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Working Paper 2

What does it make value chains a community of practice?

COMPETENCE DISPLAY AND MODES OF PARTICIPATION

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[Abstract]

Drawing on my PhD project "Global value chains and social learning. Developing producer capabilities in smallholder farmers", this paper discusses the definition and display of competence of smallholder farmers in SFP/PO. The argument is farmers in San Francisco Produce/ Peninsula Organics value chain contains a social learning system where smallholder farmers learn organic agriculture as practitioners. The education process is characterised by interactions between novice and competent farmers. These interactions contain idiosyncratic elements that together, form the social learning in San Francisco Produce/Peninsula Organics. Thus, farmers display competence in their learning of organic agricultural practices in accordance to what they themselves define is proper for the value chain.

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Introduction

Participating in Global Value Chains requires learning new technological capabilities. Technological Capabilities are the skills firms, specifically workers, need to carry out an activity so that they can produce or deliver a service and compete in the market (Lall 1992; 1993) Gereffi et al. (2005), point out that the learning required to effectively develop the technological capability to engage in certain value chains may be difficult, time consuming, and effectively impossible for some firms. However, Morrison et al. (2008) argue that a Technological Capability approach has a lot to teach us in terms of the micro-level processes of learning, capability building, and innovation. Specifically, a Technological Capability approach draws attention to some key features of knowledge, such as codifiability and complexity of transactions. Concretely, Morrison et al (2008) argues that Global Value Chains assume away the need for idiosyncratic and firm-specific learning strategies.

I argue that the San Francisco Produce/Peninsula Organics (SFP/PO) Global Value Chain, contains a social learning system where smallholder farmers learn organic agriculture as practitioners. The education process is characterised by interactions between novice and competent farmers. These interactions contain idiosyncratic elements that together, form the social learning in San Francisco Produce/Peninsula Organics. In this value chain, the

idiosyncratic elements are present smallholder farmers. Wenger (2010) argues that engagement in social contexts involves a dual process of meaning making. On the one hand, we engage directly in activities, conversations, reflections, and other forms of personal participation in social life. On the other, we produce physical and conceptual artefacts – words, tools, concepts, methods, stories, documents, links to resources, and other forms of reification – that reflect our shared experience and around which we organise our participation. Meaningful learning in social contexts requires both participation and reification to become interplay. As Wenger (2000) argued that knowing is an interplay between displaying competence and personal experience. In SFP/PO farmers show their knowing in three levels. In this community of farmers in SFP/PO, smallholder farmers have formed their own understanding of what constitutes their community, and therefore what elements of the community farmers should show to belong to it. Rather than behaving individually, farmers behave collectively as community of farmers.

For this analysis, I use the Community of Practice framework by Wenger (1998;2000;2014;2015) to examine the definition and display of competence of smallholder farmers in SFP/PO. The analytical elements of Community of Practice allow me to frame and explain how farmers, as practitioners, define competence within the community, that is the idiosyncratic elements of the social learning system according to the activities that they undertake. These analytical elements also allow to examine how farmers display competence at three distinctive levels of participation that prove that they are part of the community. This is important given that farmers must display competence in their learning of organic agricultural practices in accordance to what they themselves define is proper for the value chain.

In this chapter, I analyse how smallholder farmers in SFP/PO display competences. This is an essential component of how farmers engage in the community to gradually display their competences and thus develop their production capabilities. Blackmore (2007) states that, key to this gradual development of production capabilities are Wenger's distinctions

between peripherality and marginality. Identities of participation and non-participation help to ascertain where there might be opportunities and constraints regarding learning. This means that what farmers have had as understanding of what agriculture was, in accordance to their context, changes along with their own identity. Consequently, by participating in this value chain and interacting with competent farmers, novice farmers find opportunities for learning as they are exposed to new understanding. As has been argued by other authors, members in Communities of Practice interact with one another and share experiences and understandings, the meaning of what they do in the community (John 2005).

Lave and Wenger (1991)Lave and Wenger (1991) define Communities of Practice as a set of relations among persons, activity, and world. Wenger (2000) argues that in Communities of Practice, knowing something is a matter of displaying competence. The competence is socially defined. This means that people collectively develop vocabulary, concepts, tools and ways of doing things (Ibid, p. 225). Ergo, people know things because they engage in a community. Concretely, knowing something involves displaying competence, that is to prove they can use the vocabulary, concepts, tools and understanding the way they do things in a determined way which has been socially defined. In this regard, Wenger (1998) identifies three elements which, combined, define competence in a CoP. The first element is Joint Enterprise, the collective and shared understanding among members of what the undertaking of the community is all about. The second element, Mutual Engagement, which corresponds to the creation and following of norms and relationships among members of the community. Following the norms means being a trustful partner in the community. And, the third element, Shared Repertoire, corresponds to the use of communal resources such as language, routines, tools and stories, which are available for members of the communities.

Through these three elements, the community defines what competence is in their own context. Therefore, the analysis in this paper addresses the research question *How do smallholder farmers display competence in the Community of farmers of San Francisco Produce/Peninsula Organics?* To answer the stated research question, I divide the analysis into

two parts. First, I discuss what farmers define as competence in the SFP/PO community. In the second part, I discuss how farmers display competence and demonstrate that it is associated to the level of participation of the farmers in the community. The analysis in this paper links to the aim of this research by contributing to the understanding of the development of production capabilities of participating farmers in the Global Value Chains.

In analysing the way farmers define competence in SFP/PO, first, I employ the three elements proposed by Wenger (1998) to examine competence as an organic farmer. I consider farmers as members of the Global Value Chains, and being a competent organic farmer is one part being a member of this chain. Firstly, I argue that the Joint Enterprise of the community is grounded on what the farmers understand as organic farming, and what it means to be an organic farmer. Secondly, I argue that the Mutuality of the community means the norms within it are based on norms of organic farming, as well as norms of mutual help that make farmers reliable in the community. I argue that within the community the Shared Repertoire is given by a group of shared stories, languages and tools that farmers have access to, to reinforce their collective and individual identity and to implement the organic practices. Finally, I argue that this definition of competence has been collectively constructed over time as the community is consolidated.

