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Cultivating human beings: natural farming in South Korea

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"*This is what I tell farmers. "Can you grow a single apple, a single grain of rice from your body? No matter how much they try, humans cannot bloom a single apple flower. The rice plant is the one bearing rice. The apple tree is the one yielding apples. The protagonists are not the humans, but the trees and the rice plants. Humans do only run errands for them. I wished you understood that*".

Kimura Akinori, Japanese natural farmer

(Kimura, 2010, p.8, own translation)

Abstract

Although having achieved an unprecedented rise in food production, the ecological, social and health impacts of industrial agriculture have led numerous scholars and activists to question its desirability. Regarded as a type of industry, industrial farming is grounded in the reductionist and mechanistic metaphysics of the modern Western thinking tradition, regarding humans as separated and superior to nature. Natural farming, as articulated by the Japanese philosopher and farmer Masanobu Fukuoka, offers an alternative, bridging the human and natural world in a search for unity, that has been relatively unexplored in academic agricultural research and discourses. This exploratory research, adopting grounded theory as a framework, is based on participant observation on seven farms practising natural farming in South Korea and on interviews with the farmers inhabiting them. Studying the relation between the understanding of self in the world, perception and practices, as informed by natural farming philosophy and principles, this research suggests that the processes of: 1) directly experiencing the fields through the senses, 2) adopting and striving to reach a holistic, non-dualistic and relational perception, 3) establishing relationships with nonhuman living beings, fosters the development of an 'ecological self-in-relation' based on a realistic appreciation of one's place within the world, which informs practices in a dialectical way. I argue that natural farming, through metaphors of inner growth, relation, unity, sacredness and balance, can contribute to the development of a coherent and comprehensive philosophy supporting sustainable agriculture.

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이 논문에 참여하고 도와준 모든 농부들께 제 깊은 감사를 드립니다. 여러분의 도움으로 이 논문을 쓸 수 있게 됐습니다. 저를 너무나 친절하게 환영하고, 대해주고, 맛있는 음식을 나누어 주고, 가르쳐주고, 제가 너무 많이 받았습니다. 이 은혜를 영원히 갚지 못할 것 같습니다. 저에게 나눠준 자연농의 대한 깊은 생각을 제 생에서 비추게 하고 언젠가 제 농장을 생긴다면 제 농사의 단단한 바탕을 될 겁니다. 이 만남으로 제 생의 방향을 상당히 바꿨습니다. 여러분한테서 영감을 받아 저도 질문이 아닌 대답을 살겠습니다.

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Chapter 1. Introduction

1.1 An agriculture for the 21st century

The progress in agronomy, genetics and chemistry achieved during the last decades have been the driving forces in the development of modern agriculture. Relying on a few high-yielding species and on heavy fuel and chemical inputs, an important rise of the world food production was thus attained (Malézieux, 2012). Agronomic research has mainly adopted a productivist focus, aiming to establish systems and produce knowledge for the maximisation of crop yield used for direct consumption or industrial purposes (Doré et al., 2011). However, an increasing community of researchers have pointed to the fact that relying on homogenous monoculture and intensive production systems was no longer desirable from neither ecological, economic or social perspectives (Nicholls, Altieri, & Vazquez, 2017). According to Thiessen Martens, Entz, and Wonneck (2015), this model is characterised by an inefficient use of resources, high dependence on energy, a dangerous reduction of biodiversity, a major ecological footprint, a vulnerability to climate variability and to pest outbreaks.

Besides these numerous ecological consequences, the whole organisation of production was conceived anew, as well as the role of the farmer in it. Beau (2017) characterises agronomic research developing during the second half of the twentieth century as the search for an agricultural model and methods which could be applied in all conditions, regardless of the environment in which it would be implemented. The organisation of agriculture production was simplified along with the simplification of the previously established complex systems of polyculture and livestock farming. Chemical treatments were applied to fields to conform agricultural soils to their modelling in agronomic theory. The standardisation of plant genetics was followed by the minimisation of the interactions between the cultivated plants and their environments, which were thought of as a hindrance to agricultural progress.

This simplification of ecosystems and their management co-occurred with the productionist conversion of farmers. According to Larrère (2002), the modern farmer's status transited from 'peasant' to 'producer of raw materials'. Buying means of production, their autonomy has thus been reduced by suppliers and by the specialised technical advice they are offered as instruction book. Transitioning to a 'vertical model' of improvement of agricultural practices, farmers took on the role of applying in the fields the innovations developed in the laboratories of agronomic research (Beau, 2017).

For Merrill (1988), modern agriculture is to a great extent a reflection of the prevailing reductionist worldview of western societies. Regarded as a declension of the industrial sector, agriculture is forced "into the wrong metaphysical category" (Merrill, 1988, p. 83). According to Keller and Brummer (2002) a mechanistic view of nature has been dominating the Western thinking tradition, clearly

manifesting in the current practices of industrial agriculture. They identified four components characterising a productionist mentality in relation to agriculture: a belief that the natural world can be understood as a machine; a resulting view of the natural world as deprived from intrinsic value; an accompanying epistemology separating facts from values, giving credence solely to the quantifiable aspects of reality and seeing science as the only way to solve agricultural issues; promotion of an "economic model of human-nature interactions" (p.265). Several other problematic concepts attributed to the ideology of industrial agriculture were listed by Cox (2014a) in a literature review. Among others, he identified the characteristics *mechanistic*, *scienticism*, *a-contextuality*, *anthropocentrism*, *alienation*, *conquering mentality*, and *reductionism*. Examining the metaphorical realms of industrial agriculture, Sanford (2011) identified "conquering nature" and "manipulating parts of a machine" as fundamental ideas. She highlights that the narratives underlying and guiding modern Western agriculture have been obscured as they originate from the scientific domain "and science, for the most part, is deemed objective and beyond culture" (p.289). She reminds us that these narratives although currently dominant are but one options among multiple others.

Examining the foundation of modernity, Latour (1993, p.13) considers that it is based on an ontology of 'double separation': "between humans and nonhumans on the one hand and between what happens 'above' and what happens 'below' on the other". From this double separation arises all different forms of dualism, as body/spirit, human/nature, subject/object (Stuckey, 2010). Heldke (2018) identified several major characteristics of dichotomous thinking: a tendency to create an antagonism between two mutually exclusive extremities, a removal of nuances and the association of self-reinforcing dichotomies to create cohesiveness in the way the world is understood. Dichotomies are also often value-hierarchical: Plumwood (1991) points to the tendency of valorising self over other, reason over emotion, objectivity over subjectivity, human over animal, culture over nature and masculine over feminine. She argues that the dominant narrative underlying Western tradition has been founded on such a dualistic way of thinking thus supporting an interpretation of the human self as "an atomistic and rational ego separate from emotion, body, nature, and animality" (Brown, 2014, p.151).

The disconnection we perceive in our relation to nature appears in the tendency to objectify the things we encounter in the natural world (Hebert, 2014). We come to relate to the world as a 'collection of objects' (Berry, 1996). When assuming that subject and objects are separate, we start thinking of reality as exterior to ourselves and as constituted of solid and permanent objects, for us to analyse, measure and control (M. Gagliano, 2013). Seeing other beings in the natural world as passive or inert objects affects the way we perceive and interact with them. For Abram (1996), we thus deny them an ability to engage us and stimulate our senses and close off the perceptual reciprocity linking us to them.

Ecological philosophers have argued that a dualistic way of constructing nature cannot reflect our lived experience and presents a conception of nature which is value-free (Brown, 2014). This provides

a justification for considering the natural world as a container of resources for us to use. On a psychological side, the disconnection we create helps us escape the feelings of loss and pain that arise when facing the destruction of the surrounding ecosystems (Hebert, 2014). Educated into the western tradition, with its discourses and practices, we grow up to embody these dualisms and live through their ethical consequences (Bai, 2015).

Several authors characterise our current human civilisation and the western mind as an early developmental stage and call for the need to go towards maturity. In such a way, Gagliano (2013, p.7) describes our current crisis as the "outer manifestation of [an] inner distraught state" and claims that it can only be resolved "by learning who we are and how we fit into the rest of Nature, thereby moving beyond adolescence into the powerful and responsible time of adulthood". She further denounces our current unawareness of the central interconnectedness of all phenomena. In a similar way, Beyer (2014b) claims that we currently are in a stage of evolution where our integration into the whole of the self is inadequate and insufficient.

This criticism of an inadequate perception of the self in the world could be applied to the ideology of modern agriculture as well. Having witnessed the social, environmental and health consequences of the application of the modern western ideology to agriculture, it is time for us to shape and adopt a different narrative, based on interconnectedness and the awareness of our embeddedness in a larger whole. In this way, Sanford (2011, p.284) calls for an urgent rethinking of food production by "expanding the moral imagination to include farming practices", requiring a process of imagining farming practices which would not only consider the effects it has on human communities but also on nonhuman communities. The philosophy and ethical foundations of agriculture need to be examined and revised. As Zimdahl and Holtzer (2018) mention, because agriculture is an essential human activity, we are obligated to enquire into the ethical values guiding farming and we need to create for it a strong ethical foundation.

1.2 Significance for agroecology

Agroecology provides elements for the establishment of farming systems that are productive while conserving natural resources, and that are socially just, economically viable and culturally sensitive (Altieri, 1995; Gliessman, 1998). Agroecology promotes the use of principles rather than practices to establish farming systems based on: 1) an internal cycling of organic matter and nutrients, 2) the regulation of pests and diseases through functional biodiversity, 3) the development of soil conditions favourable to plant growth, 4) the minimisation of energy, water and nutrient losses by enhancing the regeneration and conservation of these resources, 5) an enhancement and diversification of species and genetic resources over time and space, 6) the promotion of essential ecological processes and services through the enhancement of beneficial biological interactions and of the synergies between the

components of the agroecosystem (Nicholls et al., 2017, adapted from Altieri, 1995 and Reijntjes, Haverkort, & Waters-Bayer, 1992)). The transition to and adoption of such systems could be fostered by the articulation of a story, philosophy and ethics supporting them. For Sanford (2011), changing our way of thinking about agriculture would be a first step towards a change in practices. This could be reached through shaping a story that does and can shape agricultural practices.

As such, the integration of philosophical elements to agricultural research is needed to develop an ethical foundation. Indeed, Bai (2015, p.138) highlights that it is the task of philosophy to show that "ways of thinking and seeing have ethical implications and consequences". Recognising our involvement with values and emotions is a first step towards a continuous reflection on the possible ways of living within a community of "morally significant others" (Brown, 2014, p.157). This is what Travis Cox attempted in his work on 'transpersonal agroecology (TPAE)' (2014a; 2014b). Mentioning that sustainable agriculture has often been reduced to an array of practices, he declared that there is something more than practices, "something deeper at the level of the mind-set of the farmer" (Cox, 2014b, p.35). Gathering the commonalities of the theorists of sustainable agriculture, he generated the concept of 'transpersonal agroecology' – which is concerned with the metaphysics of sustainable agriculture – out of the wish to open a discussion about the deeper philosophical grounds of sustainable agriculture. He identified several reoccurring characteristics in the work of these theorists: an opposition to the scientism and economism underlying industrial agriculture, an explicit role given to values and spirit, a sense of the process and experience of identification with the farms and beings on the farm, and an awareness of alternative methodologies and epistemologies.

Cox argues that agricultural research needs to take into account the mindset of the farmers and the integrity of the living beings on the farm. The farmers and their mindset need to be replaced within the centre of the discussion around sustainable farming systems and practices. Research needs to study how farmers relate to their lands, to the plants they grow and to the other non-cultivated living beings in the fields, and how this appears in their discourses and is expressed in their practices.

Pouteau (2012) sees the emergence of organic agriculture and agroecology as a "first step towards a comprehensive philosophy of agriculture" (p.154). In this thesis, I will explore how natural farming as developed in East Asia can contribute to the enrichment of this philosophy by presenting another understanding of the farmers in the fields and of their relationship to the more-than-human world.

1.3 Natural farming: from Japan to South Korea

1.3.1 Background: a short agricultural history of South Korea

Before moving on the presentation of the philosophy and principles of Natural farming, I will dedicate a short introduction to the recent history of agriculture in South Korea. This summary is principally drawn from the writing of Suh Jungho on sustainable agriculture in South Korea (Suh, 2018).

Before the 1960s, Korean agriculture has been characterised as 'permanent agriculture' following the observations recorded in the writings of King (1911/2011) from his travel to China, Korea and Japan in 1909. King observed that the farmers in these countries had managed to maintain soil fertility for thousands of years through the recycling of nutrients in a close nutrient system integrating crops and livestock at household level. The cultivated area per household was generally less than 2ha and based on subsistence cropping with rice as the main staple food. As no chemicals were used, rice paddies were still full of wildlife like frogs and mudfish. Human labour was the main element of weeds control. As the transplanting of the rice seedlings and the late season harvest were labour-intensive tasks, farmers of a same village used to organise seasonal work cooperatives to direct collective work.

From the 1960s ensued a period of agricultural industrialisation and globalisation. Urban industries developing, a growing demand for labour was translated in a rural migration. The rural population of the country fell from 72.3% of the total population in 1960 to 18.1% in 2010. The government saw traditional agriculture as the cause of poverty and introduced western agricultural science and technology to accelerate agricultural industrialisation in a green revolution perspective. Traditional crop-livestock systems slowly disappeared as the government encouraged farmers to adopt industrial agriculture and its practices. Fast-growing and high-yielding crop varieties were publicised by the government to the farmers and widely adopted. As those manifested a higher vulnerability to weeds and pests, herbicides and pesticides started to be spread excessively from the mid-1970s. In the early 1970s, the government initiated the Saemaeul (new village) Movement, a top-down and growth-oriented initiative pushing for rural economic development. It aimed at mobilising the rural labour force, set up infrastructure in the countryside and enhance food production.

However, the expansion of conventional agriculture and the widespread use of agrochemicals that it requires resulted in increasing agro-environmental problems, such as land degradation, biodiversity loss and water contamination. The social cohesiveness that was characteristic of the traditional farming system disappeared, as the new conventional model did not need collaborative work and labour-sharing cooperatives. The rising economic affluence gave rise to more individualistic values and mindset, that pushed aside the communitarian ones that were held in traditional rural villages (Park, 2009). In reaction to the social, food quality and environmental issues coming from the

productivist paradigm that was adopted to frame modern Korean agriculture, various sustainable agriculture movement emerged in the 1990s. The demand for organic food started increasing and the organic food certification system was introduced in 1993 and the government passed an *Act on the Promotion of Environment-friendly Agriculture* in 1997. Migration of urban dwellers to rural areas with the goal to start farming started increasing from the early 2000s, facilitated by the newly formed nongovernmental organisation "Back-to-the-Land Migration Movement Centre" established in 1996. Along with the increase of back-to-farming migrants, organic farming areas started slowly increasing from the early 2000s to reach 1% of the total agricultural land in 2014.

Natural farming was one of the sustainable farming systems that were introduced to South Korea in the 1990s, having its roots in Japan. The later part of this section will be dedicated to an inquiry into the emergence of natural farming in Japan, the thoughts and philosophy developed by its most famous progenitor Masanobu Fukuoka, its adoption and further development by later farmers and individuals to end on an overview of natural farming in South Korea.

1.3.2 The emergence and development of natural farming in Japan

Natural farming was first popularised by the Japanese farmer and philosopher Masanobu Fukuoka (1914-2008) in his work 'The One Straw Revolution" first published in Japanese in 1975 (for the English edition, see Fukuoka, 1978/2009). After graduating from an agricultural college where he had studied plant pathology, Fukuoka pursued a career as a microbiologist and started working as an agricultural customs inspector in a laboratory. In the 1930s, he had an experience of revelation in which he saw the "eternal form of nature" (Korn, 2015, p.12). In an interview, Larry Korn an American disciple of Fukuoka further described it as seeing the true appearance of nature, an experience of nature entering into him and of self and nature linked together as one (in Kang & Lydon, 2017). He saw nature as an interconnected whole which was perfect as it was. He thus started questioning the knowledge established through science. Separating nature into countless parts and relying on their relative perception and reasoning, humans could never reach an understanding of nature, and the misguided actions stemming from such a lacking understanding could only lead to the creation of more problems. From this, Fukuoka deducted that humanity knew nothing and should do nothing, as all they ever did was only wasted effort (Korn, 2015).

For him the mistakes of modern farming were lying in the Western philosophy supporting scientific agriculture. He pointed to this ideology as inadequate, misleading us about the way we should live and provide our essential needs of food, clothing and shelter. Expressing an urgent need for us to find another way of living based on communion with nature, he considered as our last hope the development of a natural way of farming based on the unity of humans and nature.

Fukuoka decided to evaluate his newly formed ideas by materialising them himself in the fields and returned to his family farm. Led by a conviction that "if the individual temporarily abandons human will and so allows himself to be guided by nature, nature will provide everything" (Fukuoka, 1978/2009, p.118), Fukuoka slowly took away all activities that he deemed unnecessary in farming to 'farm by the hand of nature'. Watching how plants grew in unmanaged land such as wild forests or abandoned fields, Fukuoka decided to stop ploughing and learnt to hold back weeds with mulch and ground cover of white clover. Through the restoration of plant diversity and therefore of the habitat for countless species of insects, Fukuoka observed a self-regulating effect of insect populations and banned the use of insecticides. He saw crops as "more than capable of growing by themselves" (Fukuoka, 1985, p.115), he thus created a system based on the minimisation of human intervention, that he referred to as 'do-nothing farming'.

Challenging the conventions at the basis of industrial agriculture, Fukuoka established four principles deriving from his observation and experience of nature in and out of the field: 1) no tilling of the land, 2) no fertiliser or prepared compost, 3) no weeding, 4) no pesticides or herbicides (Fukuoka, 1985). These principles and the approach of Fukuoka to farming influenced many Japanese citizens and farmers, inspiring a second generation of natural farmers to take on and develop his ideas.

Among this 'second generation' of natural farmers, Kawaguchi Yoshikazu and the method he developed is central to the spread and adoption of natural farming in South Korea. Kawaguchi Yoshikazu (1939 -) grew up on a farm that he inherited in 1955 and where he practised conventional farming for more than twenty years. His health deteriorating due to the agrochemicals he was using in his field, Kawaguchi decided to ban the use of oil-fuelled machines and chemicals altogether and adopt natural farming, as he had been deeply influenced by the reading of the 'The One Straw Revolution' written by Fukuoka. Having tried out Fukuoka's method for several years without success, he started developing his own method of growing rice and vegetables, observing the four principles that Fukuoka had outlined. The 'natural farming' that he developed, although being translated by the same terms in English – the term used is different in Japanese – differs in several ways with Fukuoka's system. However, the essence of his ideas is very much related to the philosophy of Fukuoka. Writing several books and other publications in the 1980s introducing his thoughts and practices. Kawaguchi gradually became known from the Japanese public. He started holding farm tours and workshops at his farm and founded *Akame Natural Farming School* (*Akame Shizennō Juku*) in Nara Prefecture, where hundreds of students learn natural farming every year. Around 60 natural farming schools were active throughout Japan in 2014 (Kawaguchi, 2014). Although the movement of urban dwellers returning to the countryside to start natural farming has been small, Graham (2019, p.29) sees it as a "promising effort towards reforming people's relationship with the environment" (Graham, 2019, p.29).

As Fukuoka, Kawaguchi's methods are based on the reduction of human interference within the natural environment. The revitalisation of the field ecosystem and inherent power of nature are thought of as the fundamental basis of good harvests (Fukuda, 2018). In accordance with Fukuoka's principles, he summarised the fundamental principles underlying his practices as: 1) no tilling, 2) no use of fertilisers, including compost and manure, 3) no agrochemicals, 4) not considering grasses[1] and insects as enemies (Arai & Kakamiyama, 2017). Although the principles are similar, the different understanding of Fukuoka and Kawaguchi gave rise to two distinct sets of practices and systems. For Kawaguchi, there is no defined methods for natural farming: there might be as many different methods as the number of people practising it.

Kawaguchi does not use direct seeding in the way Fukuoka scattered seeds of rice and vegetables using his very famous 'clay pellets'. He plants seeds in the soil at a deliberate location and believes that some human intervention is needed to help the plants in their infant stage when they are still vulnerable. He thus developed a way to manage the surrounding grass, cutting it down several times during the growth of the crop plants. The approach of Kawaguchi has been described as more practical by numerous current natural farming practitioners, as opposed to the multiple failures of people who had wished to recreate Fukuoka's system. This led to the adoption of his natural farming way by multiple farmers in Japan, and his book having been translated into Korean, his way of farming started slowly spreading there too.

