence to pre-set methods could diminish the opportunities for transformation, such as an overload of firewood suffocates a tiny flame. Social change cannot be 'planned'; the intended transformative incidence of a limited and time-framed project can only be fertile if the project is integrated in the ongoing socio-political process and the historic reality of the epistemic and political subject. The "transformative factor", as Oscar Jara (2010; translated by the authors) points out, "is not the Systematisation itself, but the people, who – as they are systematising – strengthen their capacity to promote transformative praxis."

Transformative research entails fostering innovative knowledge and the ways of producing and validating it. In order to think the formerly unthinkable we have to act and to think outside of the box of conventional methodologies and epistemologies. Political, social and ethical principles and attitudes have to overrule pre-set frameworks in order to enable the procedural and participatory creation of a transformative research praxis. Consequently, the popular educator and social researcher Alfredo Ghiso (2004: 15), who substantially contributed to the methodological and epistemological conception of *SoE*, advocates exchanging tight methodological frameworks for "investigative ecologies", where knowledge is constructed in a systematic, relational, interdependent, interactive and recursive dynamic. He advises us to "pass from rules, norms and manuals of the research canon to the grammar in which the subjects describe and express the logics to create, recreate, appropriate and socialize their knowledge" (Ghiso 2004:1). This understanding of methodology enhances the situating of the research in the reality of the subject that executes it, which is a crucial condition for generating transformative knowledge both by and for the people.

3. Re-constructing agroecology by recovering the peasants' agricultural roots

In SALE, the farmers expressed their experience of having mainly learnt about agroecology from academics, and thus they perceived agroecology as a technical and scientific innovation brought to them by the "educated outsiders". Many training sessions were about teaching the peasants agroecology by transferring to them discourses and certain methods and techniques of agroecological farming. In a personal interview, a peasant recalls the evolution of her conception of agroecology in the OCEZ-CNPA: "At first, they talked to us about food sovereignty. After the training courses started in 2000, we were talking about agroecology. We thought it would be different from our peasants' agriculture. But then we saw that instead of being something different, it is a way of recovering it" (Gómez-Nuñez et al. 2018; translated by the authors). The expression "they talked to us" reminds us of what Freire (2005: 134) characterises as "imposing words", and therefore represents a "manipulative cultural action". This, and other farmers' reflections, showed that agroecological education was partly reduced to a transfer of knowledge and techniques, far from the peasants' realities. Freire probably would have considered this way of teaching agroecology in a logic of "input-substitution" as an alienating "cultural invasion", as it emphasises "a focalized view of problems rather than on seeing them as dimensions of a totality" (Freire 2005: 142).

Even though the elements of vertical extension detected in the educational projects of the last decade may not have favoured a wider reaching agroecological transformation, still the peasant-researchers were surprised by the many little efforts that indeed have been implemented. When the facilitator team shared and analysed the systematised results of the field research in the farmers' research group, the peasants came to recognise that each of them had his/her strengths and key areas in practicing agroecology, depending on the farm's conditions and the family's priorities. The knowledge behind this practice was in part acquired by the activities and trainings offered by the OCEZ-CNPA, but mainly through peasant-to-peasant exchanges (see the contribution of Hensler/Mercon in this issue), within the family, or with comrades either from the community or from other regions (this latter was usually facilitated by the organisation).

In the course of the SALE process, some peasant-researchers revealed that although agroecology might be a new term created by scientists, in the end, it is very similar to their ancestral practice of farming: "They call it agroecology today, but finally it is what we as ever have been doing before". The emphasis on "before" was reiterated constantly by the peasants and thus indicated a "generative theme" (Freire 2005: 107). It emerged from the sorrow over their vanishing peasants' identity, which correlates with the changed agri-cultural system. With the help of creative methods, such as the 'time line' and introspective bio-memorial exercises, we deepened the analysis of their life experience on the change from peasants' traditional (agri-)culture to a modern (agri-)culture. That is how we came to identify the so-called 'green revolution', which invaded their region at the end of the 1980s, as an ontological rupture with the peasant's way of life. It was a turning point that transformed, along with the mode of production, the peasant's sense of existence. The way of practising agriculture changed from the indigenous agroecosystem called *milpa*, a diversified intercropping system (which indeed inspired the founding fathers of agroecology, such as Hernández Xolocotzi [1985] and Gliessman [2013]), to monocultures of corn. Before agrochemicals entered their fields, more hard manual work was required, which was done by collaborating families and communities, as the the middle-aged and elderly peasants explained, accompanied by feelings of nostalgia. Even if their plot was quite small, their families always had enough to eat in both quantity and quality, they remembered.