In the second part of the analysis, I examine how farmers display competence in SFP/PO by looking at three distinct levels of participation which are directly linked with display of competence. The first level of participation corresponds to the construction of an identity of the farmers as organic farmers by understanding the enterprise of SFP/PO and through this identity they show they are part of the community. I argue that this identify construction corresponds to a participation at the periphery of the community. The second level of participation is medium participation which corresponds to the following of the norms that farmers of the community have established to do things together. The third level of participation corresponds to full participation of farmers in the community, where they understand the production activities and can contribute to the repertoire of new technical

solutions for the further improvement of farmers' practices. In this way, the farmers display the higher level of competency in the community. Finally, I present a summary of this paper and answer the research question.

Defining competence in SFP/PO

Wenger (2000) views Communities of Practice (CoP) as containers of competences which are socially defined. Gaining individual competencies is inseparable from collectively gaining competencies. In this way, members of a CoP collectively define what constitutes competence. Moschitz et al. (2015, in Sumane et al. 2016) argue that in order to reach different stakeholders' mutual understanding and enhance the transition towards sustainable agriculture, the interactions between and within these groups need to be facilitated; they need to be able to adapt to changing contexts. Thus, I argue that, in the case of SFP/PO, farmers collectively define what makes a farmer in the community based on the shared and common understanding of the philosophy of SFP/PO, and the principles of organic agriculture. This collective definition of competence binds famers together and holds each other accountable. Hereafter, I analyse and explain how farmers collectively defined competence by using the categories of a) Joint Enterprise b) Mutuality, and c) Shared Repertoire. Being a competent organic farmer as a member of the organisation is to internalise and follow the philosophy of SFP/PO and show an understanding of organic agriculture principles.

Joint Enterprise

According to Wenger (2000) Joint Enterprise is the common and shared understanding of the undertaking of the community. It includes 'understanding what matters' and 'what the enterprise of the community is' (Wenger 2010; 180). Lave and Wenger (1991), argued that Communities of Practice are groups of people who share a common pursuit, activity or concern. In this regard, the Joint Enterprise of San Francisco Produce/Peninsula Organics consists of developing an understanding around two elements: i) its philosophy and ii) the

principle of organic farming. Ingram (2008) argue that it is important to develop an understanding of the dominant assumption, practices, and rules, and the ability to tie these new practices and values together. In the case of SFP/PO, understanding this philosophy and principles indicates a farmer is truly behaving as a member of the value chain. Farmers collectively define what constitutes a good farmer in SFP/PO by developing a common and shared understanding of the philosophy and the organic farming principles.

The philosophy of SFP/PO is to be a socially purposed business operation in which smallholder farmers that live under marginalised areas participate in an organic supply chain that enables farmers to develop production capabilities. SFP/PO, as an organisation, makes the claim that it enables farmers to develop production skills to grow organic produce that are sold in the US Market. With these sales, smallholder farmers generate a monthly income which directly benefits their living conditions. In developing a shared understanding of SFP/PO, the Joint Enterprise is defined around its philosophy, an idea of a family of farmers which tacitly emerges among a group of farmers. Farmers' accounts suggest that from the beginning of their participation across Baja Peninsula, the sense of family is regarded as important and it's generally present in all geographic locations. For example, one farmer in the north of Baja Peninsula said:

> *"The philosophy of SFP/PO is to improve the living conditions of farmers and help them [farmers] in solving their production issues for their wellbeing". [SFP01DRF].*

In the far southern tip, another farmer said:

> *"We were very lucky to have been invited by a visionary man to participate in a production system to export produce in international markets" [SFPS04PMB].*

Both quotes show that in the Mexican context, farmers understand family as a group of people that are bound together to provide security and help when needed. For example, in carrying out their farming activities, farmers' views are focused with the perceived support,

security and confidence that only family can provide, and, it is associated with carrying on with their farming activities. Specifically, farmers embrace the philosophy because its purpose is to improve the conditions of scarcity they have experienced and places wellbeing as the main target. Consequently, farmers' perception of their participation is reinforced because there is a created expectation of improvement. When this expectation is shared by a large group of farmers, there is confidence that their efforts will attain improvements in their living conditions.

To better illustrate farmers' perception of the philosophy of San Francisco Produce/Peninsula Organics, their narratives express the difference between their situations as part of SFP/PO compared to the situation of other farmers who belong to other supply chains. For example, one interview felt particularly strongly about SFP/PO:

> *"it is not just trading with them like it is the case of many farmers, where brokers ask you to produce something and it's up to you if can do it." [SFPS04PR].*

A critical element perceived by the farmers is the provision of advice and financial support. As farmers receive technical advice from other farmers and financial support from the Global Buyer (GB), the idea of family is regarded as a binding element towards SFP/PO. This view is supported by the perception of farmers in Baja Peninsula Mexico, that agriculture in Mexico in general, and Baja Peninsula in particular, has not received enough support from Government in terms of technical assistance nor financial resources. Furthermore, all the farmers interviewed felt that despite the presence of government programmes to support smallholder farmers, the chances they could get the support was small.

As well as the idea of a family of farmers experienced in similar ways throughout the value chain, there are farmers that associate it with the business idea. One farmer, for example, clearly stated his position as part of the family of farmers from the perspective that his operation was also for conducting business:

> *"I know the founders of SFP/PO and what they do for farmers and the communities. Of course, at the end I do this also for business but also because I believe in the conservation of natural resources"* [SFPS07JC]

This quote illustrates the consciousness of farmers with regards to increasing the income of smallholders. This is consistent with the view of the founder of SFP/PO in which he states that *"every farmer should make hundred thousand dollars a year in profits* [SFPS04IT01]*"*. To summarise, the idea of a family of farmers combines the commitment of supporting farmers with technical advice and using business for profit to increase the income of smallholder farmers.

The shared idea of a family of farmers is not free from disagreements. However, such disagreements do not undermine the idea of a family of farmers and partnership. Farmers are motived to find strategies, especially to prevent production losses. During the growing season, quality requirements vary from strict to light. The critical point is when demand drops, this results in the dumping of produce either in the US or in Mexico. A farmer put it this way: "*I'm the one who loses"* [SFPS05PJC], in the case of dumping produce by customers in the US. This situation arises when demand drops which the quality of produce tends to be very high and thus its criteria is strict. Also, when dumping produce in Mexico[1], because of low demand, farmers argue that processing the produce as tomato paste or creating a lower line of specialty produce could work as an alternative to losing the crop. For example, when interviewed, farmers have unanimously held the view that producing by-products, such as tomato paste or other lines of produce which might potentially be accepted in the American market, is a good thing. These two proposals have been discussed with the global buyer. However, at the time of the interviews neither project had started.