1.3.3 Diffusion of natural farming to South Korea

In the international arena, the terms "Korean natural farming", especially well-known in the permaculture spheres, refers to the method developed by Cho Han-kyu (Cho, 2000). The underlying philosophy of this method is similar to the thoughts developed by Fukuoka: humans and earth are understood as a unity, emphasis on the origin of dichotomies as coming from the human mind, development of farming practices based on the observation of nature (Cho, 2016). However, the practice of this farming method is very different, as it focuses on the use of recipes based on 'Indigenous Micro-organisms' (IMO) to replace fertilisers and promote soil building and plant growth (see Reddy, 2011) while neglecting the other implications of natural farming philosophy.

However, 'natural farming' as I will study in this research is not this internationally known version of it, but the relatively unknown movement of natural farming in South Korea based on the philosophy of Fukuoka and the practical methods developed by Kawaguchi. Natural farming as framed by Fukuoka was spread through the translation of his work 'The One Straw Revolution' into Korean in 1996 by

[1] In this thesis, I will generally refer to the naturally-occuring herbaceous plants growing in the field as *grass* (풀, *pul*) and not *weeds* (잡초, *jabcho*) to reflect the conscious choice of words of natural farmers.

Choi Seong-hyeon an early practitioner of natural farming in South Korea. This same author also translated Kawaguchi's book 'Standing in the mysterious field' published in 2000. Recently, Korean natural farmers who adopted this way of farming were introduced along their Japanese counterparts in the documentary of Patrick Lydon and Kang Su-hee 'Final straw: food, earth, happiness' (see Kang & Lydon, 2014). Yet, this natural farming way is still marginal in the country where the movement could be described as being in an infancy stage.

1.3.4 Why natural farming?

The thoughts underlying natural farming are similar to the ideas introduced by the organic farming movement founders in several ways. Sir Albert Howard one of the initiators of the organic agriculture movement first described his system as 'Nature's farming' in his book 'An Agricultural Testament' published in 1940. He exposed a holistic understanding of the relationships between the soil, plants, animals, and humans within the field and proposed to approach problems arising – such as pests or diseases – in a holistic way. Pointing to the forest as an ideal example of a cycling natural system, he emphasised the need to learn from nature. However, differing in that way from natural farming, Howard expressed in his writing the belief that humanity "had every right to remake the landscape entirely to human benefits" (Korn, 2015, p.160). For Korn (2015), organic agriculture remains within the outlook of modern agriculture in the way that both first starts by thinking about how to make nature produce the most for humans' sake, even if the methods used are different. He also points at the large-scale farms having adopted the 'narrowest definition' of organic farming, cultivating monocrops, with huge machines and spraying organic fertilisers, as but another form of industrial agriculture. Natural farming originates in another understanding of the farmer and humans in the world and their relation to nature. This specific view of the world based on unity and coexistence supports practices differing greatly from mainstream organic farming systems: farmers do not till to control 'weeds', do not get rid of 'pests', do not use machines and import fertilising agents from the exterior of the farm system.

But what makes natural farming especially interesting is that this farming system is built on a clearly developed philosophy which acknowledges and pushes for reflective processes from the farmers exploring not only nature in their fields but also their relationship with living beings and their inner side. It is stressed that the understanding of the philosophy is needed prior to the development of such a system. Moreover, natural farming puts the search for reconnection between people and nature at the core of its philosophy and practice. In that way, Korn (2015) describes natural farming as the physical demonstration of a distinctive view on the world, based on the search for unity between humans and nature. Retrieving their appropriate place in the world, farmers go through a process of inner growth that Fukuoka places as the ultimate goal of natural farming (Korn, 1978/2015).

The approach of natural farming, differing from conventional or organic agriculture approaches could thus be an interesting and inspiring ingredient for future sustainable farming systems. According to Kaltoft (1999, p.40), "diverse practices and philosophies within the organic movement can be seen as an important source for the future development of environmentally sustainable kinds of agriculture". I would like to extend this statement to other forms of agriculture, such as natural farming. Natural farming has been developed in a so-called 'developed' country, facing similar environmental, social and health issues that other countries in the 'developed' world and could as such provide some keys in the movement towards an agriculture neither opposing nor harming nature.

1.4 Research objectives and questions

According to Davis (2014, p.50) "the sources of, consequences of, and solutions to environmental disaster are rooted in our views of our place in relation to nature". In a similar way, several authors have claimed that a change in the perception of the self in nature induced by the transition to a modern worldview, and the feeling of disconnection resulting from it were at the core of our current environmental distress (Davis, 2014; Sewall, 1995). Such arguments could be connected to the critique of the ideology of industrial agriculture, as seen in the beginning of this introduction. Cox (2014b) in examining the metaphysics on industrial agriculture points to the wrong depiction of self that industrial agriculture induces in the farmers: a self existing in opposition to and competition with nature. As such, farmers are diverted from seeing that through damaging the environment, they damage their "larger self". Natural farming, as developed by Fukuoka and Kawaguchi bridges the human and natural world in a search for unity. According to their view, by practising natural farming, the farmers develop an understanding of their place and their link to the more-than-human world. In this study, I wish to explore how this philosophy striving for the reconnection between humans and nature connects to the worldview of farmers, how they understand it and the role it has in directing their practices.

Indeed, several authors mentioned the dialectical link existing between the way we understand ourselves, the world, our relationship with it and practices. According to Merrill (1988, p.83), the understanding that we derive from our worldviews that she defines as the "largely unconscious ideas, attitudes and beliefs systems with which we structure, understand, and relate to the world around us" lead to the adoption of specific practices. Sanford (2011) points to the role of narratives in the adoption and development of practices. Stories give us the imaginative space in which we construct patterns for relations to the land, to other humans and to nonhuman living beings. She points to the reciprocal and dialectical process of moving between story and practice: a story shapes practice and practice dialectically influences and reinforces stories. As such my first research question focused on the link between farmer's understanding of the world as informed by natural farming philosophy and the development of practices adapted to their specific context:

1. How do farmers adopt and adapt the philosophical and agricultural principles of natural farming to develop locally-adapted practices?

Going beyond understandings, worldviews or narratives, research suggests that perception plays a central role in shaping practices Ecopsychologists have argued that focusing on the direct experience of nature and the world could enable the correction of "the instrumental rationality that has come to colonise our thinking and action" (Castrillón, 2014, p.3). Through inquiries into our lived experience and the exploration of our relationships with the earth and the beings populating it, we could rediscover ourselves as connected to "an intricate network of life-forms and natural forces" (Hebert, 2014, p.27). Emphasising the central role of the senses, Castrillón (2014, p.3) declares that "if we were to "come back to our senses" we would realize that we are indeed a-part-of-the-rest-of-nature, not apart from nature". In a similar way, Sewall (1995) considers perception as the door to a reconnection with the Earth. She argues that perception, consciousness and behaviour are fundamentally interdependent: "perceptual shifts alter consciousness, consciousness alters behaviour, and even unconscious learnings alter perception" (p.203). As such, I intended in my second research question to explore the role of perception, playing in between the inner – understanding, values, ethics – and outer - practice, interactions, physical system – expressions of farming. I explored how perception is informed by the philosophy of natural farming, how it is influenced by and influences practices, and how it participates in the development of a moral understanding of self in relation to the other:

2. How does the process of directly engaging with nonhuman nature in the fields through their senses affect the farmers' behaviour and moral understanding of their relation to the more than human world?

1.5 Thesis structure

In the second chapter, I will address practical considerations and the strategies I selected for answering my research questions. The third, fourth, fifth and sixth chapter of my thesis form the core of my analysis. In chapter 3, I will examine how farmers adopted and developed practices adapted to their own context, following their acceptance and understanding of natural farming philosophy as they encountered in their readings of Fukuoka and Kawaguchi's writings. I will continue in chapter 4 with a discussion of observation as understood by natural farmers and the experience of the field through the senses. Chapter 5 will be dedicated to the central aspect of relationships between the farmers and the nonhuman beings in their fields, mainly focusing on their relation to the crop plants. After a brief examination in chapter 6 of the process of inner growth resulting from the adoption of natural farming philosophy and practices, I will conclude on the contribution natural farming could bring to the articulation of a coherent and comprehensive philosophy of sustainable agriculture.

Chapter 2. Methodology

2.1 Research design

This present research is an exploratory study based on an inductive approach, aiming to discover patterns, themes and inter-relationships in observations and develop an explanation for these patterns (Bernard, 2006). I decided to adopt a flexible research design to allow adapting my inquiry as my understanding deepens and following new paths of inquiry as they emerged during the research process. I tried to conserve a holistic perspective on the processes I was exploring and not to consider separately the different aspects of this process. I thus tried considering farming practices, the role of the philosophy of natural farming, farmers' perception, their understanding of themselves in the world, their values and beliefs in a holistic way. I equally decided to focus on the inter-relationships between all these factors.

2.1.1 Grounded theory as a framework

This study is based on grounded theory, which was first developed by Glaser and Strauss in their work 'The discovery of grounded theory' (1967). Grounded theory starts with what can be observed on the ground, or in the world and to generate theory from those findings. As such, it does not follow the logico-deductive approach characterised by a strategy of verification of initially articulated hypotheses. At the beginning of my research I thus did not restrict my focus to verify a preconceived idea but on the contrary kept a wide area of inquiry to be narrowed down according to the early data collected during a first phase of participant observation.

I considered that the flexibility that this method allowed was adapted to my research inquiry as it allowed me to generate knowledge in the specific context of natural farming, which has been the focus of very few studies in Japan (see Fukuda, 2018; Graham, 2019; Kato, 2003) and no research to my knowledge in South Korea. Grounded theory enabled a continuous reflective process and reorientation of my inquiry, with data analysis occurring throughout the research process.

I used the constructivist view of grounded theory as outlined by Charmaz (2014), which "start[s] with the assumption that reality is multiple, processual, and constructed" (p.13). Charmaz points out to research acts as constructed: researchers are not value-free neutral observers, but they bring to the research their own preconceptions and values. Rather than searching for their erasure, constructivist grounded theory aims for the researchers to consider their position, privilege, perspective and interactions. In order to reflect on my own assumptions, actions and decisions, I kept a methodological and a reflection journal throughout my research journey.

2.1.2 Theoretical framework

Along my research journey, I discovered several fields of study and theories relevant to my research. As a result, several theoretical domains were brought in the research during and after field work. Each of these were selected as they offered relevant keys in the interpretation or resonated in some ways with my observations. I did not ground my research in a specific theory but rather I used existent theories as a source of inspiration, of "aha-moments" and association, of reflection and access to other perspectives (Thornberg, 2012). The concepts and theories I will use in my discussion come mainly from the field of ecopsychology and environmental philosophy, and to a lesser extent from anthropology and agroecology. In place of a conventional review of the literature, I opted for nesting existing theories directly within my data chapters to develop and illuminate my points.

Discovered thanks to the recommendation of one of my informants, I started exploring the discipline of ecopsychology which immediately gave some insights for the interpretation of my findings. Developed in the 1990s through the work of Theodore Roszak, Mary Gomes and Allen Kanner (see Gomes, Roszak, & Kanner, 1995; Roszak, 1993), ecopsychology calls for a reawakening, a re-establishment of the connection between humans and nature, and a recovery of a caring relationship with the natural world (Davis, 2014; Davis & Canty, 2013). Ecopsychologists examine how a broadening and deepening of our identity to include the other beings and the natural world could foster self-transcendence and self-realisation leading to a stage of psychological maturity supporting long-term environmental health (Davis, 2014; Davis & Canty, 2013). As such, this discipline appeared as a pertinent lens through which looking at the connection between the farmers and the living beings in their fields, and the influence of perception.

2.2 Farm selection and presentation

Prior to leaving for field work, potential farms were prospected through a digital newspaper and information search. In that way I identified eight natural farming practitioners, based on the following selection criteria: practising natural farming as framed by Fukuoka (1985) and Kawaguchi (2000), that is by following the four principles of no-till, no chemical inputs, no fertilisers and of not considering pests and grass as enemies. Contacting the farmers in advance proved unfeasible as no contact information was available online or due to the absence of answers of farmers contacted through emails. Meeting the first participants to my study during my first farm stay enabled me to contact other natural farmers by using their acquaintances network and as such led me to adopt a snowball sampling strategy.

In total, I met eleven natural farmers on seven farms in South Korea responding to the above-mentioned selection criteria and willing to participate to this study, as well as four Japanese

practitioners during a short trip to Japan in July 2019 (see Table 1). The selection of Korean and not Japanese natural farmers in my research was motivated by my ability to speak Korean, as direct access to the words of the farmer was essential to this research, and by the fact that natural farming in South Korea has not been the object of much research to my knowledge. However, South Korean natural farmers basing their practices on the writing of the Japanese natural farming founders, I hypothesised that this would not restrict me from connecting South Korean to their Japanese counterparts. To this purpose, I planned a two weeks research journey to Japan, in the area of Ōsaka, where I could meet Kawaguchi Yoshikazu, one of the current leading figures of the Japanese natural farming movements as well as several other farmers.

Table 1 : Farms visited in South Korea and Japan.

	Farm	Location	Production	Activities	Length of stay
SOUTH KOREA	FARM 1 Cha (M) & Choi (F)	Gyeonggi-do	Vegetables, (fruits)	Self-sufficiency Professional farming (*kureomi* market sales)	14 days (April) 4 days short term stay (July)
	FARM 2 Lee (M) & Lim (F)	Gangweon-do	Vegetables, rice, fruits	Self-sufficiency Earthschool	26 days long term stay (May) 5 days short term stay (July) 7 meeting days at the earthschool (April to September)
	FARM 3 Nam (M)	Gyeonggi-do	Vegetables, rice, fruits	Self-sufficiency Professional farming (*kureomi*)	12 days (April) 1 day (September)
	FARM 4 Shin (F) & Seo (M)	Jeollabuk-do	Vegetables, cosmetics	Self-sufficiency Professional farming (*kureomi*)	2 days
	FARM 5 Moon (M) & Min (F)	Chungcheongnam-do	Vegetables, rice	Self-sufficiency Professional farming (*kureomi*, *market sales*)	2 days
	FARM 6 Ryu (M)	Gyeonggi-do	Fruits, eggs, vegetables	Professional farming Experimental farming	1 day
	FARM 7 Byeon (F), Baek (M)	Gangweon-do	Vegetables	Self-sufficiency	1 day
JAPAN	JP FARM 1	Nara Prefecture	Vegetables, rice	Self-sufficiency farming	1 day
	JP FARM 2	Nara Prefecture	Vegetables, rice	Natural Farming School	1 day
	JP FARM 3	Nara Prefecture	Vegetables, rice, fruits	Self-sufficiency Professional farming (*kureomi*, direct sales)	1 day
	JP FARM 4	Nara Prefecture	Vegetables, rice	Self-sufficiency Professional farming (direct sales, sales through food shop)	1 day

In this thesis, I will refer to farms by giving them a number from 1 to 7 following the sequence in which I visited them. Farmers were equally given a code name to protect their identity by attributing them randomly widely used South Korean family names. For convenience, the code names given to farmers sharing a same household start with the same letter.

In the following sections, I will give a brief overview of the life stories of the farmers, their current situation and their farming systems. Farms 1,2,3 and 4 will be presented in a more detailed way, as I selected them as the main source of data for my discussion due to the better understanding I could reach through long-term field work. Farms 5, 6 and 7 are presented shortly subsequently. Some complementary information about the 'natural farming system' is provided at the end of this document (see Appendix C), with a more detailed description of the farming systems of farms 2 and 3 as examples.

2.2.1 Farm 1: Cha and Choi

The first farm I visited was the home of Cha and Choi, a young married couple in their thirties that I met through the WWOOFING Korea portal. After graduating from university, both started working in Seoul: Choi initially at a bank, later in a social organisation and Cha in an environmental non-governmental organisation. They started growing an interest in farming when living in the capital, experimenting with organic gardening on an allotment owned by Seoul City. While attending a course offered by the city for allotment gardeners, Choi and Cha reached a deeper insight on the problems currently raised by conventional farming, which augmented their already existing concerns about the environmental impacts of their current lifestyle and of South Korean society. Resigning from their work positions, they left for a six months travel to Europe mainly centred around organic farming and urban agriculture. The book "The One Straw Revolution" that they brought along on this trip became a turning point in their decision to walk the path of natural farming, as they perceived into it a possible alternative to their current environmental and societal concerns. Gaining courage from this philosophy, they experimented with the principles of natural farming on their allotment garden for one year and then decided to move to the countryside to start farming.

Having been farming for three years, Cha and Choi use most of their production for self-consumption following their self-sufficiency aspiration. However, desiring to make a livelihood out of the land, they started this year to sell their products directly to a small consumer base through a *kureomi* system[2]. In addition, they sell their production at a farmers' market of the capital city two to three times a month. Due to economic reasons, Choi is working part-time in a nearby organic food shop,

[2] Close to the functioning of a CSA, the farmer sends regularly by post (from once a week to once a month) an agreed quantity of vegetables to consumers who subscribed and paid beforehand.

thus providing most of the income. Despite being unable to understand the way of farming adopted by Cha and Choi, their neighbours seem to recognise their efforts and hard work. The farm is gaining recognition within the WWOOF Korea community and broader society. They are regularly invited by diverse organisations linked to agriculture or sustainability to present their way of farming to the broader audience.

Farming system: The fields cover an area of approximately 300 *pyeong*, equalling 0.1ha or around 990 m^2. The field is arranged in aligned beds of approximately 20cm in height, located directly to the side of the farm house (see Figure 2-1). Around sixty different crops are grown on the beds throughout the year. The farmers are practising intercropping to some extent and crop rotation on the beds. The walkways are covered by grass and function as a source of mulch for the beds and habitat for the life in the field. Edible herbaceous plants are an important component of the system and collected throughout the year. Fruit trees and bushes are planted on the edge of the land, bordering the next field. This year, they expanded their activity by starting cultivation of borrowed arable land in the slope of a near hill. Having hope of growing cotton for future experimentations with making threads and textiles, we planted there some cotton seeds in early April.

Figure 2-1: View of the fields of Cha and Choi in August, from a ground perspective (A) and from the roof of their house (B)

2.2.2 Farm 2: Lee and Lim

Graduating from university in Daoist philosophy, Lee started working in a research institute on religion and philosophy. Discovering and reading the book of Fukuoka 'The One Straw Revolution', Lee was moved and had a sudden experience of seeing the world differently. After this experience, Lee quit his job and absorbed himself in the translation of the writings of Fukuoka. Wanting to experience a self-sufficient lifestyle, not harming other living beings, he retired into an isolated house in the forest for five years to experience a different way of life, without electricity or phone. Subsequently living a few years abroad, he returned to the Korean mountains and lived by farming according to the principles of natural farming while harvesting wild edible plants. There, he spent

much time observing nature, recording his observations and experience in his writings “Living in the mountains” and “The mountain stories of Ivan the fool”. After living for three decades alone in the mountains, Lee currently lives in the countryside with his wife Lim, and daughter, farming on the land he inherited from his parents. Now in his sixties, Lee has more than thirty years of experience with natural farming.

Lee’s main occupation and source of income is writing. He wrote several books and translated several Japanese works. Lim works on the farm and is responsible for the household’s chores. Being one of the first natural farmers in South Korea and having translated the works of Fukuoka, Lee is quite famous in the natural farming and sustainable agriculture circle. A few years ago, he established the ‘Earthschool’, a regular meeting aiming at presenting and learning about natural farming. This year, around 30 participants gathered once every month on Lee’s farm to hear and discuss about natural farming philosophy, as well as learning the practices through direct experience in the field.

Farming system: The farming system has a size of approximately 3300 m^2 (or 0.33 ha) and comprises four distinct areas: the rice field, vegetable fields, the forest field and ‘heaven’s garden’ (see Figure 2.2, further details in Appendix C). Lee and Lim grow around sixty different crops throughout the year in lines on wide flat delimited areas in the vegetables fields (in opposition to the bed system present at Farm 1 and Farm 3). The rice field is free of water during the winter, water being added to the fields before transplanting the rice seedlings within the cut-down grasses.

Figure 2-2: Farmland of Lee and Lim, with the forest field at the forefront, in May (A) and rice field in September (B)

2.2.3 Farm 3: Nam

After having been dismissed from his job in his mid-forties, Nam started gardening as he was searching for an occupation to overcome the emotional turmoil provoked by this situation. Coming across a piece of writing introducing the thought and farming method of Kawaguchi, he started

growing an interest for natural farming. After having read the book 'Standing in the mysterious field' (Kawaguchi, 2000) five times in a row and studying basic farming practices, he decided to "go down" to the countryside taking his entire family along to start a natural farm on land borrowed from a friend. Currently in his sixties, Nam has been farming for fifteen years on this land that he later purchased from his friend.