The collective work on the *milpa* was connected with cultural practices that cultivated knowledge, communality and the relation with the land and with god. The ceremonies and celebrations gave a specific rhythm to time and a certain meaning to life. The way of knowing of their grandparents was in a dialogue with Mother Earth and with their former and future generations. In this indigenous cosmovision, the land is sacred and in a reciprocal relationship with the human community. It only gives when the people give and show respect and veneration. The changed practices and beliefs induced by industrial agriculture have disrupted this relation. The recalled traditional agri-*culture* prior to the era of the 'green revolution' reveals a kind of "relational ontology" (Escobar 2015), understood as a way of being in interconnectivity with the world, which is very different from the capitalist logic of domination and exploitation. While the peasants' identity is grounded on intersubjectivity and communality, the modern food system has caused (agri-)cultural erosion and thus, a process of individualisation, privatisation and migration. These all-to-common phenomena in the Mexican countryside are causing the communities to disintegrate and obstructing the transgenerational transfer of traditional agri-cultural knowledge.

The peasants expressed their sorrow that a vast majority of the new generation would not see a future in the countryside nor attraction to a peasant's way of life; one reason for this is the economic and political circumstances, but the other, less visible cause is of a cultural, ideological and ontological nature, as we analysed. We spotted the root of the problem in the phenomenon of a "cultural conquest", as Freire (2005: 135) would say, which leads to "the cultural inauthenticity of those who are invaded; they begin to respond to the values, the standards, and the goals of the invaders". This "cultural invasion" (Freire 2005: 180) is executed by a "colonization of the minds", as a leader of the OCEZ-CNPA put it. Another "organic intellectual" (Gramsci 1975) from the peasants' organisation, explained this mechanism as follows: "First, they empty us, saying that our traditions and cultures are futile, and then they fill it with something different. [...] It converts us to poor-rich, we think like the rich. There is a permanent intentional dispossession going on." This analysis correlates with the one of Freire (2005: 158), when he says that "this invasion is especially terrible because it is not carried out by the dominant elite as such", but by the oppressed as they are "housing the oppressor". Most of the Mexican peasants show this "divided" (Freire 2005: 48) identity, for example when they articulate the desire that their children could go to school in order to 'become someone'. Consequently, being peasants is perceived as 'not to be', so they are striving to be like the oppressor. For the oppressor, however, "to be is to have" (Fromm 1966 cited by Freire 2005: 58ff.). The aspired farmer's identity is consequently the capitalist "farmerentrepreneur" (Van der Ploeg 2008), whose identity is defined by having. This capital-intensive way of farming is beyond the peasants' possibilities and thus they decide to migrate to "the North", which accelerates the cycle of abandonment of their territories and of their agri-culture.

By means of this collective analysis we made a step towards dismantling the narrative of modernity as a strategy to attract the oppressed to the oppressors' system through a process of internal colonisation. Bringing this "colonial mentality" (Fanon 2009) to awareness motivated the participants to strengthen their efforts to engage in their own agroecological practice, education and research. The encouraging experience of the peasants' research enabled them to combat the common self-oppressing belief that they could not be good agroecological promoters or educators, because they lacked school-learnt skills, such as reading, writing or techniques of presentation. By experiencing and reflecting on our peasant-led research praxis, we called into question the formal education system, from which the peasants are being excluded, as an instrument of re-producing social difference. We realised that academic schooling does not necessarily lead to possessing more knowledge or to being a better researcher; but it does create the assumption that those who passed through this socioeconomic filter know more than others, and consequently it makes those without formal education believe that they do not know. Through their own research praxis in SALE, the peasants became aware that they do know a lot, even though, or perhaps because, they did not learn it in the formal education system; they learnt from their land, from their family and by participating in the political struggle of the OCEZ-CNPA, which is 'a school', as one peasant pointed out.