Risk sharing was another element of the family of farmers. It is a general perception that despite the losses, participating farmers and the Global Buyer have shared losses and risks.

[1] Dumping produce in Mexico means participating farmers either leave produce in the field or use it to feed their cows on their farm. It does not mean other farmers affect the price that SFP/PO farmers get.

Farmers regard risk sharing as part of the idea of family of farmers due to the co-responsibility taken by every participating farmer, as opposed to the situation of other farmers who participate either in the local market or in other value chains, where the risk is on them. For example, one farmer said:

> *"Last year a truck full of produce had an accident on its way to the USA, the broker [global buyer] absorbed 50% of the losses, whereas the rest was absorbed by all of us [all farmers that shipped produce in that truck]" [SFPS03CM01]*

As they are part of an organic crop value chain, farmers externalised the idea as philosophy of SFP/PO and compare their situation with that of other farmer that participates in different value chains, where the risk is fully absorbed by the farmer resulting in economic loses for them and putting at risk their financial situation and their participation in the market.

A common view is the use of different range of agricultural inputs that enables the creation of value for produce. The area co-ordinator of southern Baja Peninsula said: *"as partners, if one of the farmers wants to use a new input I have to know first, run all the procedures to make sure it is safe before we all can use it*". In this view, farmers collaborate to ensure the correct use of organic inputs, so that organic standards are consistent. Maintaining these standards ensures, farmers preserve their competitiveness in the organic retail markets in the USA. Furthermore, farmers carry out agricultural activities in a collective effort to promote the conservation of natural in a way that inputs help sustain life in the soil and as result, all farmers together understand the philosophy, the enterprise of SFP/PO.

In line with this philosophy, farmers establish a link between organic farming principles and the philosophy of SFP/PO of helping farmers. This view surfaces mainly with the case farmers make about working with a group of organic farmers. One farmer said: *"I believe that the plan of organic agriculture is to help families."* [SFPS05CM]. There is a common interest in that all farmers improve their economic and social stability by increasing their yields. For example, in farmers' understanding of organic farming principles, a common view is that

organic standards are to be regarded as full conscious act, not an obligation. One farmer put it this way:

> *"The organic thing [organic farming] is a daily job, about learning how the plant grows, understanding the plant's behaviour. If you don't dedicate your time and yourself to understanding the behaviour of plants, you hardly be able to get to good part" [SFPS08BS]*

The quote illustrates dedication and observation as two elements that show consciousness of the principles of organic agriculture. Participating farmers in Southern Baja Peninsula Mexico were previously conventional farmers, *getting to good port* means understanding how to manage the crops in terms of fertilisation and pest control. For example, the *organic thing* sheds light on importance of embracing into practices, as learning is required. Learning is externalised as full comprehension, an understanding the purposes of every practice and the effects on the crops such as expected yields or their improvement. Furthermore, learning requires a constant need for observation to make the case for contrasting both farming systems, organic and conventional, where farmers state the importance of co-existing with the environment, that is, the interaction of the crops with insects and make efforts towards strengthening the soil. Therefore, observation of the crops and their interaction with their environment necessarily requires observation for learning, which is concretely evident when showing a full understanding of the practices, rather than mere compliance to them.

Food safety was another element of that makes a good organic member of SFP/PO. Farmers argued that before joining SFP/PO, food safety was not part of their operation nor practices. One farmer said: *"how could I tell you? All this was something we weren't accustomed to"* [SFPS02PAN]. One farmer highlighted that *"the fields must have some kind of fencing to prevent contamination and access from animals that could threaten the quality of crops"* [SFPS02IVG]. Previously, crops were grown without fencing, and harvested without gloves or hand washing. In contrast, now the farmers in SFP/PO are implementing strategies to prevent animals, people, chemical inputs and machinery from entering their fields.

In summary, Joint Enterprise in SFP/PO is matter of understanding, experiencing and carrying out efforts towards finding strategies for reducing losses in product, creating alternative products, and sharing risks among participating farmers. Joint Enterprise also means understanding and carrying out what is perceived as good organic farming, where farmers acknowledge the obligations of organic and food safety standards. Showing conviction and consciousness of the implications of such standards is considered essential for farmers that are a hundred percent organic. For farmers of their experience the tacit idea of a family of farmers, being part of that family works as a motivation that permeates participating farmers across Baja Peninsula, to provide support and help. Participating farmers understand that SFP/PO is a social purpose operation which they are active members of, and which is guided by elements that constitute being a good organic farmer.

Mutual Engagement

Across southern Baja Peninsula, farmers in SFP/PO interact based on dynamics of team work. According to Wenger (2000, 2010), mutual engagement means to establish norms and relationships among practitioners. It means that such norms and relationships enable and allow productive engagement with others in the community. Lowitt et al. (2015) argue that a Community of Practice can give rise to the necessary interpersonal interactions, by developing norms and values (p.365) Farmers' interactions are based on the norms focused on two activities: i) the requirements for organic and food safety certification and ii) relationships focused on finding technical solutions to improve farmers' production activities. These two activities are binding elements of their interactions, where farmers negotiate understanding with a sense of helping by following a set of unwritten norms.

In following the norms regarding requirements for certifications, understanding the norm requires a degree of discipline due to the record keeping that will be verified as part of the organic certification assessment. As one farmer put it: *"organic agriculture is a more accurate process than conventional agriculture which doesn't require so much care"*. [SFPS02IV]. This quote

shows that farmers have defined a way of managing their crops, emphasising processes of using organic inputs, and keeping records of all inputs they use. Farmers follow norms for organic certification to know the type of crops and quantities they ought to grow, making visible the type of inputs, seeds, and actions they have taken to manage the crop or control any pest.

A common view is that farmers explained that record keeping helped achieve a more "organised" way of practising agriculture. As one farmer said: *"I am careful to have my notebooks in the field and note what seeds or inputs I used that are authorised by the agency"* [SFPS02IVG]. Record keeping [organised agriculture] makes visible the processes underpinning crop production. As the quote illustrates, farmers know that record keeping allows them to answer questions for a third-party audit, i.e. every application of fertilisers, recommendations from the area co-ordinator or even incidents such as animals in the field or sick harvesting staff, is recorded. This is consistent with the observations made when farmers showed how they kept records and the type of information stored.