Nam works currently around ten hours per day on the farm, his wife coming to help generally one to two days a week. The production is used for self-consumption and for sales as part of a *kureomi* scheme with a basis of twelve members. His wife, working in a nearby city, provides the largest share of the household income. During his early farming years, Nam faced numerous misunderstandings from the neighbouring inhabitants who "*thoughts he was crazy*" and conflicts with the owner of an adjacent field. Being socially non-included in the area over several years, he gradually gained recognition through his hard work and told me being now on good terms with local farmers. Being one of the earliest practitioners of natural farming in South Korea, he is recognised and known from all the other natural farmers I met. He appeared in the documentary 'Final Straw: food, earth, happiness' (Kang & Lydon, 2014).

Farming system: The farming system comprises two rice fields, two vegetable fields, an orchard with a greenhouse used to grow seedlings, a pond and a partially forested area previously used for the cultivation of wild medicinal plants (see Figure 2.3, and Appendix C for the illustrated description of the system). The vegetable fields are organised following a system of aligned permanent beds. Intercropping and mixed cropping are practised in the field, with one to six different crops planted on a same bed (in addition to the grass, that Nam considers as one of the elements of mixed cropping systems). Diverse types of grains are also planted on beds in this area: barley, millet, sorghum. The rice paddies are rented from a local farmer. Considering that withdrawing water from the paddies is destroying the established ecosystem, Nam's rice paddies are covered with water year-round. Rice is transplanted by hand in between the remnants of the previous year's harvest. In the orchard can be found tall apple trees planted in line years before. This year, Nam planted diverse other fruit trees planning to turn this area in a forest garden. Between these different units and along the paths, many areas are intentionally left uncultivated with little management to provide habitats for the numerous living beings populating the agroecosystem.

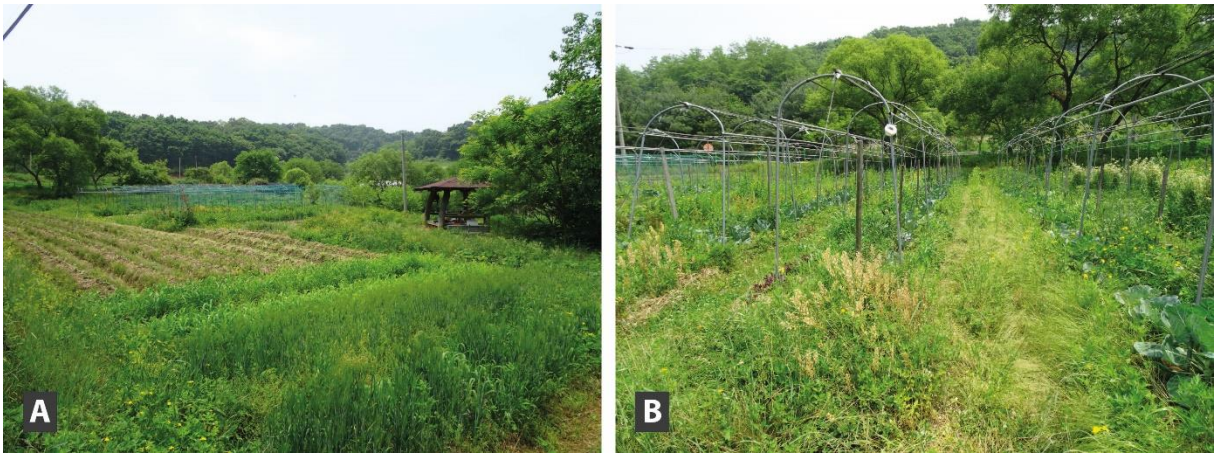

Figure 2-3: Nam's fields in late May. A) Barley and millet growing in the forefront, with beds of sweet potatoes on the left. B) Fields layout, based on aligned beds, with parallel metallic structures. Multiple crops are planted on the beds, grasses becoming an additional element of this mixed cropping.

2.2.4 Farm 4: Shin and Seo

Shin grew an interest in environmental issues in her twenties. She was awakened to the "proper way" of farming through talks within the religious world. Not thinking of farming herself at that time, she started academic studies in theology. During that period, she participated in a conference about peace, justice, and the way to protect the Creation. Thinking that protecting the Creation was the duty of a Christian in our current times, she started enquiring into the countryside thinking about how the church could help in the movement towards an agriculture restoring the land. Her interest growing, she happened on the book 'The One Straw Revolution' and 'The Natural Way of Farming", opening to her the world of Fukuoka.

Seo attended university in agronomy where he studied conventional farming. At that time, he learnt that to farm, farmers had to spray chemicals on the crops and till the land. Not attending classes regularly, he mainly participated in the students' demonstrations for democracy. Changing direction and continuing his studies in theology, he encountered there his future wife. She introduced him to the 'One Straw Revolution' and other natural farming related books. His initial interest in natural farming stemmed from his understanding of this farming system as less work-intensive (as natural farming is often described as 'do-nothing' farming by Fukuoka).

Both of them worked as pastors in the Presbyterian church before they decided to settle in the countryside and start farming. As pastors, they believed looking after their church's believers were not their sole duty: they also had the duty to care for the natural world. Currently in their fifties, Seo and Shin have been farming for more than ten years and derive their income from selling their production through a *kureomi* scheme.

Farming system: Buying land in a village deep in the mountains, Seo and Shin built there a straw-bale house. A first vegetable field is located directly next to this house, extending on the slope below. It is

composed of aligned vegetable beds, fruit trees and berry bushes (see Figure 2.4). Another smaller growing area is located behind the house, with a small greenhouse for growing seedlings. Previously cultivating rice organically with the help of an acquaintance in a field located lower in the valley, they recently turned this lower field into a vegetable-growing area.

Figure 2-4: House of Seo and Shin situated in their land (A), fields in August (B). The fields of Seo and Shin lay on the right side of the pictures, and background, contrasting with the tilled land of a neighbour.

2.2.5 Commonalities

There are several commonalities that I could observe in the stories of the farmers I interviewed. Prior to adopting natural farming and establishing a farm operation, most of them had only very limited knowledge and practical experience in agriculture. All the Korean farmers I met were originally residing in cities and decided to go back to the countryside when they experienced a conflict between modern society's model and their moral values and ideas about nature. Indeed, all farmers were conscious about the current environmental and social issues within their country and broader world. This acute environmental awareness and wish for a life conforming to their beliefs and values lead them to adopt the vision presented in the writings of Fukuoka and Kawaguchi. Asking about which idea from the book was especially important in their decision to start natural farming, most of the farmers mentioned the idea of "living in coexistence" with and living a life "not harming" nature. Moving to the countryside, many farmers reported having adopted a very different way of living, which could be described as a 'simple' or 'slow' life, involving less material consumption.

Regarding the farming systems, most of them are very small scale (less than 1ha), labour intensive, with a high diversity of cultivated crops, each in relatively small quantity. Work is done with hand tools, sometimes supplemented by the use of a grass trimmer. Most of the farmers are self-sufficiency oriented, selling the surplus produced through a *kureomi* system.

2.3 Field work: data collection and methods

Field work was carried out over the 2019 summer season, starting with a first observation phase from April to July, and a second data collection phase based on interviews mainly executed in August and September. Information was collected from different sources in order to raise the quality and validity of my research through triangulation. As such, I conducted participant observation on three farms, interviewed farmers, examined the available written sources of Korean and Japanese natural farming practitioners and collected diverse opinions of informants exterior to the natural farming world.

For ethical reasons, on arrival at each farm and before my interviews, I explained to the farmers what the purpose of my research, what participation entailed for them and their right to withdraw from it at any time. I thus received their informed consent in the form of a signed document.

2.3.1 Participant observation

The first phase of this research was based on participant observation, which entails "the relatively prolonged immersion of the observer in a social setting in which he or she seeks to observe the behaviour of members of that setting (group, organization, community, etc.) and to elicit the meanings they attribute to their environment and behaviour" (Bryman, 2012, p.273). The selection of this method was motivated by the need to: 1) have a look at the farmers' world from the inside; getting to know their routine, life stories, struggles; having access to their mind by capturing occurring thoughts, exploring the values and beliefs behind their actions, 2) learn about how farmers understand natural farming and practised it in the field, 3) observe how farmers interacts with non-human living beings in the field, 4) learn the expressions and vocabulary of natural farming and direct later interviews.

During participant observation on farms, I took on the role of an apprentice. When studying an agricultural practice, it appeared to me necessary to acquire some practical experience to further my understanding. Furthermore, according to Ingold (2000), skills and perception are intimately related. As such by fostering my skills, I also intended to cultivate my perception. Personal involvement with farming activities through my own senses equally appeared as a mean to get closer to the experience of nature-in-the-field of my informants.

Participant observation has mainly been carried out in the three farms visited between April and June (Farm 1,2 3 in Table 1), during two stays of two weeks and a one-month stay. On the farms, I participated to the daily life activities of the farmers, working with them between five and six hours a day, sharing their meals and joining on outings. The following months I went on several one or two-days short visits, where time was used mainly for the farm visit and the farmer(s) interview. At all time I was careful to carry with me a small notebook to write down passing thoughts of farmers,

events or some personal reflections. Some very valuable conversations were recorded as well with the farmer's consent. At the end of the day, I took from half an hour to an hour to concisely write down the day's events, what I had learnt and some impressions of the day. Whenever free time was allocated, I took the opportunity to take pictures and map out the fields.

From my arrival to my departure from the country, I participated once a month in the one-day class of the 'Earthschool', a regular meeting held at the farm of Lee and Lim (Farm 2) with the purpose of teaching the philosophy and techniques of natural farming to the participants. During these meetings, I had the opportunity to meet current and former participants and enquire about their motivations to learn natural farming as well as how they applied this philosophy within their life.

Throughout my research and especially during the second phase as I was living in the capital city, I took the opportunity to attend several events organised around food-related themes. I visited several farmer markets, seed markets, volunteering in the organic farmers' and local handcraft market and toured the spring edible plants festival, Seoul vegan festival and the appropriate technology festival. Participation to these events allowed me to deepen my perspective on sustainability, alternative food networks, situation and interest about organic farming within the country, thus acquiring some background knowledge about Korean agriculture and society.

2.3.2 Interviews

Semi-structured interviews were conducted with the eleven farmers I met on the seven South Korean farms visited. The duration of these interviews varied between 60 and 140 minutes, depending mainly on my prior knowledge of the farmers (in the case of farm 1, 2 and 3 where long stays enabled knowledge gathering in the early stage) and their availability (in the case of farm 4). The interviews were conducted on the farms, with both farmers present (except for farms 3 and 5 were there was mainly only one member in the household involved in farming activities) while being careful to record both answers for each question. Being able to listen to the answer of the other could influence their own answer, but I considered that this would be an acceptable risk as interviewing them together often enabled me to record divergencies in the perception and understanding of both farmers and observe internal dynamics within the farm. Interviews were recorded after receiving the informed consent from the farmers.

I opted for semi-structured interviews as it proves flexible enough to follow the emergence of new leads, while keeping a structure of topics which needs to be explored (Bernard, 2006). Prior to the interviews, I prepared an interview guide, each time slightly differing due to the former knowledge gathered about each farm, with a list of questions and topics to be enquired about in a specific order. These interviews aimed to be an entry point in the mindset of the farmers, asking them about values

and beliefs that are generally not expressed verbally in everyday living. As such, the main topics of the interviews were the following:

- Life story and reasons behind the choice to adopt natural farming
- Evolution of their understanding of natural farming
- Perception of nature in the field; relationship to crops, grasses, insects
- Learning from the observation of nature in the fields
- Experiences of wonder, amazement in their interactions with nature
- Influence of natural farming thoughts on their way of life
- Possible role of natural farming in the wider society

Short unstructured interviews were conducted in Japan with the help of two volunteering interpreters on similar topics. The aim was to acquire a basic understanding of the situation of natural farming in Japan (on the ground, completing what I read in the books) and to compare the thoughts of Japanese natural farmers with their South Korean counterparts.

2.3.3 Secondary data

I used as secondary data the books written by several Japanese natural farmers in order to receive from them some insights on what I observed and confirm some ideas that arose from my data. In the same way, the interviews of natural farmers gathered and published by Kang and Lydon (2017) in their book 'In this place without anxiety and competition' were a precious help to make up for the lack of previous research to compare with and discuss my findings.

2.4 Data analysis

I transcribed wholly the recorded semi-structured interviews into Korean, later translating into English only the significant units to be quoted in my thesis[3]. The transcripts and field notes were then coded in two phases following the grounded theory methodology presented in Charmaz (2014). A first phase of *initial coding* was accomplished to draw my initial impressions of the data through line by line coding of the whole transcript. In the second phase of *focused coding*, I selected the most significant and recurrently occurring codes related to my research questions or recoded some similar codes under a

[3] *Notes on translation*: all translations to English from the interview transcripts and books from practitioners published in Korean have been done by myself. Therefore, while I tried my best to keep the meaning as it was in the original, I cannot guarantee the full match of the translation and originals. The English translated expressions should therefore not be used (choice of wording) as basis for analysis, rather look at the content of the translated units. Unfortunately, some expressions and quotations lost some of their meaning in the translation as some Korean words do not have any counterparts in English vocabulary.

wider banner. Coding was conducted to compile and organise the data as data was collected throughout the whole research. Early coding of my field notes helped frame my interview questions. Coding of my first interviews helped reframe the following interviews.

Focused codes were then developed into categories, by selecting some prevailing codes or gathering several codes under a wider unit. I constructed many categories as I reviewed my data, such as:

- Establishing connection with nonhuman world
- Building intimate connection
- Discovering life
- Cultivating the ability to 'see'
- Awakening, finding change within oneself
- Living the answer
- Transcending the mould: looking from another point of view
- Challenging modernity: farming as an act of resistance
- Feeling the wonder of a living nature
- Accepting grasses for coexistence
- Developing a practice-related moral understanding
- …

These categories were developed throughout field work, from the early to the late phases. They usually originated in a sudden insight occurring in the conversation with a farmer, going through my transcripts, or from commonalities I noticed in farmers' discourses. I followed the perspective of Glaser and Strauss (1967) seeing categories as coming up in a one time 'aha moment' of seeing a distinct pattern in the data and their indication that a single case can indicate a general category or property. The categories I created were then explored by reviewing the data I collected at each farm and by integrating related questions in the interviews in the second phase of my research.

I selected from these early categories the ones that were relevant to the discussion of my research questions as offering some insights in the processes under study. Conforming to the advice of Charmaz (2014), I left them in gerund form to prompt thinking about actions and processes rather than static topics. Through the exploration of the relation between my categories, I developed tentative theoretical framework on the basis of my interpretation of the process at the centre of my research question. However, as I could not reach saturation of the categories and explore negative cases, this framework should be taken with caution (see 7.1 Limitations).

Chapter 3: Finding one's own natural farming way

Natural farming is more than a specific farming system, it is a philosophy and a way of looking and living in the world (Korn, in Kang & Lydon, 2014). In this chapter, I will examine how farmers adopt and develop practices following their acceptance and understanding of natural farming philosophy as they encountered in their readings of Fukuoka and Kawaguchi's writings. I will base this discussion on practical examples gathered under two broad aspects of natural farming philosophy: nature as a perfect, self-regulating entity and 'not seeing the grasses and insects as enemy'. In the last part I will shortly explore how developing practices and working in the fields is accompanied by continuous tensions between the values, beliefs of the farmers and practical needs dictated by their situation, and how it leads to reconsidering their ethical principles.

3.1 The awakening: entry into natural farming

In their writings, Fukuoka and Kawaguchi point to an experience of 'awakening' which results in accepting and adopting the vision of the world presented in natural farming philosophy. As mentioned in the introduction to natural farming, Fukuoka developed his methods on a sudden realisation, or vision, that came to him as he was still a researcher (Korn, in Kang & Lydon, 2014). He experienced a profound interconnectedness linking him to the earth and the living beings dwelling in it. On the basis of this experience, he decided to start farming materialising and explore this different world that presented itself to him. For Kawaguchi (2000), 'awakening' refers to the process of opening one's eyes from the illusion and seeing the truth. His understanding is close to the experience of 'awakening' in Zen Buddhism: waking up from the dream and becoming truly oneself, going back to an original and formless self (Shore, 2003).

Such an experience is at the very beginning of the natural farming way: Kawaguchi declares that a change in practices needs a change in ideas; a change in ideas demands "eyes that can see the truth of the living world" and an 'awakening' that enables to understand it correctly (Tsuji & Kawaguchi, 2015, p.154). Similar experiences revealed themselves through the words of the farmers I interviewed, although in different forms and intensity. Being a very personal experience, it came either as a realisation, a sudden change in perspective or as a more spiritual experience of a new world, a vision.

Choi was first struck by the idea of coexistence that she discovered while reading the book 'The one Straw Revolution': "*When I first read the book, what was different from the other existing farming methods was that it was a method where the grass and the insects were also living together. When working in our vegetable garden we always had to catch the insects and pull out the grass, but that*

was not it: we could also live together with them."[4] She was appealed by the description of a farming method at peace with insects and grass, including them, not declaring war to them.

The same aspect of natural farming resonated within Nam's life situation at that time. While feeling hurt and angry from a dismission from his workplace, Nam happened on the writings of Kawaguchi and was struck by the idea of "coexisting with the insects and grass". He realised that he had never truly experienced coexistence within his work place and lifestyle as he had grown used to competition: "*This one sentence of that book fitted so well with the situation I was facing, being hurt and angry. I thought I had to try once in my life, coexisting. Even if I had not managed to coexist with people, I wished I would be able to discover the meaning of coexistence through farming.*" Reading the book five times, this way of farming slowly took shape into his mind.

'Awakening' means for Lee "*seeing the truth through the removal of the dust covering our eyes*" and is accessible to anybody. The first time he unexpectedly happened on "*the world of natural farming*" through the reading of the book "The One Straw Revolution" he felt "*a deep joy arising within himself*" and experienced a sudden change in perspective: "*Something special happened to me. It lasted two to three hours. I was sitting alone and experienced seeing the world totally differently. A new vision came to me. It was a world where not humans but nature, the Earth was at the centre.*" This experience was a deciding event in his decision to start natural farming. He immediately stopped his ongoing activities and decided to translate Fukuoka's "The Natural Way of Farming" into Korean. As soon as he finished this work, he went back to the countryside and started farming, for thirty years until today. Having been three times to the farm of Fukuoka, he speaks gratefully about this experience, as enabling him to see "*the path that humanity has to walk*" and "*the path that enables us to return to nature*". The scenery of Fukuoka's farm is still deeply rooted in his mind: "*His farm later stayed in my memory as a sacred book* [Buddhist scriptures]. *Like a Buddhist monk or an ascetic, from time to time, I take out this sacred book to read and spend time trying to understand its meaning*".

Most of them already possessed an acute awareness regarding environmental issues and their causes and were searching for a different way of living not conflicting with their values. The vision of the world presented to them through the reading of the writings of Fukuoka and Kawaguchi, which were their main access to the natural farming world, entered into resonance with their own beliefs. As Choi mentioned, there is no empirical basis or 'scientific' proof provided in these books to support their content: adopting their vision and ontological grounds is a matter of trust, of "*believing it or not*".

[4] The quotations coming from the interviews with the farmers, and some expressions that I caught during conversations will be written in italic, in order to inform the reader that these were the words as used by the farmers.

Having accepted the 'truth' as conveyed by natural farming, the farmers then set to establish a farming system based on these agricultural and metaphysical principles.

3.2 Developing practices: from an 'ideal' to a contextual natural farming

Walking on the natural farming path starts by understanding the philosophy sustaining it before learning the way to practise it. This was explained to us by Lee early in our *Earthschool* meetings: in order to do natural farming and enjoy working in the field, one need to have fully understood and accepted its philosophy. In that way, a strong understanding of the philosophy is needed for providing a purpose to the farmers of what they are striving for, as well as a general direction in which to orient their farming system and lifestyle.

In a conversation around the definition of natural farming, Cha characterised it as the "*process of finding a way of farming that does not harm nature*", rather than seeing it as a farming method. This points to the currently vague frame of natural farming: it is not a fixed method encompassing a definite set of already established practices that the farmer could simply apply to his field. The only practical guideline provided to farmers are the four principles that they are free to implement as they see it on their land, giving rise to different practices, although sharing much similarities.