The direct exchange from peasant to peasant did not only generate knowledge, but also led to the empowering acknowledgment of the achievements and challenges of one's own and of one's companions, which Freire (2005) considers as an essential pre-condition for the collective construction of knowledge. This (self-)recognition motivated many participants to continue the challenge of improving their practice and understanding of agroecology and to strengthen their efforts in sharing their experience and knowledge with others. As a peasant-researcher put it in an evaluation workshop: "Every [peasants'] exchange motivated me to engage in new challenges."

We experienced the peasants' recognition of their own capacities and knowledge as a crucial step in overcoming the "self-depreciation", which Freire (2005: 63) declares as a central "characteristic of oppression". As a consequence, we could evidence from *SALE* that the more the learning is based on the knowledge, capacities and culture of the peasants, the more it enables them to recognise themselves not only as learners, but also as experts of practice and therefore as teachers and as "historical subjects" (Freire 2005: 160) with transformative agency. The collective research strengthened the trust in the organisation and led to new hope and aspirations for engaging in a self-determined process of teaching and learning the principles of agroecology. "The challenge is to support ourselves as a group, without the need of a scientist", concluded a peasant-researcher in the final evaluation of *SALE*.

We conclude from this analysis that agroecology must be created with the peasants through a decolonising pedagogy, in order to reclaim and recreate their ontologies and epistemologies, that can teach us a deep understanding of agroecology. However, it should also be pointed out that the recognition of peasants as knowing and acting subjects is not the finishing line. It is only the preliminary condition for making a horizontal and respectful transdisciplinary dialogue between different knowledges possible, on which agroecology is essentially built (Rosset/Martínez 2014).

4. Final reflections

As a conclusion from these reflections, we suggest that agroecology, being a situated and transformative knowledge and praxis, can only be created through learning "with the people, about the people's world", in the sense of Freire (2005: 180). The significance of Freire's (2005: 106) central argument, that an emancipatory learning process must be "situated" in the particular "human-world-relationship", seems to be especially apposite regarding the topic of agroecology. We saw that the historic emancipatory struggle of the peasants and the defence of their land from an exploitative system are connected and in coherence with the principles of agroecology. By recognising and recovering their agri-cultural identity and history, the peasants revealed their own understanding of agroecology, one that is based on a relational ontology very different from the destructive and "necrophilic" (Fromm 1966 cited by Freire 2005: 59ff.) one of modernity. The peasant-researchers demonstrated that epistemic subjects, who have been excluded from the hegemonic system of knowledge generation, can contribute decisively to the necessary task of innovating knowledge, epistemologies and even paradigms for a transformation towards sustainability.

Reflecting the methodological pathway and epistemological results of *SALE* with regards to the aim of transformation, we highlight openness and flexibility, as well as trust in the collective process, as crucial factors for enabling a *PAR*. The pathway was created in a step-by-step process of collective action and reflection, led by open ears and hearts paying attention to the stories and feelings the peasants expressed, not only by using words but also forms of creative and artistic expression. We experienced transformative learning as a sensual, aesthetic and relational praxis that cultivates affectivity, empathy and solidarity among the people (Fals Borda 1999) and with the territory. We consequently re-affirm Fals Borda (1999: 17), when he states that *PAR* is not a methodology in a strict sense; rather, it is a "life philosophy" which "would convert its practitioners into 'thinking-feeling persons'".