Food safety certification also implies following the norms, which leads to a systematic and organised way of carrying out production activities. Farmers share the view that both certifications, organic and food safety, are linked and have the same aim, to make produce meet safety and organic quality standards. As one farmer put it:

> *"For example, food safety certification asks you to check your entire operation and identify risks points that could impact your product. You then need to implement strategies of what you would do if you had that problem". [SFPS05PJC]*

Farmers map out every risk point of their operation when picking and growing and take steps to reduce the probability of their produce being compromised with any type of contamination. One common risk farmers identified was the use and position of toilets (including portable toilets).

Farmers' understanding of norms can be seen when they argued that the risk comes from toilets that have chemicals, and should there be a leak, it could compromise the entire production. One farmer said:" if *you do not identify the risks yourself, you are not following the rule [unwritten norm]"* [SFPS05COOR]. Farmers are collectively responsible of providing assurance that their operations are safe. This co-responsibility allows farmers to interact with actions that will ensure that the operation of SFP/PO as GVC is safe and productive.

For example, farmers state the first thing they do when visit other farmers' fields is to look at crops, hoping to find insects. If there are no insects it might indicate that something is wrong. A lack of insects in the field suggests farmers either use chemical inputs, or an inadequate execution of organic practices. In either case, a lack of insects provides an incentive to search around the field, hoping not to find prohibited chemicals. As a result, farmers carry out their production activities in a systematic way, providing visibility for themselves, and creating certainty that in their farming operation organic principles are proved to be followed. The visits are constant, which indicate the existence of scheduled visits for every farmer, consequently promoting constructive feedback on the practices and enhancing the engagement between novice and competent farmers.

Finding technical solutions to improve farmers' production activities are also norms that guide interactions among farmers. For example, one farmer said: "*We try to teach and show farmers new tools"*. Farmers interact with each other to find solutions to better manage diseases in crops, improve soil structure, reduce compaction and manage nutrients. For example, another farmer said: *"I love to work with other farmers [from SFP/PO] to solve problems* [SFPS01DRF]. Within the SFP/PO GVC, farmers have developed different production techniques and improved those they have learned from other farmers.

Farmers establish relationships of mutuality where they interact as a team, based around norms focused on meeting the requirements for organic and food safety certifications, and finding technical solutions to improve farmers' production activities. In following these

norms, farmers understand and internalise the norms of organic and food safety certifications as well as finding technical solutions. Norms help farmers carry out a more organised agriculture and show co-responsibility. Norms lead to a systematic operation which ensure a safe operation of the entire value chain.

Shared Repertoire

In SFP/PO novice farmers and competent farmers can benefit from a pool of resources that came about because of farmers' interactions, experiences and projects carried out throughout thirty years of operation. As a GVC. Wenger (2000) argues that CoP produce a Shared Repertoire of communal resources, such as language, concepts, tools and that reflect the views of the Community of Practice. In addition, Lowitt et al. (2015), argue that CoP help maintain a shared language and body of knowledge among individuals, and contribute to the formation of a community memory that can persist after original members have left. In SFP/PO, the pool of resources consists of knowledge on agricultural techniques, language, and spaces for discussions. Knowledge is the first element from the pool of resources. By participating in SFP/PO farmers have the possibility to interact with experienced farmers in organic practices, as well as technicians who specialise in activities that farmers need most to learn e.g. entomology. In addition to technicians, competent farmers will pass on their experience on how to carry out organic farming to enable the development of production skills.

One common view among farmers is that pest and plant diseases are two of their main problems. They also express a sense of relief that specialised technicians, such as entomologists, are available to share in identifying solutions to combat pests and diseases.

Visits of technicians, who have a specialised knowledge, is a mechanism by which farmers have access to knowledge. The entomologist stated: "*the first thing I did when I joined SFP/PO was to visit all farmers across the Southern Baja Peninsula"* [SFPS01DRF]. The entomologist

visited all SFP/PO farmers across southern Baja Peninsula to identify the issues in each production site and, along with farmers, find a technical solution.

Other examples of access to specialist technical knowledge by participating farmers regards crop rotation, composting, and cultivation activities. The area co-ordinator is a specialised agronomist who is also a farmer himself. As an experienced organic practitioner, he passes on knowledge and information about the benefits of encouraging of microorganisms, how to carry out the activities in land of participating, and helping farmers identify pieces of their land where they can grow organically.

Language is another element from the pool of resources. Farmers shed light on the development of a code of communication which displays the knowledge farmers have accessed. During interviews, it was observed how farmers were able to communicate and express their experiences in organic practices by using technical terms. For example, farmers are conscious of the change in mentality and way of doing agriculture and this change is expressed in their vocabulary. As one of them said: *"in other farms and pack houses there aren't rules nor a good way of doing things for export or local produce, because they are not organic"* [SFPS03CM1]. Their participation in SFP/PO engages them in some dynamic social interactions where a technical and more sophisticated language is used to communicate how agricultural practices should be done.

When I asked farmers about crop cultivation, farmers demonstrated how they have gained a shared understanding of various concepts of cultivation. For example, one farmer said: *"crop ration is about establishing any type of crop in a piece of land where previously that crops have not been grown"* [SFPS]. Regarding pest control, another farmer said: *"when there are insects that affect our crops, speaking of pest, there are organisms that eat phytophagous which are their natural enemies"*. Both quotes shed light on the use of terms in their language. The terms *crop ration, pests, organisms, phytophagous and natural enemies* are terms used in organic standards of the American legislation. Even though, farmers do not use codified information as their main

source of reference, verbal communication contains the terms of what the organic standards require. This shows how language is used as a resource and is linked with the codified knowledge that is available in SFP/PO.