Natural farming philosophy and principles provide a direction and some tools in going towards it. The loose frame enables farmers to be creative, finding their own solutions adapted to their environmental and life context thus creating locally and context-adapted practices. This is shown in the approach of natural farming of Shin: setting as a goal the search for a farming way preserving a healthy nature and based on a unity of humans and nature, she then underlined the need for continuously studying, reflecting and observing for developing such a method.

Starting natural farming by applying techniques from the books, the farmers soon experience the differences of context and resulting impossibility to carry out these methods as their founder did. Lee referred to Fukuoka's system as the "*ideal way of farming*" but recognised its implementation as unfeasible in the Korean context. Having tried the winter barley and summer rice cultivation method of Fukuoka, he quickly gave up as the cold climate and soil were too different from the ones of the warm areas of Japan where it was developed. Not only are conditions different between distinct climatic regions, but they also vary within a same country and within a same field. As such each technique used by the farmer must be carefully developed to match these specific conditions.

In the following pages, I will present two examples linking the farmers' understanding of natural farming philosophy to their practices. I will explore how ontological beliefs related to nature and the place of humans within it manifests in practices, how farmers develop and adapt practices based on their understanding of the link between nature and humans. My first example will be based on the idea

that ‘nature is whole and perfect’ and that humans cannot understand it in all its complexity, giving rise to practices taking into account human’s incomplete knowledge and entrusting the growth of crop plants to nature. The second will explore the influence of the idea of ‘coexistence’ through the farmer’s perspective and management of grasses.

3.2.1 Nature is perfect: Reducing human interference and attending to the plants

In Korean, the word 자연 (*jayeon*) translated in English into “nature”, is written in Chinese characters as 自然[5]. This term can be broken into 自 meaning “by itself/by one’s own accord” and 然 meaning “thus it does”, the entire definition being “(becoming) this way by itself”[6] (dict.naver.com, 2019, own translation). This understanding of nature as arising by itself emerged in my interview with Shin, mentioning that “*the expression “nature” itself means “by itself”*, followed by Seo recalling his amazement for grasses coming up each year “*without anyone having planted them*”. In the field, the farmers experience nature as growing on its own accord. Through the skill of observation, the farmers comprehend that living beings around them arise by themselves, even without human involvement. The place and role of the farmer in the field changes: the farmers do not see themselves as *growing* or *making* their production but as *assisting* the growth of the crop plants. This difference in perspective is closely tied to the adherence to farming practices differing from conventional farming: if we could say that the farmer in the conventional model possess an active role at the centre of production (action-centred; he tills the land, fertilise, protect the crops from pests and diseases) the natural farmer’s role is more ‘passive’, stemming from the principle of “non-action” outlined by Fukuoka.

In such a way, natural farming is based on the use of naturally occurring processes. Leaving an anthropocentric perspective, Shin declares: “*The history of tilling is very ancient, because of this, as an opposing concept, the concept of no-till appeared. […] We say no-till when we do not till the land, but in a healthy nature, numerous living beings are tilling the soil. It is just that it is not a heavy machine tilling.*” According to her speaking of ‘no-till’ is erroneous and rests on an understanding of the field centred around humans. For Lee, natural farming is possible only when humans understand that nature is greater than the methods human intelligence can conceive, the four principles of natural farming being merely an expression of this belief. “*In natural farming, one does not think of nature as an incomplete being which needs to be remodelled and improved, but as a perfect and flawless being from which to learn and ultimately become one with.*” As such, the tilling and the fertilisation of the land, the prevention of pests and diseases should be entrusted to nature. Or more precisely: “*Tilling is entrusted to the numerous small animals and microorganisms. Fertilisation is entrusted to the grass.*

[5] Chinese characters were used in Korea until the 19th century when Korean alphabet (*hangeul*) became widespread. Many words used in Korean have Chinese roots.

Pests and diseases are entrusted to the food chain. Weeding is entrusted to the grass following the 이초제초 [以草制草, which could be translated as "controlling grass with grass"] *principle*."

Nam mentioned that in conventional agriculture, farmers could grow crops in inadequate situations through the use of tillage, fertilisers and pesticides, thus adapting the environment to the crops. On the contrary, in natural farming because the farmers cannot use any of those methods, the focus is placed on planting crops in the right environment by enabling soil building and the reestablishment of a natural ecosystem. Having demarcated vegetable beds, farmers leave grasses to grow on them and repeatedly cut them down to cover the soil. This enables the recovery of the "*hidden circle*", as Lee named it, the endless process of change based on life and death. Organic matter accumulates on the soil surface and creates a thick humus layer, that Kawaguchi calls "*the floor of death*" (Tsuji & Kawaguchi, 2015). Through the continuous births and deaths of grasses, insects, small animals and soil microorganisms, the soil becomes richer thus discarding the need for fertiliser. Through the reestablishment of food chains and of a functional ecosystem, the agroecosystem becomes self-regulating diminishing the incidence of pests and disease outbreaks.

Attending to the plant

On the first day of the Earthschool, Lee introduced us to the expression 시중 들다 (*shijung deulda*) meaning "running the errands". This expression translates the idea that farmers are serving the plants, which are the protagonists in their own growth. As Cha said, "*we are not the owners, nor the main character*." He pursued by mentioning that although farmers commonly think they are the ones growing crops it is actually nature which grows them, humans only assisting when needed. However, all farmers acknowledged the "artificial side" of farming, consisting of planting intentionally a plant in an environment potentially not suited for its growth. To rectify this initial human-induced situation, the farmer needs to help the young plants establish themselves, making of the early stage of plant growth the principal stage of human action and demanding the most attention from the farmer.

This can be seen in the way Nam envisions the process of plant growth and his practices related to helping the establishment of young plants. While explaining to me how he was helping young tomato and chili plants transplanted on the vegetable beds a few weeks ago, Nam compared at multiple times the stage of their growth to the stage of human growth. The beds had been previously planted with broccoli, which were already in their "*adult stage*". At that stage, there was no need for him to help them by cutting down the surrounding grass as adult plants possess a competition ability high enough to ensure their survival. But the young "*middle school student stage*" tomato and chili plants, despite "*being at an age when they have much energy and grow fast*", were not yet able to compete with the surrounding herbaceous "adults". This led him to develop a practice that he referred to as 포기 정리, *pogi jeongri* or "plant arrangement" that he associated to the Korean saying of "*giving tonic to the young (children)"* to foster their growth into healthy and strong individuals. It consisted in: 1) cutting

low the grass directly surrounding the plant, 2) collapsing the mole tunnels in the soil directly under the plant in order to prevent negative influence on root growth, 3) giving some urine collected from home diluted in water. Appearing as going opposite to the "no-fertiliser" principle of natural farming, Nam explains this last practice as a necessary part for boosting plant growth at its early stage. Through his experience, Nam observed that the start of growth in natural farming is particularly slow, as the crop plants need to find their own nutrients by themselves in the soil. Therefore, he identified a period generally one or two weeks after transplanting seedlings where plants especially made the most of a one-time urine application. The crop growing into "adult stage", the farmers' range of action decreases, cutting down the grass one or two more times and then leaving the fate of the plant in the hand of nature, by letting the plant compete and coexist within the surrounding field ecosystem.

The reconciliation of farming, which is a human activity, and nature is an ongoing matter of reflection for most of the farmers, wondering what would be a true 'natural farming' as this term first appears as an antithesis. Having thought for multiple years about this matter, Nam arrived at the following conclusion: "*In my opinion farming as a human activity and nature meet when the plant becomes independent. If we think in human terms, until the point where adolescents become independent, through an artificial process I chose the place where* [the plant] *grows, I help so it can get a slight advantage in the competition with the surroundings, gives it water if needed. When it is safely established and become competitive enough, it can compete, coexist, get along with the grass and coexist with insects, until this phase.*" This quote reflects the understanding of the role attributed to the farmer and human intervention in the growth process of crops of most of the farmers I met.

Taking into account incomplete human knowledge: leaving wild areas as 'buffer'

Although natural farming comports the adjective 'natural', the fields are not a 'wild' ecosystem but a place of human dwelling, a space co-created by humans and the other living beings residing in it. Nam mentioned that although generally not knowing how, his actions would certainly be hindering the flow of nature. As such, he intentionally leaves untouched areas in his fields, for living beings to occupy as they want. Trees and grass patches are spread through the fields to provide habitat for the 'wildlife'. Nam sees many benefits in leaving such patches in the fields, functioning as buffers to make up for the disturbance he is causing within the ecosystem and to provide natural functions that his knowledge cannot comprehend. For the same reason, he limits as much as possible the number of times he is cutting the grasses surrounding the crops, thinking that they play an essential role in the agroecosystem.

The forest field: the highest form of natural farming

For many natural farmers, the forest is the most perfect expression of a natural functional ecosystem, cycling and sustainable over time. This thought was present in Fukuoka's natural farming, appearing in his orchard gathering multiple fruit and nut trees, vegetables, cover crops, flowers and wild grasses. As a student of Fukuoka, Lee shares the same belief about the supremacy of a forest system: the 'forest field' would be the stage succeeding the natural farming vegetable field as it is seen as a system more harmonious between humans and nature. For Lee, rather than a field belonging to humans only, it is the "*field of heaven*". There are no conflicts, humans live in amity with insects, at peace with the grasses. The air and rain water passing through the system are clear.

Lee calls his orchard the 'forest field' to harmonise the two concepts of 'forest' and 'field'. He listed several benefits in having trees in the fields: 1) a beautiful view, 2) long life and need less care, 3) gives shade and freshen the air in the summer, 4) bear fruits, 5) increase the diversity of insects in the fields and attract birds. In that way, Lee is sensitive to and considers the multifunctionality of trees, revealing numerous functions besides food production. Some trees are naturally occurring – "*planted by the heavens"* – as chestnut trees, mulberries and willow. He planted diverse fruit and nut trees, among which plum, apple, pear, cherry and walnut trees. In between the trees are left wide spaces, where grows mainly edible perennial grasses, some intentionally planted, some naturally occurring. As for vegetables, they need to be looked after in their early growth stage and then left to grow within the grass.

Similar concepts were mentioned by most of the farmers I met, who had or planned to implement a wooded component to their farming system. Nam developed his own version of the 'forest garden' that he discovered in permaculture (see 4.1.2, Appendix C), Choi was studying about the food forest, Ryu had established a broad orchard on the slope of a mountain, Moon and Min had planted several fruit trees over their fields.

3.2.2 Inviting the weeds in the field: coexistence, grass management and changing perspectives

Throughout my field work and the reading of the writings of Korean or Japanese natural farmers, grass management quickly appeared as a central aspect of natural farming. The way farmers thought of grass and acted towards it appeared to me as one of the main characteristics distinguishing natural farmers from other farmers adhering to other alternative farming traditions.

As mentioned previously (see 3.1), the principle of "not seeing the grass and insects as enemies" and the coexistence-based way of living in the world accompanying it was a central factor in the adoption of natural farming mentioned by most of the farmers I met. Guided by the philosophical basis of natural farming, the aspiring farmers experienced a change in perspective in their perception of the

grass, especially explicit in the way farmers referred to the herbaceous plants they met in the field as 풀 'grass' and not 잡초 'weeds' as they are commonly called by other Korean farmers.

In the common language used by farmers and farming experts across most farming traditions, the term "weed" refers to "plants occurring in situations where they are unwanted" (Håkansson, 2003, p.1) and is generally understood as limited to herbaceous plants. As "the ancient enemy" of agriculture and farmers, weeds have been the subject of desired elimination and pushed back from arable fields through physical, chemicals and biological methods developed through the history of agriculture. In the last decades, agronomic research has shown weeds as being a major cause of yield loss (E. C. Oerke, 2006) through interspecific competition, parasitism and allelopathy (Froud-Williams, 2017) and weed control has been frequently described as a principal pest management challenge by farmers (Conley, Krupke, Shaner, & Santini, 2007).

In the same perspective, in his introduction to the work of Kawaguchi, Lee (2017, p.5) describes farming as a "constant war against weeds", where farmers possess a "mind resolved to eradicate weeds" in order to achieve higher productivity. From this perspective, the problem of the toxicity of the used products on human and environmental health is not given much consideration. However, in ecological farming where value is placed on living in harmony with nature based on 'the realisation of the value of life', such methods are no longer acceptable. In that way, natural farming calls for a change in perspective: throughout agricultural history, humans never managed to control and eradicate the weeds in a way that is neither noxious to humans or to ecosystem health. Therefore, natural farming suggests giving up the fight, "ceasing to oppose nature" and learning to work with the weeds. Kawaguchi (2017) declares that there are no such things as "weeds" or "pest insects" in nature, this categorisation deriving from humans' perception of "convenience", their understanding and utility. The field is not seen as a *human space*, but as an *ecosystem* of which humans, the farmers, are part of and need to coexist with the numerous life forms present.

Grass management practices

In natural farming, crops are planted within the grass, either through direct seeding or through transplanting seedlings (see Figure 3-1). The area where the seeds or seedling are planted is carefully prepared, through cutting the grass at ground level and removing coarse roots *only* on the very restricted location where the seeds or seedlings will be established (for an illustrated explanation of the planting process, see Appendix C). Depending on the characteristics of the crop and on the grass condition, the farmer uncovers the soil on one-palm-wide round areas, continuously on a straight line or the entirety of the planting area. After seeding, the farmer gathers the grass that was removed, cut it into smaller parts and spread it as mulch covering the seeds. In the case of seedlings, the mulch is applied around the base of the plant.

Figure 3-1: Young plants growing within the mulch and grasses: A) Peas, B) Spinach, and C) White radish.

While the crop is growing, the surrounding grass needs to be managed to help the young plant establish itself in its youthful phase. How the grass should be cut, at what time depends on the season, the characteristics of the crop plants and work capacity of the farmers. Through careful observation and direct experience, the farmers learn about the optimal time for grass-cutting and develop the specific practices adapted to their own conditions, resulting in slight differences in the grass management system under use at each farm I visited. Generally, when the crops were planted on lines, farmers tended to cut grass only on one side of the row in order to leave unscathed the other side to provide shelter for the insects and small animals. According to them, cutting too much grass at once would cause a major disturbance unsettling the system's balance, which would result in adverse effects to plant growth, as a leaf-eating insect invasion. As such, farmers always tried to limit their actions to a strict necessity of what *had to* be done. As a rule, farmers estimated that grass had to be cut when it had grown taller than the crops. Methods of grass management tended to change with the season: during my first stay at farm 1, the slow growth rate and lower size of spring grass enabled the farmers to cut it on one side only and the other side after a few weeks. However, when I came back in the middle of summer, the farmers told me they had given up on that approach and started to cut the grass on both sides at the same time on the growing area, the summer grass growth rate exceeding their work capacity. When the grass has been cut, it is laid down on the same area as mulch covering the soil. It also functions as a preventive measure against the regrowth of the grass directly surrounding the crops, diminishing the vitality of the regrowth struggling to go through the cover.

Discovering grass and its importance in the system

First accepted as an indivisible principle of natural farming, through practice farmers become fully aware of the crucial role that grasses play in natural farming. This is expressed in the statement of Moon about his current view on grass: "*Before, I could only see grass as an obstacle to farming, now I see them as the friend of farming. Without the grass, the field looks like a desert. When the grass*

grows thick and cover the land, the land softens and the next year one can farm even without tilling the land. Until now, people have wasted too much time and effort of getting rid of the grass. I realised now that actively growing grass was a good thing for the health of the farmer and the land." Placing the grasses at the centre of their practice, farmers identify grasses as 'precious beings'. Indeed, many farmers pointed to the impossibility of practising natural farming on a field deprived of grasses. In a system opposing the use of fertilisers imported from the outside, grass is considered as "*the key to no-input*". In that way, keeping grasses in the field is not simply sourced in an ideal of coexistence, but equally originates in the perceived practical benefits brought by the grass that farmers observe in the fields. Nam revealed to me being "*more afraid of grass growing not enough rather than growing too much*". Intentionally growing grass between vegetable beds, Nam saw grass as a source of nutrition for the plants and the soil, a soil cover preventing water evaporation from the soil surface (See Figure 3-2). In a similar way Choi, Lee, Seo, Moon and most farmers identified several ecological benefits linked to the presence of grass in the field: 1) a living or dried grass cover preserve soil moisture, 2) by providing another source of nutrition, grasses diminish the "attack" of herbivorous insects against the crops, 3) the mulch and roots of grass increases soil organic matter, foster soil life and nutrient cycling, 4) regulation of soil temperature, 5) fosters biodiversity in the field and more life activity [7].

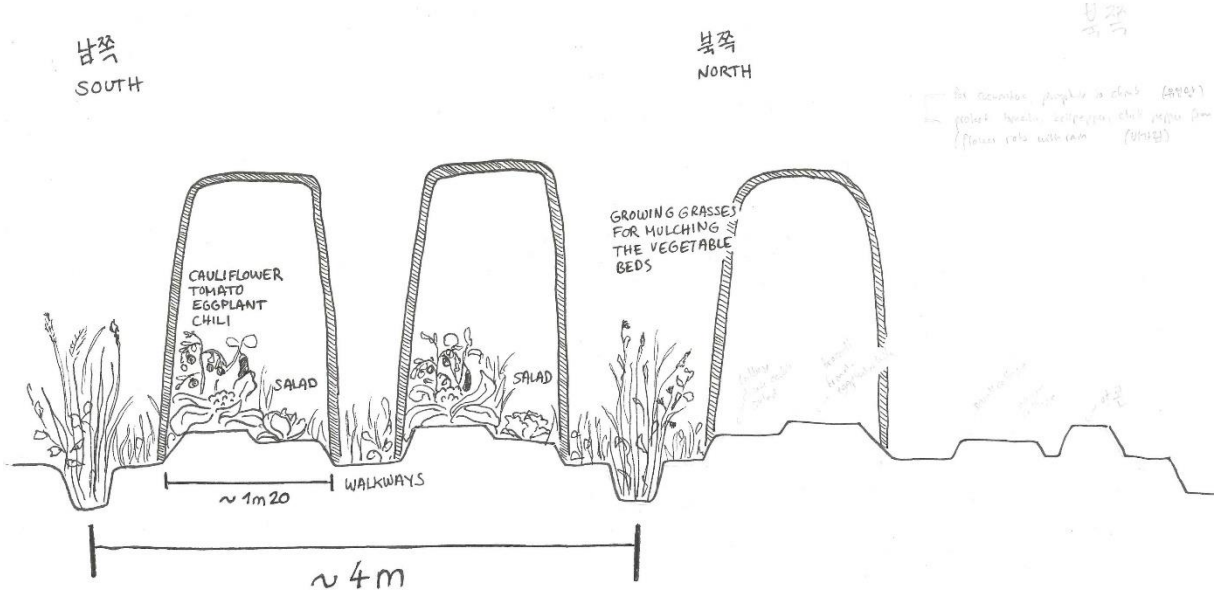

Figure 3.2: Transect in Nam's vegetables fields. Nam created a complex bed system taking into account the exposition of the plans, the need for grasses for mulch, the water need of the plants. Grasses are intentionally grown in the trenches to provide mulch for the vegetable beds.

Abiding to the principles of natural farming, farmers decide to accept the presence of grass in the field. Through the observation of their life patterns, the farmers get to know the different grasses and their role within the agroecosystem. For instance, when I first visited the farm of Lee and Lim, the rice

[7] Although very interesting, the scientific evaluation of the veracity of the claims concerning the farmers' perceived ecological benefits of grasses will not be mentioned as it is out of the scope of this thesis.

paddy was covered with a grass, *Alopercus aequalis* (see Figure 3-3). When I asked about it, Lim told me that they felt very grateful to this grass as it was covering the whole rice field in early spring thus preventing the establishment of other grasses. Moreover, when the time for transplanting the rice seedlings approached this grass would naturally be at the end of its life cycle and thus make way for the rice plants.