Transformation results from a critical reflection on our world and on our way of thinking, feeling, acting, and being in relation to it. The transformational praxis is located at the "frontier which separates being from being more", as Freire (citing Pinto 1960 in 2005: 99) points out. This ontological essence of a humanising and decolonial pedagogy was a living praxis in our research. We registered the fact that the generation of transformative knowledge requires first of all the re-generation of a negated knowledge that underlies oppressed identities. As the peasant-researchers appropriated agroecology as their "peasants' agroecological agri-culture", they also re-signified their ways of knowing, acting, feeling and being. By reconstructing their history and reclaiming their agri-cultural identity, they left "behind the status of objects to assume the status of historical Subjects", as Freire (2005: 160) would say. This recalling of the collective memory of the peasant's way of life demonstrated a conception of agroe-cology that is more than a mode of production; rather, it is a way of being in the world as being with the world.

These results comprehend knowledge in the three dimensions addressed by the research: the epistemic, methodological and actionoriented one. The peasants' deep-rooted notions on their land and their agri-cultural praxis can enrich epistemological and pedagogical conceptions of agroecology and, due to its ontological foundation, can even be understood as a counter-paradigm to capitalist modernity. Furthermore, the reconstruction of the peasants' own history could sustain a re-orientation of the OCEZ-CNPA's pedagogical and socio-political praxis and even a re-signification of the organization's identity, linked with a re-orientation of its political strategies. We realised that the future is created by critically analysing the present situation, which means to recall memories from the past. In an evaluation meeting, a leader of the OCEZ-CNPA pointed out: "Sometimes you need to stop and look back in order to view the path ahead. (...) It [SALE] helped us to make our steps more assertive". Consequently, we dare to say that the knowledge generated in this process "has converted into an active instrument of critique [...], as it turned from 'understanding what is happening' to directing history into 'what should happen', according to the interests of the people", as Jara (s.a.: 9; translated by the authors) described the essence of the Systematisation of Experiences.

I The authors present contents that were collectively created by a transdisciplinary research team with 25 members. Therefore, the authorship of this article is one that represents the following researchers from the peasants' organisation OCEZ-CNPA Chiapas: María del Carmen Mérida, Emiliano Mérida, Dora Isabel López, Nely Guadalupe Maldonado, Zoraida Archib, Minerva Espinosa, Fernando López, Hortensia López, Cruz López, Ingrid Guadalupe López, Isabel López, Roberto Alvarado, Paola Vázquez, Argelio Vázquez, Guadalupe Pérez, Teresa del Carmen Pérez, Ovel Hernández, and Germán Hernández y Rodolfo Hernández. The participating academic researchers were Emanuel Gómez (anthropologist, professor and researcher for Rural Development at the University of Chapingo), Julissa Gómez (Master's graduate at the University of Chapingo) and Erika Nájera (Master's graduate at the Colegio de la Frontera Sur).

2 A short video, produced in a participatory way, gives an audiovisual insight into the research processes of *SALE*: https://youtu.be/BagWAL9rt5M. It concludes with impressions from a drama performance, which the peasant-researchers chose as a medium to communicate the central results of the research to their companions and allies.

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ABSTRACT Dieser Beitrag bietet Einblicke in methodologische Verfahren und epistemologische Ergebnisse eines transdisziplinären Forschungsprozesses mit der BäuerInnenorganisation OCEZ-CNPA Chiapas im südlichen Mexiko. Die Methodologie basierte auf Paulo Freires Educación Popular, sowie der Systematisierung von Erfahrungen und der Partizipativen Aktionsforschung. Zentrales Anliegen der Forschung war die kollektive Reflexion der agrarökologischen Lernerfahrungen der BäuerInnen sowie, mittels eines feedback loops, des selben Forschungprozesses. Die reflexive Praxis bestand aus Aktion, Forschung und Bildung und generierte demnach Handlungswissen, Verständniswissen und methodologisches Wissen. Diese drei miteinander verbundenen Wissensdimensionen nährten sowohl die polit-pädagogische Praxis der BäuerInnenorganisation als auch Praxis und Theorie transdisziplinärer und partizipativer Forschung im agrarökologischen Kontext. Katrin Aiterwegmair katrin.kusy@estudianteposgrado.ecosur.mx

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