SFP/PO also provides spaces for open discussions among participating farmers, both novice and competent. There are two specific spaces for discussions, i) balance and budget meetings and ii) the general annual meeting. In both spaces, farmers have the chance to negotiate the types of crops, logistics and issues related with certification. Regarding balance and budget, farmers meet with the area co-ordinator and the manager of international farming, to negotiate the types of crops that will be grown for coming season. In this space, negotiation takes place on a one-to-one basis to determine what crops farmers each farmer is most competent to grow. Hard data demonstrates how capable farmers are of growing specific crops. As a result, the meeting allows farmers to select the crops of their choice, and whether they want to increase or decrease the production area of a specific crop. *Balance and budget meetings* are spaces that provide an opportunity for farmers, the area co-ordinator and the director of international farming to negotiate and propose new crops. There is also an opportunity for farmers to express their concerns and identify the strengths and needs regarding their own operations.

The *Annual General Meeting* is another space where all participating farmers, as well as the broker and the commercialisation team in the USA, come to Southern Baja Peninsula Mexico, where farmers, the area co-ordinator, and the commercialisation team expose the situation of SFP/PO is in respect to other brands, and what are the new requirements and concerns from customers that will shape production activities for farmers. It is also the space where farmers, as members of the community, express their opinions with respect to aspects of production and product development, and indicate the support they feel they need.

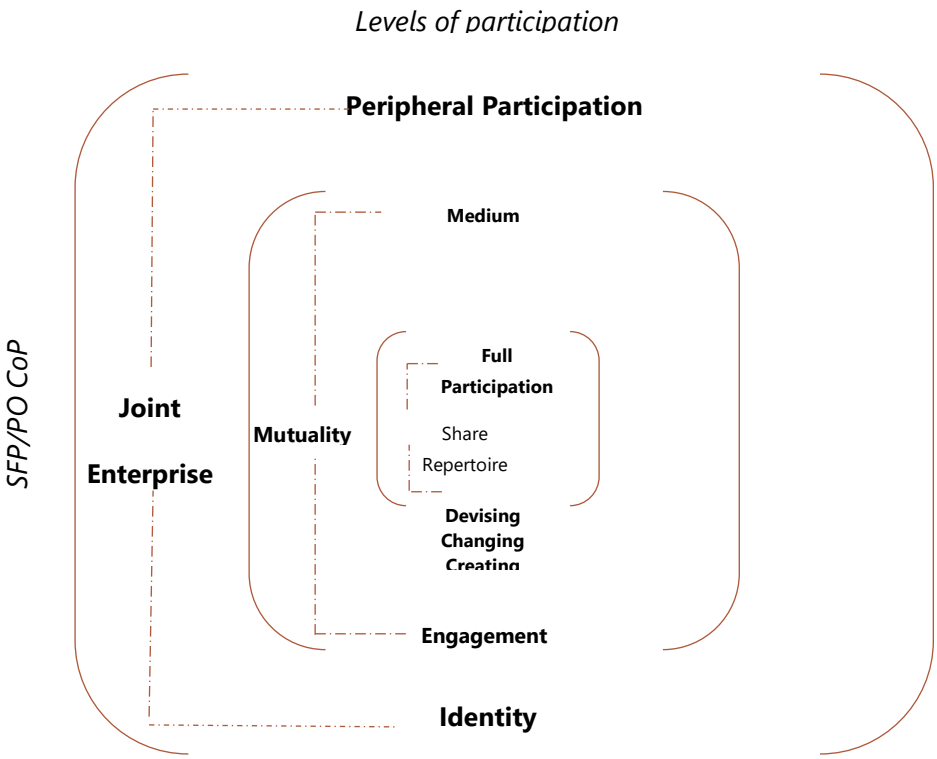
In summary, farmers collectively define competence by understanding the philosophy of SFP/PO, where their efforts are focused towards the improvement of farmers' living

conditions by growing and commercialising organic produce. By experiencing the philosophy, farmers become reliable members of the community where they establish relationships based on norms. SFP/PO sheds light on ethical dimension such as its philosophy which becomes an important aspect of the understanding of the purpose of SFP/PO. In addition, farmers in SFP/PO create a pool of resources like knowledge and language which are available and used to look for solutions to problems. As part of the pool of resources, farmers create the spaces in which there are opportunities for negotiation and exchange ideas throughout the GVC.

Competence display: Modes of Participation to SFP/PO Community of Practice

In San Francisco Produce/Peninsula Organics, farmers' competences are displayed in accordance to the level of participation in the community in three sequential levels. Wenger (2000) argues that the belonging of apprentices or pioneers, new-comers or old-timers can take various forms of participation, distinguishing between Imagination, Engagement and Alignment. In Figure 1. Competence Display in SFP/PO, I illustrate that peripheral participation is the basic level of competence display, where farmers display competence by developing an identity based on the sharing understanding of what the SFP/PO community is about. Medium participation is the intermedium level of competence display, where farmers engage on mutual and reliable relationships. And finally, in full participation in SFP/PO is the highest level of competence display, where farmers devise, change and create tools for improving practices of the community of farmers. Hereafter, I discuss how each level displays competence.

Figure 1. Competence Display in SFP/PO



Source: Data collected during fieldwork

Peripheral Participation

Farmers' participation in the periphery of the community starts by building the identity of an organic farmer through understanding the undertaking of San Francisco Produce/Peninsula Organics (Joint Enterprise), specifically, *i) its philosophy* and *ii) the principle of organic farming*. Given that farmers' previous context was that of conventional farmers, farmers' peripheral participation into SFP/PO Communities of Practice requires embracing an effort of redefining their identity, to become organic farmers.

Before joining San Francisco Produce/Peninsula Organics, their identity was that of a conventional farmer, producing for themselves and local markets. There was no need to meet

stringent international market specifications. In describing the conventional context, a farmer put it this way: *"we were farmers and my thing was to grow corn"* [SFPS04PR]. The quote illustrated the farmer's context in which conventional agriculture and local market dynamics predominated in his practice, specifically the production of corn for local markets. The quote also sheds light on the contextual elements such as conventional agriculture, and local markets had defined farmers' identity by using a collective noun of *we*, implicitly showing interactions among other farmers in that context. However, farmers' accounts indicate that by joining San Francisco Produce/Peninsula Organics, they changed their perception to that of a new context in which meeting requirements of international markets, specifically, the US market, meant changing the way they had been doing agriculture and therefore, their identity as farmers.