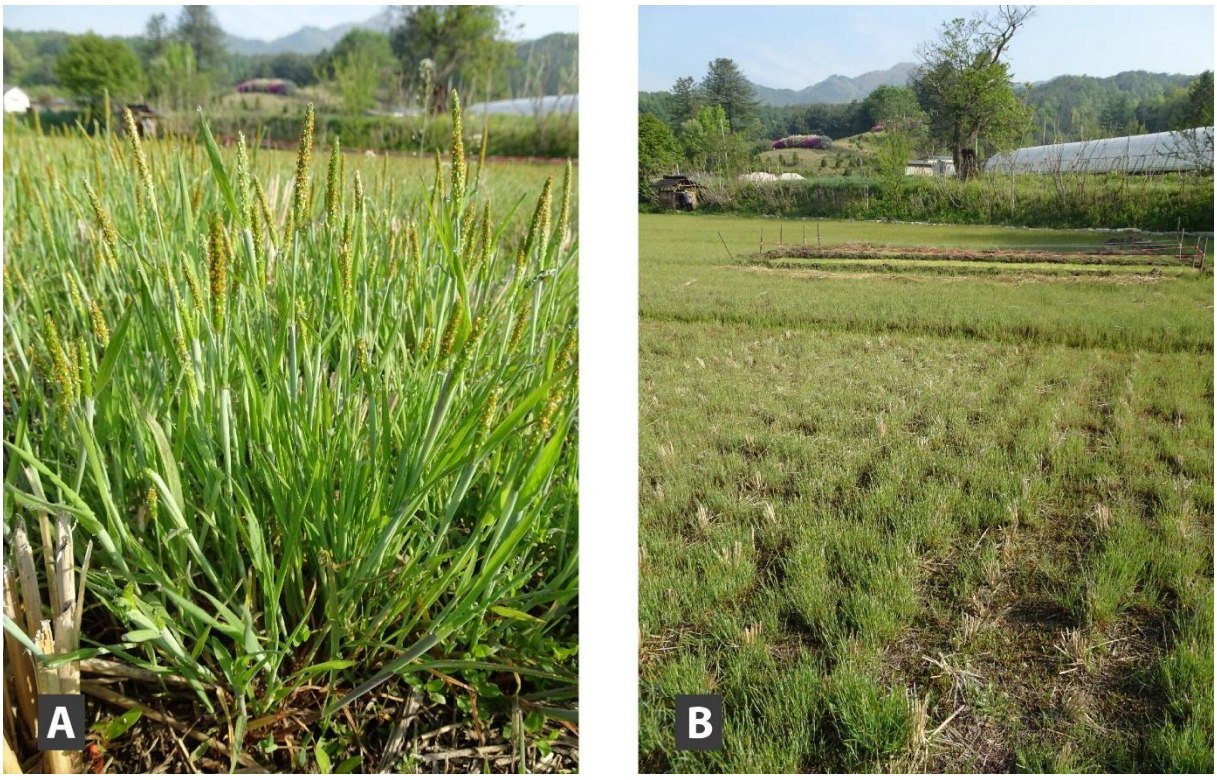

Figure 3-3: A) Alopercus aequalis, an annual Poaceae, naturally occurring in the rice field of Farm 2. B) The same plant covering the rice field, with a height of about 20-30cm.

The grass growing in the field is not only a necessary part of the agroecosystem, but also becomes an important component of the diet of the farmers. The curiosity arising in the farmers, desiring to know better these plants occurring in the field, lead them to gather information and discover the culinary or medicinal uses of the grass. In the case of the forest field of Farm 2, edible wild herbaceous plants are intentionally transplanted below the trees or their natural dispersion is promoted by the farmers. In spring especially, while crops are still not available, edible grasses are an important component of the natural farmer's table being prepared in numerous varieties of side dishes. Rethinking what a 'crop' is, Lim and Lee declared that they wish to give a larger part of their diet and field space to edible grasses. In a similar way, Ryu (Farm 5) possessing a vast knowledge about the medical and culinary uses of grasses present in his fields, asserted that rather than human planted crops, edible grasses were the future of natural farming.

3.2.3 Ethical-practical tensions: developing a practice-related moral standing

Working in the fields, the farmers face daily situations needing decisions, balancing diverging aspects and values. They are led to revise their thoughts about the world and their ethical baseline, as the implementation and development of specific practices demands the resolution of moral dilemmas. To provide an example of this process, I will explore the evolving perspective of Choi and Cha on producing food under natural farming.

As newcomers in the natural farming world, Cha and Choi were actively engaged in a reflective process of developing site-specific practices. When starting farming, they mainly based their practices on the guidelines described in 'The natural farming class of Kawaguchi Yoshikazu' (Arai & Kakamiyama, 2017). However, they observed that some were not adapted to their own life conditions. For instance, Cha mentioned that "there is no need for watering in natural farming" but seeing the way vegetables grew last year they decided to water this year, having observed that watering is especially needed when the seeds have just germinated. They also decided to fertilise the tomatoes, corn and asparagus this year with some organic fertiliser. These events mark the difference between the ideal, imagined natural farming and the reality of the confrontation with real-life situations, as farming does not go as one had wished. Talking about the still poor quality of the soil, Cha mentioned: "*The conditions must be right for natural farming to be possible*". This statement also points to the long period of time needed for these right conditions to get established naturally in the fields. Until these are reached, the condition of the land does not enable a significant growth of the crop plants.

Having decided this year to start selling the vegetables they produce for an income, Choi and Cha gradually became aware of the need to change their practices to their current situation. Previously thinking of natural farming as strictly abiding to rules they had set for themselves, they changed their view to see it as a gradual process of improvement.

> "*At first, we were talking of the four principles as the basic rules but there were no precise rules like not giving water and compost and not using plastics: it just came like a natural act when thinking of the broad principles. At first, we were thinking "If we transgress that rule, then we are not doing natural farming", we started with such a slightly obsessive approach. But in reality, respecting at one hundred percent all these rules is not that important when doing natural farming. Nowadays I simply wish to realise them one by one gradually while living over several decades, going towards a complete form*."

In the first part of this quote, Cha mentions the directing role of the philosophy and principles guiding practice. He then highlights the processual nature of implementing natural farming. Telling me that natural farming was a way of living and thinking, even though they could not implement all the principles at once, they still acted according to the mindset supporting it and adopted its lifestyle.

The difference between the "ideal form" of natural farming and their real-life situation give rise to several dilemmas of an ethical dimension, pushing them to review their ethical standing and way of farming ceaselessly. Their economic situation, as well as their wish of becoming both professional farmers lead them to reconsider the practices and rules they established at the beginning:

> "*When we started to sell our crops, we started talking a lot about the kind of farming we were doing. There was more than enough for us to eat but not much for selling. When we started selling our desire to do more increased. We thought it was a "subtraction farming method" but the desire to do a little more appeared: we wanted to give a bit more water, manage the grass a bit more, give a bit of compost. When respecting the rules and leaving the situation as it is, it happens that we do not get much or do not get anything to eat. Then we start thinking about what farming is. We plant intentionally and cultivate in order to eat. When we do not get any harvest because of our will to respect the rules, then we think about what we are doing, if we really are doing farming. […] What is more important, that the crop grow naturally within the flow or nature, or is it better to control the crop plants with our objective and will in mind?*
>
> *In reality when it comes to growing vegetables, I think we need to compromise a bit more. But at some point, if we cannot farm following the method we want, then what is the meaning behind our farming?*"

With these words, Choi evokes the conflicting thoughts arising from their wish to sell for an income contradicting their ethical viewpoint, or value system. They told me not having managed yet to reconcile the requirement for production with their own ethical inclinations and worldview. Being plunged in such dilemmas give rise to a continuous reflective process of reviewing their practices, objectives and ethical standing.

3.3 Concluding remarks

In this chapter, I presented natural farming as a *process* of finding a way of farming without harming nature. In the case of the natural farmers I met, it was part of a broader process of searching for a life that would reintegrate itself in the natural world without damaging it. This slow process of rethinking humans within nature started prior to their adoption of natural farming. The connection they felt between their own view and understanding of the link between humans and nature and what they caught sight of through the reading of the books is what leads them to adopt natural farming as a way of living. In that way, the philosophy of natural farming as developed by Fukuoka and Kawaguchi gave a direction, opened a path to go towards such a lifestyle. In many of the farmers' words, this transition involved gradually moving from a former anthropocentric posture to a more ecocentric or relational stance, borrowing the words of Lee "where not humans but nature is at the centre". The

philosophy of natural farming, as an alternative narrative of humans within the world provides guidance in the interpretation of the self in the world.

Finding one's own natural farming way is a long process of developing practices adapted to one's own context, taking into account the particularities of the land and one's personal situation and inclinations. Farmers implement in their fields the principles of natural farming, resulting in no-till and grass-driven systems. They learn to coexist with grasses through accepting the way they are presented in natural farming philosophy and through the discovery of their utility in the system. Informed by the understanding of nature as perfect, self-restoring and self-balancing they adopt practices based on the least intervention in the agroecosystems.

Developing practices fosters a continuous process of rethinking the self in the world, as the farmers ponder about their roles in the fields and question the extent of their interventions in the growth of plants. Due to the need to resolve dilemmas arising from opposing wishes in practice, they review their ethical principles, the way they relate and act in the world. The temporary resolution they reach after reflection help framing their practice in a dialectical way.

Chapter 4: Experiencing the fields through the senses

In this chapter I will explore the central role of perception and its relationship to the narratives supporting natural farming, the understanding of self-in-the-world that the farmers derive from them and their agricultural practices. As mentioned in the introduction, different farming systems or traditions are founded on different worldviews and ideologies, attributing different roles to farmers and providing them different set of keys in the interpretation and construction of their relationship to their fields, the nonhuman beings living within them and the earth. Natural farming, as a search towards a unity between humans and nature, points to a way of being and living in the world that does not separate humans and nature. The philosophy developed by Fukuoka and Kawaguchi guides farmers in overcoming dualistic thinking to perceive the whole and the relations within it.

Direct experience and careful observation are at the core of the development of practices in natural farming. I will therefore dedicate the first part of this chapter to a discussion on observation as understood by natural farmers and its role in linking farmers to the whole of nature and directing practices. I will continue on a discussion of perception as a skilled practice borrowing Ingold's concept of the 'education of attention' (Ingold, 2000). The chapter will end on a note about the senses and their connection to intimacy.

4.1 On observation

Observation is a central skill to natural farming, that farmers can acquire through immersion or deep-seated contemplation of nature in action in the fields, of the processes, flows and interactions within the field ecosystem. Through the direct experience of nature, they search for patterns in the growth of the plants, fluctuations of grass and insect populations. In a conversation, Cha mentioned two types of observing: seeing the whole or integral observation, and careful direct observation of the state of one's work and nature in the field. I could find similar distinctions in the expressions of other farmers. In the following pages, I enquire on what 'seeing the whole' entails for perception and how 'careful observation' is used to explore the natural world and develop practices.

4.1.1 Seeing the whole

Asking Lee about the skills necessary to a natural farmer, he answered me that a "*high discerning eye*" (or long-range view), that he defined as "*growing/training one's eyes to see widely and deeply*", was essential. He further described this way of seeing as:

> "*It is seeing without seeing, seeing with the eyes closed. We could say it is seeing through the eyes of god. We could say it is seeing in entirety. When looking with such eyes, we come to*

know that there are harmful insects but there are not at the same time. We can understand more of nature as it is."

We tend to take refuge into what is immediately in front of us, what can be seen directly, refusing to see broader realities (Beyer, 2014a). In such a context, the long-range view suggested by Lee is a state of being accessing wider realities. It involves taking a step back and discarding one's preconceptions and assumptions when looking at nature. Denouncing our reliance on and tendency to limit ourselves to our "*small eyes unable to see the totality of the Earth*", the 'high discerning eye' enables the farmers to 'see' the whole Earth inwardly thus "*seeing with the eyes closed*". As such he mentioned that looking at a female boar feeding her offspring with our naked eyes, we would think that she is the one feeding them. But looking with 'the high discerning eye' or 'heart's mind' we understand that they are fed by the mountains and the sky. The understanding of nature coming from the direct perception of the body living in the world is expanded to the whole through leaps of consciousness across spatial scales and imagination. Sewall (1995) refers to this process as 'perceptual flexibility', that she defines as "seeing similar patterns within apparent chaos, rearranging the pieces and allowing a new image to emerge" (p.210). Perceptual flexibility includes 'fractal consciousness', a perceptual ability enabling the perception of similar patterns at different scales. Adding curiosity and imagination to it, she claims that it can act as a doorway to extend our awareness to more integral dimensions.

Seeing widely: adopting a holistic, relational view

What I refer to as 'seeing widely', borrowing the term of Lee, is the ability of seeing the whole of the farming system, of the surrounding ecosystems in which the farm is a part, and the wider Earth and cosmic system. This understanding appeared in the words of Lee mentioning a Japanese 'mountain-sea' festival. Inhabitants would trim the forest and take care of it, as they knew that the fallen leaves and nutrients would go to the sea, nourish the plankton and thus favour the growth of fish populations. Although people often consider forest and sea separately, these inhabitants were aware of the link between them and saw it as a wider system. This was an example that Lee raised to invite us to increase our awareness of the whole and show us the need to go past our usual way of thinking.

In the fields, farmers do not only look at crops, but also at grasses, insects, water, soil and other elements as well. Nam told me that he was "trying to look and think of nature as a whole living system". For Lee, the way of observing pursued in natural farming differs from observation in a scientific way: looking at a flower by uprooting it and examining it, only some fragmentary knowledge can be gained about it. But observing it as it grows on the soil, we can not only observe this flower but also the relation it has with its surroundings. We can see the flower within the whole network of relationships in with it grows. As such, farmers try to see the diverse elements comprising the fields not as separate from the others but in relationship to the others and to the whole. Natural farmers will not only look at the insect munching the leaves of a crop plant, but also its relations to

this plant and other grasses. This echoes with the practice of perceiving the context and relations that Sewall (1995) named a 'relational view' and that she considered as a necessary part of an 'ecological way' of perceiving.

Seeing deeply: adopting a non-dualistic view

In order to understand the later part of Lee's explanation, let us go back to the writings of the main figures of natural farming. According to Kawaguchi (2000), when one is looking from a discriminating point of view, one cannot see the true appearance of nature. When acting and thinking from a 'discriminating' perspective, our body does not move the right way and right judgements, decisions and acts do not arise. Undiscriminating knowledge is the world of non-duality. It is the original world where things possess their original shape and are in their natural state. Everything is part of one larger life that is not separated. As such there is not weeds and vegetables, no vegetables and vegetables-eating insects, no harmful and beneficial insects. Similarly, in Fukuoka's understanding, the world exists exactly as it exists. People's mind is responsible for the division of phenomena into dualities, like joy and sorrow, life and death. Only when people initiate this process do such things come into existence: in nature, they do not exist. The experience of the world as seamless, and indivisible, out of intellectual interpretation was referred to by Fukuoka as 'non-discriminating awareness' (Korn, 2015). Such non-dualistic perspective was widely adopted by the farmers who often talked of it as it constitutes the basis of natural farming philosophy.

Adopting a non-dualistic stance to approach the field fosters a relational way of observing. In that way, more than merely looking, observation in natural farming is closer to interaction, linking the observer and the observed in a relational process of getting to know the other. Fukuoka was recommending such a relational way of perceiving in 'The Natural Way of farming', where he explained: "[t]o know the real Fuji, one must look at the self in relation to Fuji […] one must look at oneself and Fuji prior to the self-other dichotomy. […] To "look at" or "scrutinize" the rice does not mean to view rice as the object, to observe or think about rice. One should essentially put oneself in the place of the rice" (Fukuoka, 1985, p.116). For Lee, this way of 'seeing' enables understanding the 'truth of things' through the harmony with or becoming one with nature. He expressed that, more than 'seeing', it could rather be seen as 'contemplating' or 'meditating on'.

Several authors points to the benefits that could be received from adopting a non-dualistic perspective. Davis (2011) claims that adopting such a perspective induces greater clarity and richness of perception, and a more harmonious flow of actions. The world becomes more real, alive, beautiful and whole. In a similar way, Hebert (2014) declares that life can be seen more clearly when perception is unobstructed from such preconceptions and abstractions.

Living within the world: a non-dualistic and holistic perception of the self in the world

The perception of the whole in a holistic and non-dualistic way originates in and further influences in a dialectical way the understanding that farmers have of themselves in the world. For Abram (1988), seeing the whole also refers to the adoption of a way of seeing that recognises our embeddedness in the world. This understanding of their connectedness to and status as part of the whole emerged in many of my interviews. In this way, Shin conveyed a feeling of unity with nature: "*I do not think that humans and nature are separated. Humans also are just a part of the whole*". She expressed her understanding of interconnectedness between all beings and the earth as "*the cycle*", which takes a significant importance in her decision-making process and way to perceive the world. She saw the continuation of life, through the process of eating: life is embedded in the seed and herself cannot live without eating it. Therefore, humans rely on and are intricately linked to 'the other' as a condition for their existence: "*All that is natural is cycling. Some things rely on me. I rely on some things as well. Life comes out as a seed and if I do not eat it, I cannot exist today. We cannot think of our whole being as separate.*"

Lee expressed his understanding of the whole in a different way. In order to explain to me how to regard our connectedness to the rest of the world, he suggested me thinking of an aquarium and the beings living into it, as an example of a closed system that can easily be perceived as a whole with the senses. In a similar way, he told me to look at the sea:

> "*Look at the sea, look at the fish and water plants. They live by being one with the sea. It cannot be separated. It is the same on the Earth, only there is air and not water. Within it, we live as one. How can we know it? Breathe. We need to breathe to live. We need to inhale air to live. It is like the fish that needs water to live. Where does air come from? This is where plants and grass contribute. This way, we are connected together. Without them we cannot live. Not only trees and grass, but everything else as well*."

Lee comes back to our very essential needs for life: without air to breathe, food to eat, water to drink, life is not possible. These essential activities connect us to the greater whole in a universal sharing of life, as these activities are not individual processes but requires the whole world as Lee noted: "*When looking more closely how the air, food and water are made, it is when the whole of what is not me exists, that is to say for this air to be made the whole universe need to be, for the three meals I eat the whole Earth needs to be*." In that way, 'me' as a human being cannot exist without the existence of "*what is not me*" (referring to all other living beings and "inanimate" earth), and therefore cannot be separated from it. To the question 'who are you?', he told me a possible answer could be 'I am the Earth'.

4.1.2 ‘Careful observation’: Observation in practice

The learnings acquired through ‘careful observation’ can be used to adapt practices and develop one’s own way of doing natural farming. Indeed, as mentioned previously natural farming does not provide any tangible procedure, but a set of principles and a specific way of looking at and being in the world. There are no real instructions of how the principles should be implemented in the fields, it is up to each practitioner to develop their own practices based on his understanding of nature and their intuition. As such, ‘careful observation’ is the fundamental basis for the creation and adapting of farming practices. In the field, I could observe the multiple ways in which observation is used for innovating and adapting practices and improving management. Several examples will be presented in the following paragraphs to illustrate the different ways observation informs practices.

Developing one’s natural farming way is a continuous process of trials and errors. In the fields, farmers try out various methods and observe closely how it unfolds with the passing of time. For the improvement of their practices, natural farmers need to learn from experience how nature responds to their actions. For example, through the observation of the growth patterns of the crop plants he cultivates, Nam gradually started comprehending when plants needed his assistance, when they did not, and how to use their properties to manage them better. For instance, growing diverse squash varieties, Nam quickly understood that letting the vine grow within the grass would result in difficult grass management, the tendrils tightly grabbing the surrounding grass. Using the characteristics of the vine, he developed his own growing method adapted to the conditions of natural farming (see Figure 4-1).

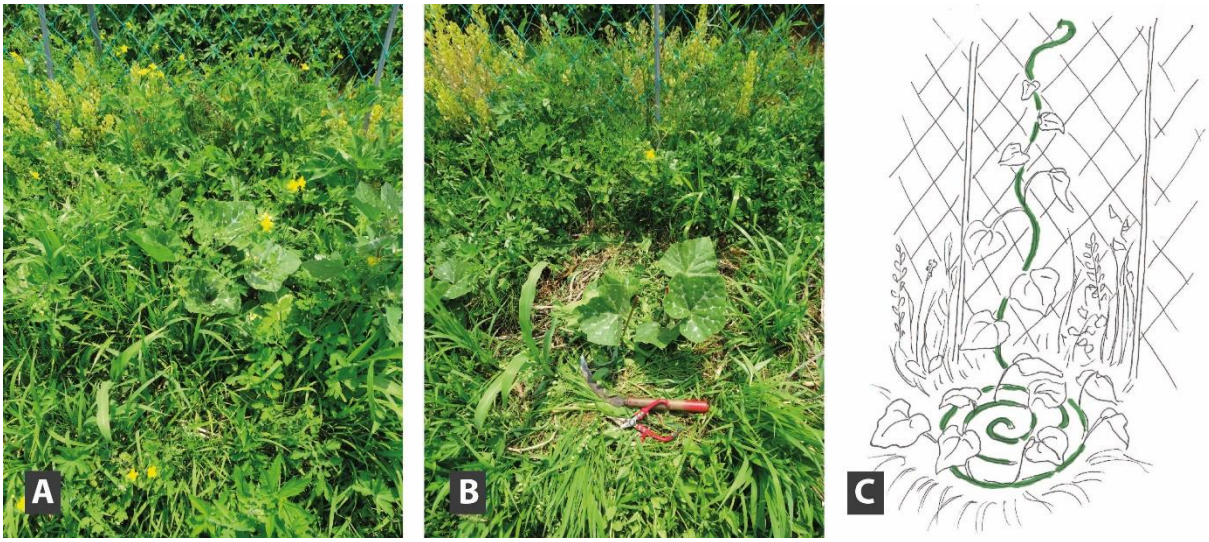

Figure 4-1: Nam grows pumpkins in a circular way, having leaves cover the soil to prevent grass growth and so that tendrils do not grab the surrounding grasses. Noticing further that in natural farming, as no fertilisers are given to the plants, a single connection to the soil would be insufficient for nutrient absorption, he decided to let the vine grow for around one meter on the soil to extend the nutrient absorption area leaving it to grow upwards (C). Squash plant before (A) and after (B) grass cutting and directing it in a circle.

Through observation of the surrounding natural ecosystems, farmers derive inspiration and knowledge for the development of their farming system and practices. Nam's conception of his orchard provides an interesting example in that regard. Initially attracted to the permaculture concept of 'forest garden', he adapted it to his understanding of natural ecosystems. According to him, planting trees in a way coherent with natural farming philosophy would be planting following natural succession stages, as trees should not be planted in a soil not ready to support them. As such, in his orchard he waited for 'wild' trees to start growing within the perennial grasses before starting planting diverse fruit trees, as the naturally occurring trees represented a hint that the soil was rich and active enough to support young fruit trees. Leaving the soil build itself with the passing of time was seen by him as more natural than artificially creating the conditions required for their growth. Doing the latter would only result in adverse effects. Nam also had a different perspective on the components of the "guild" – refers to a grouping of lower plants around a tree in permaculture – of the trees. Planting vegetables below the trees does not comply with natural succession and such ground cover would prove unable to generate the functions nature provide. According to him, the strongest the influence of humans on the system is, the less can the functionality of nature express itself. Looking at the trees within their surroundings, he observed that the grasses growing trees differed according to the tree species and growth stage. He thus understood the naturally occurring annual and perennial grasses as having a relationship with the tree: they are part of the 'network' of the trees. As such enabling the tree to build its network and enabling the grasses to belong to this network was for him the best manner for an artificially made forest to function in a way closer to a natural forest.

Natural farming systems are complex, as the agroecosystems do not only comport crop plants, but grasses and a living fauna. As seen in the introduction, industrial farming systems are based on agroecosystems intentionally simplified, resulting in an accompanying simplification of management. As such, it enables farmers to apply sets of pre-established techniques and methods. However, as natural farming is based on a more complex ecosystem within the fields, farmers need to find ways to cope with the complexity and wholeness of natural ecosystems. As Choi mentioned, not only looking at the crops, they equally need to assess the growth of the grass, the presence of insects and activity of small animals. Observation is at thus at the core of agroecosystem management. When I was working on their farm, Cha used to go on a morning and evening walk in the field, observing and assessing the state of the agroecosystem.

Furthermore, through careful observation, the farmer can get closer to the 'logic of nature' and seek an understanding of what happens in the fields. Observing a well-established natural environment, Nam concluded that insects do not attack only one specific plant species. The grasses in his fields all exhibited some holes or other insect-related damage. Some grew well some did not. Nam saw this state as the true appearance of nature. Chinese cabbage as another 'grass' in such an environment would therefore only sustain little damage, as the attacks of insects will be spread on the following

grasses as well. When grasses are not present in the system, the Chinese cabbage become the sole prey of the insects, who do not have any other source of nourishment. This understanding came to Nam in an intuitive way as he observed natural ecosystems: even before actually seeing it he *knew* it would be this way because this was the original appearance of nature. Getting to know the 'logic of nature' enables farmers to accept damage done to their crops as a natural happening.

4.2 Learning to see: perception, philosophy and practice

Guided by the understanding of perception developed by Ingold in "The perception of the environment: essays on livelihood, dwelling and skill", I will present briefly in the following section two possible ways in which philosophy and then practice direct perception.

4.2.1 The education of attention: influence of philosophy on perception

Working in the field along with the farmers, I quickly noticed that I did not perceive the field and beings living within it as they did. Cha would point to me a flower I was unintentionally stepping on as I did not notice it or indicate me an edible grass I had automatically or even thoughtlessly cut, as it appeared to me as melted in the green uniformity of the growing grass. In a similar way, I recall having had much trouble when I started the task of pulling out grass sprouts growing within rice sprouts, or the task of cutting grass in the edible plants forming the ground cover of the forest field at Lee and Lim's farm. However, through practice and continuous engagement, I started 'growing an eye' able to distinguish crops from the surrounding grass and noticing at once the edible plants that were not to be cut.

Ingold (2000) refers to this process as the 'education of attention', term initially formulated by Gibson in his work 'The ecological approach to visual perception' (1979). Through the act of showing, the experimented practitioner enables something to be seen or perceived through hearing, smell, touch or taste, by the novice. It is as if "lift[ing] a veil off some aspect or component of the environment so that it can be apprehended directly" (p.21-22). Through their sensory education, novices are provided with 'keys' to meaning, used as *clues* to help them in a specific task. Clues are "keys that unlock the doors of perception of greater depth and clarity" and guide the novice towards the "meaning that lie at the heart of the world itself" (p.22). When able to detect the clues in the environment, the novice becomes a 'perceptually skilled agent'. In a similar way, Sewall (1995) highlights the focus of attention as often meaning the difference between what is seen or not seen. The attentional focus influences and creates subjectivity by facilitating the perception of some objects, relations and events to the exclusion of others. For Sewall (1995), focused attention is a process at the root of the subjective nature of perception, which produces a richness of colours and deepens sensory experience.

Coming back to my own experience cutting grass in the fields, as a novice I did not possess the awareness and clues necessary for me to accomplish my task. The farmers perceived things that me as a novice did not. Recalling visitors coming to her field, Shin mentioned "*when other people come, they think there are only grasses but us, we know that this is a bean plant and this is grass. People say 'what kind of grass field is that!', but when we cut the grass they can see a bean plant growing healthily in there*." By pointing such things to me they directed my attention and I became perceptually aware of the thing they showed me, and able to recognise them in further tasks. I thus became able to recognise an underground mole tunnel by the signs on top of the soil or diverse species of edible plant species.

For the farmers themselves, often having started and developed their way of farming without guidance from any other experienced farmers, the philosophy of natural farming introduced in the writings of Fukuoka and Kawaguchi took this role of guidance. By exposing a different way to look at the world, 'showing' them the grasses and insects, the vision of a living field, natural farming philosophy made the farmers aware of elements of the system, invited them to interact with them. In the context of their direct experiences through their senses and working in the fields, the farmers practise another way of perceiving. But this is not an easy task, the adjustment is not done with ease and needs a continuous fine-tuning. For example, despite 'knowing in their mind' that insects should not be considered as an enemy, Choi and Cha experience troubles perceiving them that way when looking at the broadening holes in the leaves of their crops.

Experienced natural farmers become 'perceptually skilled agents' as they are able to read clues in the fields, helping them accomplish tasks. This was part of the understanding of Shin who stated that when she had a problem she would go to the field and stand there in the middle, as Kawaguchi suggested it, searching for an answer. According to her, nature is constantly searching to give us the answer we search for, getting the answer is a matter of our being ready for it, having sharp enough senses.

4.2.2 Practice and perception

For Ingold (2000, p.260), perception is linked to the activities we perform: "[*w*]*hat* we see is inseparable from *how* we see, and how we see is always a function of the practical activity in which we are currently engaged". According to Gibson (1979, in Ingold, 2000, p.166-167), perception is a mode of action, "an exploratory process of information pickup". As such, what we perceive depend on our acts: particular type of information will be picked up depending on the activities we perform (Gibson, 1982). The way we perceive is learnt in a way appropriate to a culture, through practical training that takes place in everyday tasks (Ingold, 2000).

In that way, the farming activities natural farmers undertake in the fields influence their perception by directing it and leading to the reception of specific information. As natural farming activities are realised through handwork, farmers are directly in contact with the crop plants, grasses and insects. As the most time-consuming task is cutting grass, the attention and perception of farmers are directed to the grasses and the beings found within them for most of the time they work in the fields. As such, the very activities resulting from the implementation of the natural farming principles open farmer's perception to the nonhuman world.

4.3 Concluding remarks

Perception in natural farming can be seen as a 'skilled practice' to take back the words of Ingold (2000). Directed by the philosophy of natural farming as outlined by Fukuoka and Kawaguchi, farmers strive for a way of observing that is holistic, non-dualistic and relational. In observing their fields, taking into account the wholeness of the ecosystem established, observing plants in their context, they develop practices based on their understanding of nature and adapted for the management of complex systems.

Their trained perception not only guides them in the development of practices but equally, in the case of experienced practitioners especially, in feeling their link to nature and the world, expending their sense of self. Such outcome was mentioned by Korn as a necessary step to find our place within the natural world and reach 'a total connection' with nature (in Kang & Lydon, 2017). Abram (1988) observes a similar role of perception, as a channel for communion with the nonhuman world.

The senses, connecting the self and the world, are a gateway for a direct connection to the fields and the beings living within them. Opening and fine-tuning their senses, the farmers happen on a world that is more alive, beautiful and whole. Observing the field – looking, touching, hearing, smelling – joins the observer and the observed, as the farmer becomes intimately linked to the field and nature within it. In such a way, Puhakka (2014) declares that the senses open us to intertwining and intimacy, which will be the subject of the next chapter.

Chapter 5: Exploring relationships in a more-than-human world

As was mentioned in the previous chapter, being directly involved in the field through the senses conduces to intimacy, as the senses connect “in there” with “out there” (Sewall, 1995). While assisting their crops, the farmers are in constant interactions with crop plants and other living beings. Farmers evoked in different ways this connection to life as they felt it in their fields. In this chapter I will explore how farmers discover life within their fields and get acquainted with the living beings sharing a commune living space of which they are part of. I will continue by presenting the connection that farmers establish with the plants they grow and how it influences their understanding of self in the world.

5.1 Discovering life in the field

The small scale of the farmland allows farmers to work manually, with the occasional use of a grass trimmer. Through manual work, farmers interact directly with the plants they grow and the other living beings around them. Their senses are thus in direct contact with living organisms: they see them, touch them, hear them. According to Lee, "*when not using machinery, one is more inclined to listen to the sounds of nature. And becomes closer to nature. Machinery tends to pull people away from nature*." Choi made a similar remark, observing that when not using machinery, the surrounding sounds can be heard more easily and one can focus on the sounds of birds, or mosquitoes. Working in the field offers a possibility to notice sounds that, although having been around at all times, one was not aware of before. Going back to the previous section, this could be linked to the difference between hearing and listening. When listening perception is grounded in an act of attention (Ingold, 2000). Attention is what allows Choi to notice and focus on the surrounding sounds. Being in the field is an experience of sensory aliveness, it is a place in interaction with the farmer, leading to experience of interest, awe, intimacy, of aesthetic beauty.

Natural farming is an “agriculture that values life”, searching to work with life not against it (Lee, 2000). Giving up tilling and banishing the use of biocides, farmers welcome nonhuman living beings to the fields, acknowledging the status of the field as a shared ecosystem of which human beings are only part of. In this living field, farmers continuously encounter varied living beings: known or unknown insects, grasses, soil organisms, birds or water deer. Iwasawa Nobuo, a Japanese natural farmer, compared humans to ducks, mentioning that both felt a similar attraction for living, moving things (Iwasawa, 2012). This echoes to what Wilson (1984) termed ‘biophilia’ that he expressed as an innate human tendency to focus on lifelike things. While working with the farmers in the field, I could notice how they would be absorbed in the observation of an unknown grass, soil organisms or a strangely shaped asparagus.

As newcomers in the world of natural farming, Choi and Cha described themselves as being at a phase of discovery of life in the field. Recalling her previous experience of gardening in their city allotment and her current experience with natural farming, Choi expressed her raising awareness of life in the field:

> "*When farming, applying compost and when harmful insects appear catching them, we only thought vaguely about such things. But there are many insects in the field that are not under the term 'harmful insects'. In the textbook it is written 'there can be damage due to birds', in the book they really express it by only these words 'bird damage'. But there are so many birds that can come and go from our field. There are birds that eat what we planted and there are birds that eat the insects that are tormenting the crops. And moles come and go. I did not know that they were digging the soil and going here and there to search for earthworms. I discovered gradually 'ah moles as well are living in this soil'. I feel like I am at a stage where the feeling of connection with this life is lacking. Now it is a time where I slowly get to know the grass, maybe after some time, when my heart opens, I will be able to think more about my relationship to the insects, the birds, the mole, the other animals. Now is a phase where I discover the existence of beings that I did not know, and that they are living together with me.*"

In that way, through working in the fields, Choi became gradually aware of the other beings sharing this living space. Her understanding of the field gradually expanded to integrate a community of beings and network of relations.

Having lived in a small city in his childhood with green areas where he would regularly encounter diverse insects, Cha described this process of life discovery as ‘reuniting’. Returning to the countryside in his thirties, he depicted meeting the insects as recovering relationships that he had lost through decades living in the capital city. In an urban setting, the link he had as a child with grasshoppers, dragonflies, mantis weakened and he came to know them merely as *information*, forgetting that he was *living together with* these beings.

Working in the field, Cha encountered numerous – known and unknown – insects. Many times, he recalled being surprised by the sudden appearance or movement of one of them. He took the habit, while cutting the grass with the *tobnat* (saw-edged sickle) to leave enough time for the insects to run away. This raising awareness of the presence of insects within the grass made him reconsider his use of the grass trimmer. Prior to this he used this tool thinking he was only cutting the grass, but discovering the numerous insects living within the grass he realised that this was not the case: he would cut grass and insects simultaneously as the rapid use of the grass trimmer did not leave enough time to the insects to run away. From this story, we can see the link between Cha’s direct perception of the insects in the field and the influence on his practices. Acknowledging the presence of living beings

within the grass, ethical considerations deriving from this new understanding led Cha to question his use of the grass-trimmer

In the words of more experienced farmers, I detected a transition of status in the perception of living beings, that I expressed as ‘experiencing nonhuman beings as *living*’. Although it would appear evident to the reader that nonhuman beings, such as animals, trees, grasses, insects are living beings, the perception of their status as ‘living beings’ might be lived differently. One example of it could be the above description of Cha: knowing as information, exterior to the self, and knowing ‘in-relation’, personally through direct experience. As mentioned in the introduction to this thesis, the emergence of the duality subject-object has been pointed to as responsible for the division of our lived experience in two aspects: the ‘knowing subject’ and the ‘objectified world out there’ (Bai, 2015). From such a perspective, humans relate to the world as a *collection of objects* (Berry, 1996). The experience of life as mentioned above is a process of recovering the perception of an interconnected living world.

Through body experience involving the whole of the self, farmers become aware of what “insects are living” really means and start really perceiving them as having their own life. While farming, farmers recover a sense of ‘life’ and get acquainted more personally with what ‘living beings’ means. Nam mentioned becoming more acutely aware of what killing insects entailed: “*No matter how small they are, they’re moving and when you press down on them with your finger and kill them, they disappear. I cannot see them moving any more. A life just disappeared*.” Being conscious and attributing value to the life of insects, Nam acknowledged them as living beings. In a similar way, Seo mentioned his changing perspective on seeds: "*Seeds were just seeds. But now they are living beings. They are alive. They are living and remembering everything. That's how I came to think. While doing natural farming, it is not nature that is changing but myself*." With these words, Seo evokes a change of perspective that led him to perceive and understand the seeds as ‘alive’. He highlights the fact that this change comes from himself, the seeds remaining unchanged.

Perceiving the beings in the fields as living is an experience of wonder. Living within this ‘living world’, the farmers experience different emotions, surprise, affection, awe, a sense of mystery. As Cha notes: “*It is just like the title of the book of Kawaguchi: ‘standing in the mysterious field’*.” Through observation and their senses, the farmers discover the mystery of life. Nam talks about “*opening* [his] *eyes to a new world*” he had no idea about: "*I did not know and had no interest for that before starting farming. If someone had told me such a story I would have said 'stop don't say more'. But I after having started farming, I came to know that there is such a different world just next to us I had no idea about, a world with not only humans.*"

5.2 Establishing relationships

The relationship with the crop plant was a category I built very early in my research. From my first phase of field work, working on farms and observing the farmer I could observe the careful, maybe I could say loving way they handled the plants they grew. In my interviews, the theme of the relationships with the plants was especially present in the discourse of more experienced and older farmers.

5.2.1 Building an intimate connection with crop plants

The natural farmers I met usually grew their crop plants from seeds, rarely buying seedlings outside of the farm. In addition, they would generally collect seeds for planting the next year, seeing this process as important in adapting crops to local conditions. Working at a small scale with limited number of each crop plants, farmers are able to interact with their plants on a personal level. Following, I will briefly present how some of the farmers understand their link to the crop plants growing in their field.

For Choi, working at a small scale enables spending more time looking at each single plant. Handling the plants with her own hands, she feels that the connection between herself and the crop plant becomes more unique. She can feel the reason why she does such work, "*for the sake of who*". Because hand work takes time, she told me being able to see more of the current condition and appearance of the plant and to focus more on its growth process. She revealed having more affection for certain crop plants over others. With growing affection, she started observing them more closely, becoming curious about the cycle of their life: "*When I start caring for them, I start searching more about how they can be eaten, how to harvest them, how I could help them to grow better and when they die. And I discover about them some lovely sides, some cute sides, and that stays in my mind.*"

For Nam, the moment he plants a seed, a connection is established between him and this seed, or the future plant it will develop into. This feeling of connection naturally arises in him. From this moment, it becomes his duty to assist this seed, evolving into a sprout, through all the steps of its growth. Due to the respect of the relationship established between himself and this plant, Nam told me never having entrusted the care of his plants to outsiders. Nam considered that his goal was to support the plants growing in his field in living a satisfying life. As farming is a human and not a natural process, the crop plants are planted in conditions that might not be adequate for them. Feeling apologetic, he strives to plant them in a favourable environment and assist them so they can enjoy a life satisfying enough in those conditions. The plants being able to live a satisfying life to their full extent was the happiest thing for him, greater than the satisfaction of reaping a big harvest. He declared not growing plants with the sole aim of producing food. On the contrary, if the plants offered him food in the process of living their life, he would feel grateful for it. He identified the establishment of new

relationships each year as the main reason for his renewed interest and enjoyment in farming each year. Nam mentioned the outmost importance of relationships on this Earth, building relationships being the source of happiness.

Kristyn Leach, a natural farmer based in California, revealed similar connection to the plants she grew (interview published in Kang and Lydon, 2017). She noticed the difference in taste between beans harvested at different stages of their growth. Because plants are not "all the same" and do not grow in the same way, they become special and growing them is never boring. "If you properly take an interest in them, you will definitely feel their difference" (p.116). In her field, she does not experience the plants growing there as a 'crop' but more as 'individuals' that are distinct from each other.

With these words, the three farmers described their relationship to their crops. Choi mentioned the importance of working with one's own hand, enabling the establishment of a connection to her crop plants eventually fostering a growing curiosity and affection for the plants. Nam described the duty he felt towards the plants he grows, coming from the personal relationship that connected him to every single crop plant. This responsibility felt towards a living being led him to consider plant wellbeing as an essential aspect of his practice. The last contribution of Leach pointed to the perception of crop plants as individuals, each being different from the others. The crop plants are no longer merged in a homogenous unity designed to as 'crop', each possess their own life and exhibits distinct features.

Through their relationship with plants, farmers experience the happiness of taking care. Recalling his experience in the field, Seo mentioned that he could directly see the positive influence that cutting the surrounding grass had on the crop plants: "*When the grass is taller than the bean plants we cut it. When I cut the grass, the leaves of the bean plant appear. This is so pretty. When I go out to see the next day, the bean plant has grown a lot. It really does. From this little bit of help. What I learn from this is 'if I cut the grass, this plant likes it so much'. At that time the happiness is the same happiness coming when we help someone else*."