Joining SFP/PO meant interacting in a context of agriculture that redefined farmers' identity from that of conventional to organic and producing for a Global Value Chain. For example, in the peripheral ring of the community, farmers begin redefining their identity by undertaking both organic and food safety certifications as part of the Joint Enterprise of San Francisco Produce/Peninsula Organics. One farmer put it this way: *"here [SFP/PO] all the activities are in line with the organic regulation, the national organic programme of The USA"* [SFPS03CM01]. The participation in SFP/PO entails bearing in mind the standards for certification and sense of responsibility to maintain these standards. An interviewee put it this way, with respect to organic standards: "*growing organics is challenging because you're not allowed to use many things [chemical based inputs] techniques of modern agriculture. But obviously you decide to go back to fundamental basis of agriculture"* [SFPS04PR]. Both quotes shed light on the effort carry out to embrace the joint enterprise of SFP/PO to become an organic farmer.

The same farmer later stated that: *"We are growing healthy produce*", shedding light on how SFP/PO context provoked change in his interaction with crops and inputs: "*now our experience tells us that we should use compost to grow basil and we see the results"*. The farmer consciously highlights the use of organic inputs pointing out the additional attributes they provide to the

crop, such as an emphasis on health, rather than merely production, which contrasts his previous interactions with chemical-based inputs.

When farmers were asked about food safety certification, one said: *"food safety is very important. If a farmer grows something without considering food safety standards, simply that farmer is not reliable, and SFP/PO will not take the risk"* [SFPS03CM03]. This narrative surfaces with the view of the area co-ordinator who sees certification as an act of faith. One farmer provided an example of how they experienced following food safety certification standards: "*before, we could pack our produce underneath the trees, but not anymore"* [SFPS02PAU]. In contrast with what their practices were in conventional agriculture, this quote indicates the changing of their practices towards the undertakings of SFP/PO. This means farmers have changed their agricultural practices by incorporating the requirements of SFP/PO and those of wholesale customers. For example, the practice of packing under trees is no longer accepted due to lack of control of hygienic requirements. SFP/PO and its customers need to guarantee food safety for which farmers must pack their produce in certified pack houses.

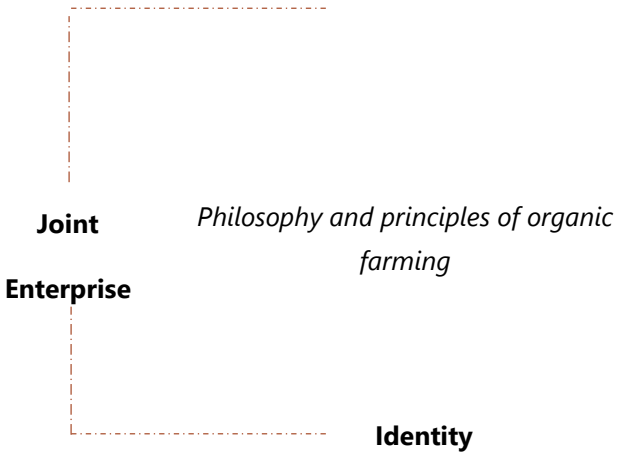
Even though the context of conventional agriculture defined, at the beginning, the identity of both farmers, there were cases in which the farmers' effort for developing an identity was insufficient to participate in the periphery of the value chain. In 1999, a cooperative dedicated to growing and producing conventional lemons and pineapples contacted SFP/PO due to their interests in organic farming. The cooperative accomplished the organic certification so that the smallholder farmers' efforts appeared to have engaged with the undertaking of SFP/PO. However, their identity was not transformed, as the area co-ordinator explained:

> *"I went to visit them to make a quick inspection. I noticed there was a presence of small fly that affects citrus. I talked to one of the farmers and I found out that the input they applied caused them pain and irritation. That was not a good signal. I walked at the surroundings of the land and I discovered containers of prohibited chemical. The group was dismissed" [SFPS01COOR1]*

Despite the apparent interest, the identity as a conventional farmer was stronger, clashing with the undertakings of the CoP of SFP/PO. As their operation had been mainly conventional, their context implied that of a mixed operation, which required a combination of conventional and organic standards. Since their participation was peripheral, and despite applying to be part of the purposes of SPF/PO, they were not fully embedded into organic farming practices, and the identity of is this group of farmers did not change.

Another single farmer was invited to participate. The efforts for redefining his identity for peripheral participation were not enough to engage with the community of practitioner farmers. The area co-ordinator put it this way: *"The issue with Mr. T was that he wasn't completely convinced that his crop would work, as he was used to growing grains in large extensions"*. The single farmer's effort did not allow further development of an identity of organic farmer to enhance the display of competence in the periphery. The conventional agriculture scheme and thus identity, were entrenched that despite engagements from the area co-ordinator could not incept motivation nor deeper engagement with the community.

Figure 2. Peripheral Participation



Source: Data collected during fieldwork

As illustrated in Figure 2, in peripheral participation, farmers display competence by showing understanding of what the enterprise of SFP/PO. By following the organic farming principles and the philosophy of SFP/PO, farmers develop an identity which allows them to start participating with competent farmers, to gradually pave their way into other levels of participation and activities. For example, farmers in Firm 4, elucidate a successful conversion to organic farming. Firm 4 had no experience in agriculture at all, however, they were willing to change their economic activity, and this enabled them to embrace the organic principles and philosophy of SFP/PO. In addition, their conversion took around 2 years, given the time needed for them to develop the basic organic farming skills. In contrast, farmers in Firm 3, although part of the chain, are still in the process of developing their identity, given that those farmers were used to growing large areas of conventional grains. Despite these barriers, the younger generation (the sons and daughters of these farmers) are driving the change meaning there are better prospects for this cooperative to embrace deeper participation.

Medium Participation

In medium participation, farmers display competences by engaging with one another in carrying out practices with the purpose of finding solutions for common problems i.e. i) cultivation practices and ii) starting organic operation. In SFP/PO an identity of an organic farmer, creates the possibility for farmers to further engage with other farmers and develop their competences in a medium level of participation. This means farmers are reliable practitioners and therefore can engage in relationships of mutuality to find solutions because there is certainty that norms are followed and understood so that the solutions contribute to the operation of San Francisco Produce/Peninsula Organics.