5.2.2 Communicating

The relation established with crop plants often resulted in the wish for communication, that could especially be heard in the words of the more experienced practitioners. For Nam, as all living beings are part of nature, communication should therefore be possible between them. For communication to happen, one needs to be open to *feelings*, even if these are not objective or accurate. During his first years of farming, while crops did not grow in his fields, Nam initiated talking to plants out of the desire to have something to rely on in this period of uncertainty. At the beginning, he equally felt discomfort in his interactions with grasses, insects or crop plants. He described it as a "*bit of fear*", "*awkwardness*" and "*not liking touching them*". Talking to them was a mean to overcome this

uncomfortable feeling. By repeatedly speaking to them, he started *truly* meaning what he was saying and conveying his feelings to them. He started feeling they had something to tell him as well and wished he could hear what they had to say. Thinking that the inability to communicate with plants came from a difference in viewpoint, he tried coming closer to the viewpoint of the plant by lowering himself while working to the 'field of vision' of the plant.

From his experience looking after his crops, Nam noticed that touching a plant could have an influence on its growth. As he told me, cucumbers would be the most sensitive to interactions with humans. This led him to think of *touching* as a universal language across species. Noticing a tendency for animals, plants, organisms to live while mingling together, he started regarding touching as the expression of love for all living beings. Touching the crop plants while working became an essential aspect of his practices: he assumed it would convey his feelings to the plants and foster their growth. The possibility to touch all single plants became a standard to judge the appropriate size of his cultivated land.

Although not disclosing it as extensively as Nam, other farmers mentioned their wish to 'hear the plants' or communicate with the plants in some ways. Seo equally expressed his wish to hear 'what the plants say': "*When seeing the plants that relatively did not grow as well, I ask "what do you need?". By asking I do not get an answer* […]. *I think about it one year, two years, thinking about it for thirty years, would I not be able to hear what the plant says by then? My earnest wish of hearing the plant's stories remained the same.*"

5.2.3 Ethical reflections arising from relationship with plants

Feeling a connection to the plants, the farmers are subject to various ethical cogitations, as was mentioned in point 5.2.1. Due to these arising relationships, farmers reconsider their behaviour towards the plants and their status relative to the natural world.

Going towards an equality-based ethic

For Nam, 'going back to nature' means in the first place rethinking and reexperiencing our relationships to insects, animals, trees, grasses. People should not only intentionally establish relationships with other humans but with nonhuman living beings as well. Nam expressed his dissatisfaction about how humans generally thought of nature as an object not related to the self. Such mentality would induce humans in killing insects or grasses thoughtlessly and carelessly. For him, nature and nonhuman living beings are on an equal footing with humans. He considered this equality-based moral understanding as a necessary start for a healthy relationship with nature. Stemming from this, he declared that we as humans do not have the right to kill unmindfully and irresponsibly other living beings, such as absentmindedly pulling some grasses when passing in front of them or crushing

an insect passing by on a whim. Such acts would be defendable only if they are necessary in the process of "*acting for living*": harvesting a crop plant to eat, cutting grass hindering the growth of a crop plant. He contrasted "*acting for living"* with "*acting for one's own comfort*" and "*acting for profit*". Grounded in the same understanding, Nam is against using living beings as means to reach his objectives. He thus rejects the use of clover cover crops for containing grasses in the rice fields developed by Fukuoka. Planting seeds, he tells them to grow following their 'natural form'. In conventional and organic farming, he sees farmers as overfeeding the plants and forcing them to overgrow. He equates the ability to grow in accordance to its original form as the happiest thing for a plant.

Kristyn Leach showed a similar opinion: "Like humans, plants also have their own life, wanting all of them to grow well in the exact same way under the same conditions is a greedy desire from our side, I think. Because we are the ones relying on the plants, for farming and cooking as well, we should adjust our activities on the way the vegetables grow" (p.115). In that way, humans have to adapt on the way the plant grows, and not the opposite.

Thinking from the perspective of the plant

Harvesting edible plants in the forest field with Lim and Lee, I became the spectator of an interesting debate between the two farmers. Lim suggested harvesting the whole plants, cutting it stem near the soil surface, as she had noticed it grew back fairly well. Lee replied to her that this thought came from her "*greedy human self*" and that she had not considered the question from the standpoint of the plant. As the time of reproduction was approaching for the plant, cutting it by too much would hinder it in its flowering. For him, how to harvest the plant should be adapted on the observations of the plant's growth pattern. The farmer should break free of his former self-centred way of thinking and try to think from the perspective of the plant. Remarking that nowadays much discussion arose around animal welfare and the moral need to provide them with the best environment to grow up in, he declared that this way of thinking should be extended to plants as well.

Throughout this chapter I have exposed how natural farmers connect to the plants they grow and how this led them to care for the plants and consider their well-being. Although not all farmers have been mentioned in these last sections, while working in the fields with other natural farmers as well, I observed similar caring attitudes towards their plants. Kallhoff and Schörgenhumer (2017, p.203) describe comparable attitudes in gardeners, in the form of a "commitment to the flourishing of the other" being the source of a caring behaviour. These authors refer to 'flourishing', concept originally developed by Kallhoff (2014) as "a plant's ability of actively striving for its own good" (p.194). Respecting and supporting the flourishing of the plants growing in one's field, means to promote through one's actions the 'good life' of plants (Kallhoff & Schörgenhumer, 2017).

The words of the farmers echoed with the conditions listed by Kalhoff (2014) needed for the flourishing of plants: the plant can sustain its life and is able to react to external stress, can accomplish its life cycle from seedling to the end of reproduction, and can express its typical characteristics following its specific life-form. As such, Nam declared that when possible he tried not to harvest the plants before they could complete its life cycle, leaving them enough time to "*fully live their life*". Nam and Lee also stressed the importance of allowing the plants to grow according to their "*original form*".

5.2.4 The 'wild' component: getting to know the grasses and insects

As mentioned in section 3.2.2, discussing grass management and coexistence, the fourth principle of natural farming 'do not regard grasses and insects as enemies' gives a direction for the adoption of a behaviour perceived as adequate in the field. By abiding to this rule, the farmers leave grasses and insects in the field and try perceiving them differently. Through sharing a same space and constant engagement, the farmers grow acquainted with these living beings inhabiting or passing by the fields. Recognising their presence, a connection is built between them and the farmer.

An essential step in this process of building relationships is *getting to know* the beings in the fields. Identifying a species in the fields enables careful observation and learning about the living being under observation. Lee emphasised the importance of memorising the names of plants, trees, insects. He compared this action to memorising the name of the people we meet and how it helps us in getting information about them. "*When learning its name, I am happy as when I make a new friend. Like being able to recognise my friends in the crowd, I can recognise instantly the grasses and trees of which I know the names in the middle of the forest. And whatever the form I can give and receive friendship from them*". In a similar way, discussing the natural history approach, Tucker (2014) describes the role of identification as helping in observing more carefully and learning about the individual that one watches. For her, the desire to learn the name of a 'mysterious species' is linked to the huge amount of knowledge that is associated with that information. This knowledge "open[s] a path to increased wonder and appreciation for this lovely individual" (p. 102).

Choi links the recognition of grasses and the knowledge she acquires about them to increased affection: "*When woofers come to our farm, I tell them about what this grass is, if we eat it or not, what help we receive from it, its characteristics. By doing this, they will know more about this grass, know its name, when knowing such things, the heart opens up more.* […] *The grasses are not just weeds, they are beings which are connected to us. I wished other people would also think that way.*"

In a similar way, most of the practitioners I met are eager to know the names of the plants they meet in the fields and learn about them. Knowing about them, their living pattern, their medical or culinary

uses enables the apparition of a connection between the farmer and the plant: the farmer recognises the plants, notices when it comes out.

5.3 Concluding remarks

Bai (2015) declares that as citizens of modern societies we have lost the ability to communicate with other living beings. She highlights as the ethical consequence of such loss that these beings do not matter anymore for us as beings worthy of our ethical considerations. Their only importance is given by the utility or commercial values they hold, such way of thinking forming what Bai (2015) calls 'ordinary or conventional thinking'. Practising natural farming the farmers recover a perception of the world as an interconnected living whole. Adopting natural farming practices, discovering life in the field, the perception that the farmers have of themselves, their crops and other living beings in the field changes. They review their status as 'owner' or 'grower' and through a process of 'lowering themselves' they reach a more equality-based understanding of their link to other living beings. Acknowledging the life of plants and insects, farmers identify them as recipients of ethical considerations and extend the moral domain to encompass them. For Cha, if eating meat products is denounced as exploiting animas, then growing crops could be denounced as exploiting the vegetal world and the soil. Lee showed concern for plant life integrity in the way he managed and harvested the crop plants in his fields. Working in a field under natural farming, having adopted the specific understanding of the world implied in its philosophy, farmers are led to reconsider their link to other beings and nonhuman life integrity.

Direct involvement with the plants through the senses create an intimacy that fosters the development of a connection between the farmers and the beings they interact with. Relationships to crop plants become personal and intimate. This perceived intimacy lead farmers to care for the well-being of their crops, wishing for them to grow in the best conditions. This link between felt intimacy and ethical behaviour is echoing Leopold (1949) who declared that we could be ethical only in relation to something we see, feel, understand or love. Puhakka (2014) argues that care and concern arise spontaneously from experiences of intimacy felt as no separation. On the contrary, if separation is experienced between self and the other, such spontaneous action is unlikely to happen and "neither moral ideals nor rational arguments or scientific evidence have the power to persuade one to care for the other" (Puhakka, 2014, p.11). In natural farming, relationships appeared to me as being at the centre of the practice of the farmers, seeking and sustaining a deep connection to the plants, the fields, the Earth. Intimacy and the sense of connection it provides lead to change in practice, as farmers take into account the well-being of the plants, of insects and other living beings. Establishing relationships has a transformative influence of the life of farmers, as is mentioned by Tucker (2014, p.103) "it is often through our relationship with the nonhuman that we find our deepest humanness, becoming "who we most truly are"".

Chapter 6: Cultivating human beings

This chapter ends our journey in the world of natural farming and the complex interactions between the farmers' mindsets, practices, their fields, and the beings living within them. I will dedicate these few pages to the discussion of the inner-growth of farmers, a process seen by Fukuoka as the ultimate aim of natural farming, essential for recovering the unity between humans and nature.

Previously I have argued that by doing hand work and directly engaging with the crop plants and beings on the farm, the farmers discover intimacy and establish relationships with these beings. This established relationship leads them to reconsider their ethical view of the plants and other living beings and foster a sense of belonging to and of sharing a common place. Working in the fields became a process of inner growth. Eggen (2013) reported similar opinions in his research about biodynamic farmers, as one of them declared that doing as much handwork as possible was ideal as it fosters the growth of human beings. Explaining this, the farmer revealed that working without machinery, for instance tilling the land with a horse, allowed seeing and feeling the soil much more closely.

Choi mentioned that growing crops resulted in two processes of growth: physical through eating and inner, as spiritual growth of human beings. Nam expressed a similar opinion, that natural farming enabled to find back the health of the body and the soul. For Choi, it started with a process of becoming aware of her fixed ideas, as she described how she was gradually becoming aware of the preconceptions and assumptions she held over farming. In that way, natural farming became a process of identifying the ideas that have been implemented in her head through education, social life, culture and traditions. Re-examining what is considered as 'common sense', natural farmers reconsider agricultural practices at the very foundation of our current modern agricultural systems. Becoming aware of these preconceptions becomes the first step towards rethinking practice and changing one's perspective. But these ideas are difficult to discard, as they can be part of the understanding of self and be widely shared beliefs and values.

Choi drew a distinction between understanding the principles of natural farming through her intellect and *feeling* them through her body and mind. "*The things I know with my head but did not learn through my body. For example 'not seeing the grass and insects as an enemy', I think I understand it with my head, but because of the assumptions about farming we have had all our lives, sometimes I find them bothersome and want to get rid of them. It is a process of realising about the things I thought I knew in my head*." Reading about this principle for the first time, farmers accept them as they make sense in an intellectual way and answer to their desired way of living. However, this shallow understanding faces previous behaviours and assumptions, that the farmers need to face and question.

It is finally through experiencing these living beings directly in the field and feeling a connection to them that farmers more deeply adopt and reach a state of 'not seeing the grass and insects as enemies'.

The fields and the process of living within them become a philosophical medium through which the farmers reflect on their lives, humanity and nature, society. As a central practice of natural farming, farming with the grass does not lead to the adoption of different farming methods: it is a medium in which to rethink the coexistence and harmony between the 'natural' and 'human-made', a path for rethinking the coexistence of human nature and nonhuman nature in a mutually benefiting way. The insights arising through one's experiences in the fields are extended to other aspects of the life of the farmer. This was best expressed by Seo in our interview:

> "*I used to think that right-wing people had to be thrown out, people we had to get rid of. But looking at nature, it was actually very diverse. This is not a matter of getting rid of but of living together. Because we call them weeds and say they aren't good, we should not be like this; nature is about living together. From very young Korean people get used to elimination. 'You are bad at studying? Go out of the way! Do not attend school'. We again and again are facing elimination. This is the same. If there is some damage to the chili plant, then we uproot it. This way of thinking is in farming. […] In natural farming we do not pull out and kill the chili that was damaged, it is a being we have to live with by only doing what we can to help its growth. It is the same with the right wing and education, that is the way I changed*."

In such way, through learning to live with the grass within the field, the perspective of Seo on society and its ways changed. Nature as a philosophical teacher has been explored by Irigaray (2017) discussing how nature teaches the one willing to hear. Observing the vegetal world, she mentioned how it can advise us on sharing a common living space, discovering the conditions and meaning of life, and adopting an appropriate behaviour towards the other beings surrounding us. Lee mentioned to me that nature was constantly reminding him that the world did not belong to humans only: observing the wild ducks happily and freely splashing water around in the rice field, Lee saw in their way of living that humans were not the owner of this world. He further added that although humans think that Jesus is the only son of God, by seeing the wild ducks in the field we can understand that God loves the ducks more.

As was suggested until now, working and living in their fields, natural farmers go through a process of inner growth. This process could equally be described as growing 'virtues' linked to cultivating, as Kallhoff and Schörgenhumer (2017) suggest in their study of the virtues of gardening. Virtues, that those authors define as "trait[s] of a person that qualifies as a "right attitude" in a specific context" (p.195), help in reintegrating our lives within nature, in a way taking into account both the needs and interests of nonhuman living beings. Kallhoff and Schörgenhumer identifies three important aspects of

gardens enabling the growth of virtues: 1) small scale area, where the gardener is in direct contact and interact with nature, 2) learning about and from nature and 3) considering more than the mere utility of the plants. Natural farming, based on small-scale farming and involving direct contact with crop plants through working with hand tools, is in that regard closer to gardening than to highly mechanised systems as conventional or industrial farming. As a garden, the natural field is continuously evolving as the land gradually transforms under no-till to go towards a 'humanised' natural space conjugating both human and natural activity.

Cooper, in 'A philosophy of gardens' (2006) argues that virtues are induced by garden practices, when the gardener is seriously engaged in them. Gardening 'invites' and gives rise to 'the exercise of virtues' (p.93), as care, humility and hope. The garden is a manifestation of the co-dependence between humans and the natural world, that exemplifies our dependence on what is 'beyond humans'. Cooper gives an 'unselfing' dimension to garden virtues, as they foster discarding one's self-centred desires to take into account the plants' good and interests. Gardeners exhibit humility, a sense of care and responsibility for what the garden, or nature 'give' them. This 'unselfed' life based on such virtues is a life that is 'in the truth' and recognises the "place of humans in the way of things" (Cooper, 2006, p.156). As such, for Cooper cultivating is a practice "which, engaged in with an appropriate sensibility – engaged in 'thinkingly' […] – embodies more saliently than any other practice the truth of the relation between human beings, their world, and the 'ground' from which the 'gift' of this world comes" (p.160-161).

Many traits in the behaviour of the farmer that have been described to me as inherent to natural farming are similar to the virtues of gardening highlighted by Cooper, Kallhoff and Schörgenhumer, such as patience, humility, care, respect for life, sense of reality, openness (Cooper, 2006; Kallhoff & Schörgenhumer, 2017). As for gardening, natural farming fosters a reflective process of rethinking and repositioning oneself within the world, and acquisition of 'virtues' or 'inner growth'. In chapter 5, I have already exposed how intimacy through the senses results in caring relationships and lead to rethink human status and connection to plants. Following, I will present how adopting and cultivating following natural farming changes the behaviour of the farmer to a humbler and more grateful attitude.

For Cha, the ideal relationship between humans and nature is a mutual relationship based on an equal ethical status. He saw natural farming as fostering a process of inner-growth, leading the farmers to reconsider their standing within nature, ultimately mentally "*stepping down*" from a former "*powerful*" place to a humbler level, equal to the other living beings within nature or lower even: "*Nowadays, humans think they can control and use nature for their own comfort but in natural farming the ultimate stage of growth corresponds to humans who are acting from a level equal or lower to nature*."

Going through the transition of the land appeared to me as an essential step of such a 'mental stepping-down'. After a formerly tilled land is converted to natural farming, the first years are generally not

productive as the soil rebuilds itself gradually. During this period, that can extend from two to eight years, despite hard work the farmers usually do not get any harvest. Nam went through such a difficult period spanning over four years with no harvest. Moreover, as no farmer had adopted natural farming before himself in the neighbourhood, he was not certain that it would work, despite the description provided in the book of Kawaguchi. For four years, he could not observe a single change in his fields: the seedlings he planted in the spring would have the same size at the end of the season. Out of despondence, he considered changing his farming way to adopt organic farming but eventually decided to continue with natural farming as it appeared as the sole farming way that had a "*promising future*" with the land improving through the years. During this period, Nam spent much time observing and learning from nature, trying to discover the patterns directing the field ecosystem. On the fifth year, some crops suddenly started growing and Nam could collect his first harvest. The system improving through the years, the harvest gradually increased.

Nam considered this transition or 'failing' period as beneficial for the farmer as it had a profound impact on his relation to the natural world. Going through the transition, repeating trials and errors and experiencing their own vulnerability and powerlessness, farmers go through a process of rethinking their relation to nature. Thinking that humans 'are superior to' or 'grow plants', they switch to a more egalitarian and humble view of self in nature and to the understanding that nature grows the crops. Moreover, being able to get a harvest after those years, they tend to think very preciously about it and consider it a 'gift' from nature. A harvest is no longer the product of one's hard work, that is due to come as a result of working, but a 'gift' that nature grants to humans and do not depend on their own will. Farmers thus grow an appreciation and gratitude for nature. For such a change in perspective, Nam believed that going through the transition period was essential for the growth of a natural farmer. Evoking such a change, Nam declared: "*Putting on airs and acting high and mighty is how I have been living in the city. But rather than that, I want to try living more simply and humbly, thinking more about my inner side more honestly. I think this is the right attitude*."

As such, the recovery of the fields co-arises with the inner growth of the farmer, in a parallel process of restoration of the land and "healing of the mind". This echoes the process that Korn (2015, p.21) reported in his writing on natural farming: "As the farmer, under the guidance of nature, help the land recover its original form, her/his mind accomplish a similar journey of recovery towards its "original state".

An equally essential part of this process of inner growth is the recovery of a feeling of the sacred towards life and nature. The natural farming fields, with all the living beings living within them, provide an environment conducive to feeling the sacredness of life, under the guidance of natural farming philosophy. Several farmers have mentioned a sense of the sacred while working in or being in the field. This feeling of sacredness is tightly linked to experiences generating a sense of wonder, of

deep appreciation for the surrounding world, of mystery. A sense of sacredness arises from the experience of phenomena that the farmers cannot understand, defying their knowledge. In such a way, Seo expressed his reverence for the spontaneous growth of plants:

> "*There is nothing I did to this soil. I just cut the grass and covered it. And the facts that plants grow there, not only plants but grasses as well, I cannot describe it in another way but magical. Because I only planted the crop plants, no one planted the grass. But this grass came up this year and will come up next year and will keep coming up. How to explain that. This person* [Shin] *calls it the 'cycle' and I think that is correct. It is not something that can be solved through science.*"

Seo told me not having been able to feel such sacredness in the field in his first year of farming. Such feeling came after a few years of practising natural farming. For Shin, discovering the mystery of life and feeling the sacred in the field cannot be achieved through desiring it. Such a feeling arises by itself through being in the field. But she noted that the more one interacts with nature, the more likely it will be experienced:

> "*Feeling the sacredness in nature, awe, is not something I can get because I want it. It is a feeling coming by itself, like the term nature which means 'by itself'. It comes naturally. It is not made out of the desire of people. So through farming, in nature or in the forest, continuously interacting, this feeling arises by itself. I come to know it, respect it and consider it preciously, and how the role it plays is important in our human life and how it influences us profoundly. By being in the middle of it, I gradually come to know and realise naturally*."