During the interviews, farmers in general stated a common concern regarding biological control, highlighting the issues on changes of climate during the transitions from spring to summer. This change in seasons creates a variation in temperatures, from temperate to warm,

that accelerates the growth of populations of insects. This is a critical issue for farmers given that this time is also the period for planning planting for the next season and begin preparation for growing crops, which ultimately compromises crops quality. As the entomologist described: *"when I first started in SFP/PO, I found farmers very concern about pest control. They told me they had problems, and I told them I needed data, records and pictures.* In this regard, one of the first skills of farmers was to know the types of insects in their fields across southern Baja Peninsula. As one farmer put it: "*we would put traps and changed them every week and every other week in those faraway places [farmers how lived in very isolated places]"* [SFPS01DRF].

The activity of collecting insects with traps and sharing information with the entomologist was based on identifying types of insects that affect crops and what their natural enemies. This engagement involves farmers from all regions, as one farmer said: *"what we [farmers across Baja Peninsula] did was to monitor crops, watching and checking the presence of insects. If we saw the incidence of any kind of insects, then we introduced beneficial insects that counteract that plague"* [SFPS03CM02] As there is a common threat that could hinder the quality of their production, in this quote the farmer indicates the strategy they carried out. Particularly the statement shows that the strategy was collectively developed. For example, the entomologist was in the middle of southern Baja Peninsula so that he could be closer to farmers and move fast to every location as easy as possible. In this way, understanding farmers' issues with insects and context would much easier.

Within the logic of the strategy was that farmers and technicians do periodic inspections to every geographic zone, twice a week and assigning specific task to farmers. The visits, task and the availability of the entomologist to receive calls from farmers, enabled the communication between farmers and entomologist. The engagement is driven by the concern on finding out the behaviour of populations of insects. The common need allowed farmers to interact with participating farmers and the entomologists based on the exchange of information.

With regards to activities for *starting operations*, farmers need to interact with experienced farmers to carry out cultivation practices according to organic standards. The area co-ordinator expressed: *"my first task as part of SFP/PO was to stay in the farms of two new farmers that were learning to take them forward in cultural labours and certifications [for about 6 months intensively]"* [SFPS01COOR01]. The main theme that came out was the historical records of land for both organic certification and management of land [cultural labours and crops]. These activities require farmers and area co-ordinators to doing things together. One of the farmers said: *"Yes, of course, he [area co-ordinator] was coming every day […] precisely to check out how the crops were going, how the [crops] were developing* [SFPS03CEO]. In both quotes, the identity of an organic farmer drives the interaction with the purpose of creating a team. This identity allows them to connect by using the same language and knowledge to assure the compliance of organic standards. Both farmers are bundled by interacting in the medium level of participation.

Despite engaging farmers in mutual activities, there were accounts that suggested some farmers struggled to do things together, which were not validated, or did not meet the features of a team work in SFP/PO. For example, the third cooperative that was part of SFP/PO started to manifest issues with carrying out production activities. As one farmer of that cooperative explained:

> *"We [farmers] started doing things our way which was not necessarily right. It was evident because we started receiving many complaints from our broker in the USA. […]" [SFPS05CM02]*

This quote illustrates that despite the engagement with competent farmers, during the interactions there were disagreements among novice farmers as to how important their role was in soil and compost preparation, quality control, and creating the perception that they did not care about these activities, and therefore they were not contributing to SFP/PO. Some farmers benefited financially more than others. The issues they faced were poor quality and

yields on cherry tomatoes, not complying with activities of the season, creating production problems in whole operation of SFP/PO.

For example, soil was among the issues as consequence of the disagreements. Farmers experienced disagreements, creating lack of engagement and therefore, made farmers follow the soil building and compost practices irregularly. One critical issue was that of farmers working when they had wounds, affecting the quality of the produce. The lack of engagement was evident in the failure of the harvesting crew to follow hygiene rules and not work with wounds. As an example, one farmer managed to work on the field with a wounded hand. At the time of packaging, other farmers found blood stains on the band that protected the wound. This issue could have escalated with major consequences, hindering the ability of the entire network of participating farmers to export their produce into the US market, had the band and blood stains been found by final consumers.

However, as part of the engagement effort, the area co-ordinator reinforced the importance of mutual relationships among farmers by highlighting the purpose of SFP/PO. As he put it to them:

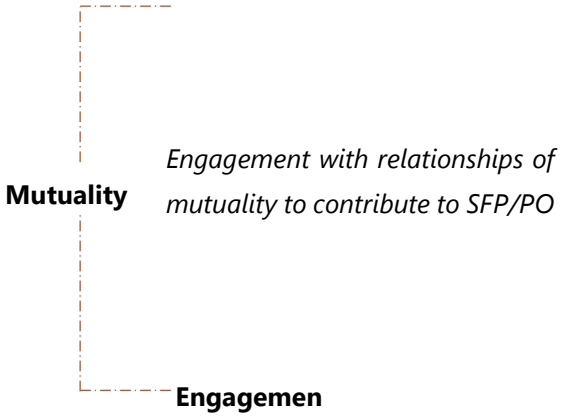
> *"I told them straight forward that if they didn't to work together, if they haven't understood each other nor what this [SFP/PO] is all about, I'd rather have split the group into two or three as a second chance or terminate the operation" [SFPS01COOR01]*

The quote of the area co-ordinator calls on the purpose of integrating farmers into added value production activities. The fact that these farmers weakened their engagement with the rest of community and posed a threat to the operation of all farmers, meant to apply a strategy of dividing the group into two groups. This strategy could finally group farmers with affinities in their objectives and personalities to reinstate their relationships of mutuality among farmers and ensure the operation of SFP/PO as value chain. The strategy also ensured

that farmers could stay as part of the value chain, not in one group, but in three different groups and ensured the well running of the farming operation of the whole value chain.

As illustrated in Figure 3, in medium participation, farmers display competence by engaging with other farmers in relationships of mutuality based on norms with the purpose of finding solutions to common problems.

Figure 3. Medium Participation



Source: Data collected during fieldwork

Full Participation

In SFP/PO displaying competences goes beyond the realm of producing according to specifications, be they quality, organic, food safety or Fairtrade certification. Following requirements show a peripheral and medium participation meaning farmers have developed the necessary skills to contribute to the process of organic production and thus engage in the

production effort with other farmers. Therefore, farmers display full competence when their activities and production skills are used to start devising, changing and creating tools in accordance with organic standards for the benefit of their own practices and the practices of the rest of the community of farmers.

In this regard, competent farmers highlighted the importance of following up the organic principles. Their experiences are added to the pool of resources of SFP/PO and made available to other farmers. One competent farmer put this way:

> *"it is important to show farmers how to coexist with insects and use the organic inputs because they are plant base inputs. Then they [organic inputs] do not have the same effect as chemical base inputs" [SFPS04IT02].*

The farmer shows conscious and awareness of guaranteeing the organic quality of their production and the entire operation of SFP/PO. This is consistent with the statement of the same farmer when he argued that: *should one of the produce be identified as contaminated, at the end of the day, it affects the whole of us [SFP/PO]"* [SFPS04IT02]. Therefore, competent farmers constantly argued that there exists a big risk that one farmer does not comply with the standards for the whole of the community of farmers. Their arguments are part of the stories that illustrate to other farmers, especially novices, the risks that like in the operation of SFP/PO and the shared responsibility there exists among participating farmers.

To help other novice farmers in the periphery and medium participation, competent farmers share their experiences to create consciousness in novice farmers. The area co-ordinator tells farmers:

> *"I tell farmers to imagine and place themselves in a super market where there are twenty different brands of cherry tomatoes. And that customer looks at SFP/PO brand perhaps because they like the product, because they know we work smallholder farmers. You should feel very proud you have been chosen among many brands" [SFPS01COOR1]*

As a competent farmer, the area co-ordinator shares this made up story to farmers as source of information to call on their identity of organic farmer and enhance their mutuality, their sense of collective work to ultimately create consciousness of their actions and how final consumers perceived their own brand thus how important the organic farming practices are so that their produce are competitive i.e. still within the preferences of customers in the US market. Competent farmers pay visits to novice farmers, to suggest techniques as to how to improve biological control, based on their experience. One farmer explained:

> *Q1. "I suggest to farmers that biological control is creating the adequate conditions for natural enemies to stay in the sites [fields] all the time, and that is the grow of crops as natural barriers"*
>
> *Q2. "Natural barriers help protect the crops from strong winds and dust. Then natural barriers such as sunflower, coriander and corn. Any plant with flower will attract natural enemies".*
>
> *Q3. "Then you are giving places for them to reproduce and where they will keep their populations. They [insects] will grow and move wherever the crop is located. [SFPS01DRF]*

In these interactions, competent farmers make their knowledge available by making suggestions to improve the farming practices. In Q1, the farmer reinforces the principles of biological control by stating the importance of creating conditions for natural enemies. In Q2, however, the farmer further developed the suggestion by naming the type of crops which create suitable conditions for natural enemy insects. And in Q3, the farmer passes on to the novice farmer their reflections upon the practicalities of their own practices, by highlighting the how it has worked for them.

In addition, competent farmers create techniques for the further improvement of their practices. Those techniques are shared among participating farmers so that they become part of the pool of knowledge and techniques. One farmer developed a technique to combat insects and support biological control:

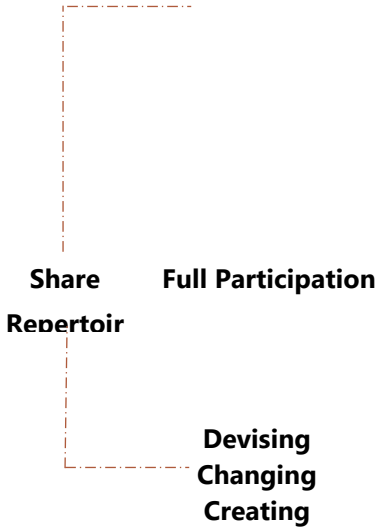
> "I noticed that whenever I went into the greenhouse and turned on the vacuum to capture some insects, insects would let themselves fall off the plant to seem dead. […] what I did was to place sticky yellow traps on the floor and I would turn on the vacuum. I saved money, collected insects I needed" [SFPS06IR001*]*

Another farmer also developed another practice for transplantation:

> *"We were told to transplant three plants per meter. We tried something different; instead, we transplanted six plants per meter in zig-zag in double line. With that we realised we saved seeds, wood sticks. In 1/8 of the same space we planted more plants, and therefore we also saved water"* [SFPS06IR001*].*

In summary, these accounts from competent farmers reveal the adding up of techniques that form part of the pool of knowledge and are passed on to other farmers in teachings. Their mastering of their practices went further, they decided to try different approaches to improve their practices.

Figure 4. Full Participation



Source: Data collected during fieldwork

Summary

This paper addressed the research question of *How do smallholder farmers display competence in the Community of farmers of San Francisco Produce/Peninsula Organics?* The analytical categories of Communities of Practice illustrate the social learning that takes place among farmer. These categories were used to analyse first, how participating farmers define competence and then

to examine how farmers display the collective defined competences in the community of SFP/PO.

San Francisco Produce/Peninsula organic illustrates a social learning characterised by social participation where competence is defined by members of the community. The analysis of competence definition and display illustrates that San Francisco Produce/Peninsula Organics as Global Value Chain (GVC) constitutes a social context where partaking farmers involve themselves in social participation. Farmers collectively define what constitutes a competent organic farmer in this value chain. *In the periphery of the community*, farmers display competence by developing an *identity of an organic farmer*. The undertaking of SFP/PO shapes the identity of farmers by changing the way they interact with crops, having in mind the standards for organic and food safety certifications and the social purpose toward improving their living conditions.

Social participation regards identity formation and redefinition for it to engage with other farmers in mutual understanding. As farmers with their new identity interact with other farmers, in *medium participation*, farmers are now able to engage with the community in carrying out practices with the purpose of finding solutions for common problems regarding cultural labours and for the start of farmers' operation. Farmers can engage in relationships of mutuality, making them reliable practitioners to find solutions with the certainty that norms are observed and internalised so that solutions can contribute to the operation of SFP/PO.

Finally, with farmers' engagement with the purpose of finding solutions, in *full participation*, farmers contribute to the pool of resources for the benefit of practices of the rest of the community of farmers. In this level of participation, competences are displayed with activities and experiences of farmers who can use the language the community understands, convey experiences throughout the network that illustrate foreseeable situation another farmer may have to undertake. Therefore, learning in San Francisco Produce/Peninsula

Organic acquires the social characteristics due to display of competence in three levels of participation, which gradually allows farmers to become competent members of the community.

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