Shin does not think that a farmer farming with conventional methods would be so open to such feelings and have as much opportunities to feel them: "*The current chemical farming is not supporting such experience of feeling the mystery and wonder of life. They separated everything, talking about this nutrient that nutrient, when nitrogen is needed just apply some fertiliser. Even if farming, a farmer relying on this type of chemical farming is not likely to be as open to such feelings of mystery and awe for life*."

Being able to feel the wonder and the sacredness of life, the beings around the farmers get covered in a layer of mystery and magic. So is Shin talking about her growing interest in seeds: "*Nowadays what has been on my mind is that this small seed is responsible for my being alive now.* […] *While I collect seeds and plant them, what comes to me is a very important feeling, a feeling of wonder. A sense of awe, of mystery in front of the source of life of this being. I'm thankful for being able to feel the mystery of the all-moving process coming from this seed.*"

Feeling the sacredness of life in the field reenchants the lifeworld and leads farmers in an attitude of reverence and respect towards life. Lee expresses this feeling of sacredness for things by referring to them as 님 (*nim*), which is a suffix expressing esteem usually added after names. He told me trying to think of every single being crossing his way as *nim*, making an effort to treat them with due respect: "*For a very long time, I have wanted to meet god. And one day I realised that every single thing was god, he was not in the sky. After that I called him 'nim', 'nim' being something bigger than god (the heaven in Korean tradition), God (of the Christian), something with no end. The cicada, this grape, the bird eating this grape all are 'nim'.*" Such feeling of sacredness and the perception of his own being as interconnected to the whole (see 4.1.1) lead him to extend this sense of the miracle of life to the Earth as a whole. At the beginning of my first conversation with him, Lee asked me "Where do you think Heaven is?". Laughing as I was answering that Heaven must certainly be in the peaceful backyard of his old *Hanok* (traditional Korean house), Lee told me that if Heaven existed, he could not think of any other place but our Earth. For him, the Earth was like a miracle amongst the numerous stars in the universe, a unique place endowed with the conditions required for life, where the butterflies could fly, and birds sing.

To conclude this chapter, I will briefly discuss the relational understanding of self that originates in the description of humans within the world provided by natural farming philosophy and in the personal experience of farmers interacting with nature in the fields. In accordance with many scholars as cited in the introduction to this thesis, the natural farmers I met thought that the environmental problems the world is currently facing originate is an inadequate perception of the self in the world coming from the felt separation and superiority of humans towards nature. Reconnecting through an evolving perception and establishing relationship, natural farmers strive to return to a non-dualistic unity, gradually shifting from a self-centred view, to integrate a wider network of relations. Davis (2011, p.137) depicts nonduality as "a range of experiences and stages of development in which particulars are perceived and understood as part of an all-encompassing totality".

This whole process is a process of inner growth, where the farmers revise their understanding of 'self within the world' through their interactions with living beings, reaching a humble attitude of reverence for life. The attitude of natural farmers that I could observe during my field work and in their writing could be likened to an 'ecological self-in-relation'. The concept of 'ecological self' was principally developed by environmental thinkers such as Leopold (1949), Næss (1988) and Plumwood (1991), who called for a "new shape of human identity that integrates an "ecologically informed" self-understanding with a corresponding set of practices and beliefs that would refashion human self-identity as part of, rather than separate from and superior to, the natural world" (Brown, 2014, p.143). In the case of the natural farmers I met and the writings I read, the philosophy and practice of natural farming tend to foster such process of forming an 'ecological self' as was described throughout this thesis. It could be further described as an "ecological self-in-relation" as exposed by (Plumwood, 1991,

p.20), manifesting as a self embedded in a "network of essential relationships with distinct others", recognising our relationship and continuity with nature. The view of nature proposed by natural farming is accepted and felt within the direct experience of the farmers, thus becoming a moral reality affecting practices and identity (Roepstorff & Bubandt, 2003). The ecological self-in-relation becomes a role in the narrative of natural farming that the farmers assume in the context of their lives. Sanford (2011) claims that assuming such roles is transformative, both practically and cognitively. Adopting an understanding of the self in the world close to an 'ecological self-in-relation', farmers adapt their practices to reflect this sense of identity.

Chapter 7: Conclusion

This thesis aimed to explore the incidence of natural farming philosophy on the farmer's understanding of self in the world and their practices, and the central role of perception in such process. The dialectical aspects of developing practices, perception and understanding of self in the world were illustrated in the experience of farmers. Through my research I highlighted the importance of several processes playing between these three aspects: experiencing the field through the senses, observing in a holistic, non-dual and relational way, establishing relationships with nonhumans beings, developing practice-related ethics, inner growth and moving towards an "ecological self-in-relation".

Unfortunately, as I will discuss in the next section, the limited amount of observation and data collected did not enable me to create a substantial theory, merely finishing a first exploratory phase providing some insights that could orient further theory development. A tentative framework of my current understanding of the links connecting the diverse elements which emerged in my study can be found in appendix (see Appendix B).

7.1 Limitations

My research is based on a limited number of informants mainly due to the small size of this study. As such, my results are not representative of the whole natural farming community, especially as most of the natural farms are situated in Japan. Access to farmers was limited as natural farming is still only in its early development in South Korea and due to my inability to access Japanese farmers for lack of linguistic skills or funding for hiring an interpret. Moreover, the major part of written material and previous research about natural farming has been published in Japanese, only a fraction of them having been translated into Korean and thus made accessible to me. As such, few previous studies enabled me to compare the data I collected in the field and through interviews. However, comparison between the farmers who participated in my study, and with the interviews collected by Kang and Lydon (Kang & Lydon, 2017), the books written by Japanese and Korean natural farmers, and my short visit to Japan enabled me to verify the relevance of my research focus and categories and to assess my understanding.

My research has also been restricted by my limited understanding of natural farming philosophy and inability to fully enter the mindset of the farmer. Adopting and understanding natural farming is an experiential process which needs continuous personal involvement within the natural farming fields. The few weeks I have spent at each farm restricted my capacity to access this understanding acquired from experience. Thus, I tried to redress my lacking understanding by constantly comparing the discussions of different farmers, verifying and exploring the categories I developed through discussions with my informants. In the second phase of the research, as my understanding was

growing and taking the opportunity offered by the interview process, I searched to confirm my understanding and emerging categories through the validation of my informants. I also attempted to preserve the expressions of the farmers and reflect their choice of words. A visit to Japan enabled me to conclude that practices of the Korean natural farmers I met were highly similar to the ones used by Japanese farmers and that they generally derived from a same understanding of the world.

My previous background in natural sciences impeded my research in several ways. First, my inexperience with qualitative research methods and initial theoretical ignorance about the topics under examination hindered the research process as they reduced my ability to collect relevant data and interpret them. Second, I experienced difficulties coming into terms with my own subjectivity and my direct impact through my beliefs, values and motivations on my research, as these aspects are generally dismissed in the 'hard' sciences (see next section). I could not follow fully the constructivist focus of grounded theory as my ignorance of social, cultural, historical phenomena blinded me partially to the background and structures in which the farmers were integrated. In order to remediate to these issues and explore my own subjectivity, I kept a reflective and methodological journal throughout my research. Identifying my preconceptions and assumptions helped to a certain degree in keeping closer to the words of my informants. Moreover, writing my thoughts helped in the process of distancing myself from my close involvement with my participants and data.

As mentioned earlier, I could not complete all steps of grounded theory to arrive at a solid substantive theory. Theory-building being a never-ending process (Charmaz, 2014), this research could be seen as an early stage in theory formulation. Due to the small number of informants and data collected, I could not saturate the categories I created. As such these categories should be seen as insight for further research. As my research was exploratory, I intended through this thesis not to build a solid theory or lay out 'truths', but to lay a groundwork for further inquiries into natural farming, which is still to my knowledge much unknown within the academic world. The links and processes exposed in this thesis should not be generalised to other farming practices, as well, although they offer some relevance for the study of natural farming in the Japanese context.

An important feature missing in my study was the comparison with other participant groups, such as organic and conventional farmers. Deeper and more comprehensive insights in the link between understanding of self in the world, practice and perception would certainly have been achieved through the comparison of farmers having adopted different farming systems. In my research, I have often referred to 'industrial farming' and the 'western tradition' as being a homogeneous whole, based on a reductionist, mechanistic approach separating humans from nature. However, such assumptions cannot be thoughtlessly applied to farmers of the western world, as it cannot be assumed that economic interest and rationality are the sole factors directing farmers' practices (Abaidoo & Dickinson, 2002). As farming is at the interface between humans and nature, interactions with life

forms in the fields and nature are unavoidable. Studying the ways conventional and organic farmers interact with nature, how their perception evolves from their engagement in the field, how they understand their role and status within the field ecosystem, how using machinery is linked to ways of perceiving the field would provide valuable insights in their adherence to specific farming systems and practices associated to them.

7.2 Implications

This thesis gave an entry to the vision of an agriculture based on connectedness with the living beings in the fields and the acknowledgement of their integrity, an agriculture that is based on and values life, a shared ecosystem in which humans are but a part of. However, the pertinence of such farming system can be seen as questionable when looking at it from an agronomic perspective, based on a modern ideology as presented in this introduction, as natural farming is in opposition to every single aspect of it. Indeed, natural farms are 'very-small-scale', production is low, farming is done with hand tools, excludes machinery and technology, is not economically profitable and do not rely on external suppliers. In that way natural farming is closer to gardening, involving intensive care of the crop plants, personal relationship, growth of farmers, and regarding more than the mere utility of plants. South Korean, and certainly European, conventional and organic farmers do not generally accept such method that they criticise as unfeasible, as natural farming principles run against 'good practices' in agronomy and to centuries-long agricultural history. The immersion into the way of thinking and narratives of modern civilisation render difficult the acceptance or understanding of the way of natural farming. Most of the natural farmers I met were not originally farmers, but urban dwellers who migrated to the countryside as they embraced this vision of natural farming. As not harbouring preconceptions about farming due to low previous knowledge and practice, back-to-the-land farmers are more open to such alternatives.

Although questionable in a modern agronomic perspective and as such not directly applicable to European farming systems, natural farming offers us the opportunity to question our farming systems, practices and our relation to others in the biotic community. Looking at natural farming not only in a narrow and mechanistic perspective, but rethinking our preconceptions and perceived 'common sense' and seeing it as the farmers mentioned it – a way of living and being in the world – natural farming reveals all its pertinence. As Nam mentioned, "*when agriculture is only seen as production, it could hardly be sustainable*". The objectives of natural farming are significantly different from the productivist aim of industrial agriculture. As mentioned previously, natural farming aims not only to cultivate crops but human beings as well. Natural farming offers an alternative narrative to the industrial farming system, based in metaphors of relationship, balance, valuing life, unity, inner growth, sacredness, healing. It fosters redefining our relationship to the Earth and the recovery of intimate relationships.

7.3 Personal note

Reading ‘Standing in the mysterious field’ by Kawaguchi prior to my field work, I was appealed by and found myself wondering about the essential component that represented grasses for natural farming systems. In my – short – farming experience, pulling out diverse types of weeds for hours in fields, I could not remember a single farmer holding a positive view on ‘weeds’. What would be the mindset, or inner landscape, of a farmer who accepted and welcomed grasses into his field?

This same practice that appealed to me is generally the most repelling aspect of natural farming for farmers coming from other traditions, or experts involved in agricultural research and production. I recall having been faced at numerous times with the incomprehension and criticism of ‘realist’ individuals, doubting of the capacity of such ‘romantic’ ideas to ‘feed the world’. I have been myself quite dubious at the start of my journey, even if opened, to the natural farming way. However, several lucky meetings along my research journey brought to me a new light onto this felt separation between ‘realistic feeding the world’ narratives and ‘idealistic farming’. Participating in an open discussion about degrowth soon after my return, my eyes were opened by the thought of ‘rethinking what is possible’. The invited speaker mentioned that within our current capitalist system, going to another planet to extract resources appeared more possible than closing IKEA on Sundays. This example struck me as similar to the case of natural farming. My own reservation about natural farming around its possibility to ‘feed the world’ originated in what had been described and implemented in me as ‘possible’ or ‘not possible’. Small-scale farming, self-sufficiency, hand work and labour-intensive farming were a reality in the past. Why not planting within the grass?

Listening to their stories, most natural farmers have been faced, at many times, by this wall of the “possible”, being categorised as “romantic idealists” as I have been called myself as well. On that side, an interesting discussion with the producers of the documentary “Final Straw” turned my perspective upside down, presenting natural farming to me not as the dream, but as the awakened reality: “*it’s not us who are dreaming but them who are living in fairy land with their technological solutions. I would tell them ‘what does your solution have to do with the reality of us human beings on the earth?’. When people say natural farming is disconnected from reality, it is not true, it is the opposite. They make their argument that economics is the reality, but that’s not true, the earth is reality, the air we breathe is reality. Their view of reality is not realistic. We have to bring them back to reality, not talk to them up there in the clouds.*” I believe that this is one of the main learning natural farmers can teach us. We need to get back the right to dream, the right to redecide and reimagine what is possible.

This thesis led me on a challenging but incredible journey, constantly experiencing and pushing back the limits of my reflection. I travelled into new theoretical territories, devising strategies, exploring new methods and discovering what Charmaz (2014, p.307) called "unforeseen theoretical heights". Having always been led by an extensive curiosity in a variety of domains, I took on the challenge of exploring new aspects of farming and unknown academic disciplines, taking me along the path of philosophy, ecopsychology and anthropology. These new perspectives guided me in the discovery of my subjectivity, exploring my embeddedness in my research. Initially untrained to see my traces in my research and awkward with placing myself as "I" in my research due to my prior education in 'hard' natural sciences where I strived to erase my presence as researcher, I progressively came to term with subjectivity, rethinking the previous commitment to objectivity – a myth, according to Bernard (2006) – that was pursued in my Bachelor studies.

My research process, especially in its early stages, has been much hindered by an incessant questioning arising from my readings. Discovering a new perspective, I ceaselessly questioned the foundation of natural sciences as I had learnt it, the construction of knowledge, the nature of reality, the different ontologies and epistemologies. I was totally captured by the philosophical topics I had dived into and jumped with equal passion in the philosophy of natural farming. This present year I lived a very intensely reflective period that has been significantly transformative. I believe that such process, starting in the ending phase of my Bachelor in environmental sciences, amplified during my master in agroecology and reached new heights during this thesis. Having realised anew my naivety as an "objective" student of natural sciences, I am now at the start of a journey in the exploration of the "internal" complexity of reality.

This journey was not only a journey of my growth as a researcher but also as a human being. Pondering about it for some time, I came to the conclusion that self-development was not an individualistic process: as Zask (2016) mentions, the more self-assured, cultivated and stable I am as an individual the more I can actively contribute to the group in a dynamic way. This research journey challenged my own perspective of the world, influencing significantly my thinking and life direction. I was led into rethinking my status and relationship to the wider nature in new ways. This research touched on some ontological and ethical aspects that I had not considered previously. It pushed me to reflect deeper onto some essential questions that are in normal life so easily pushed aside – How to live on this earth? – and to explore my own complexity. I do not know if this research will inspire such reflections in the reader. If nothing else it has certainly succeeded in planting in me a seed of change. Natural farmers inspired me to "live the answer, not the question", following the advice of Cha:

"생각하는 대로 살지 않으면 사는 대로 생각하게 된다"

"If you do not live like you think, you will think like you live."

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Appendices

APPENDIX A: Inventory of collected data

Table A-1: Data collected at the seven Korean farms that I have visited between April and September.

Data source	Notes (pages)	Recordings (hours)	Pictures	Mapping	Documents
FARM 1	30	Semi-structured interview: 2h12 (22 p. transcript)	497	1 farm map	Book written by farmer
FARM 2	Farm stay = 35 Earthschool = 20	Semi-structured interview: 1h20 (14 p. transcript) Informal conversation: 55min (8 p. transcript)	560	1 farm sketch	Farmer's own writing: books and online publications
FARM 3	16	Semi-structured interview: 1h46 (17 p. transcript) Informal conversation: 5h (15 p. transcript)	352	1 official farm land map 1 vegetable fields sketch	Documents posted on farmer's blog
FARM 4	7	Semi-structured interview: 2h24 (20 p. transcript) Farm visit: 2h Informal conversation: 2h	171	-	-
FARM 5	5	Semi-structured interview: 1h20 (15 p. transcript) Farm visit: 1h	122	-	-
FARM 6	4	Semi-structured interview: 1h Farm visit: 1h	104	-	Answers to interview from emeritus professor of Seoul University Videos recorded by the same professor
FARM 7	3	Semi-structured interview: 1h (5 p. transcript)	56	-	Book written by farmer

APPENDIX B: Tentative framework

This framework is a tentative interpretation of my categories and the link between them as I understood them at the time of writing this document. The links I proposed between the categories should be taken with caution as my short, exploratory research did not enable the creation of a thoroughly developed theory.

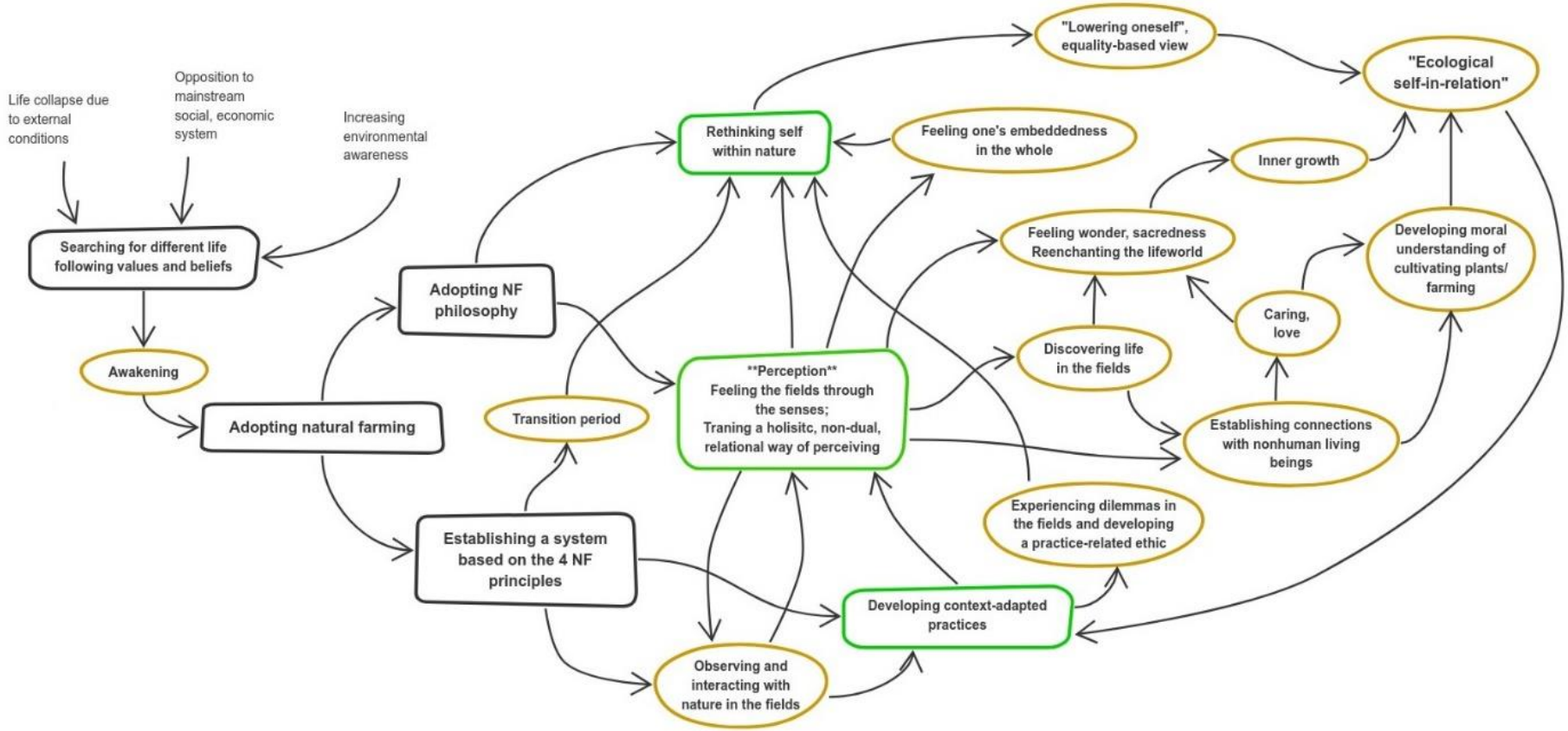


Figure B-1: Tentative framework build on my current understanding of the processes playing between understanding of the self within the world, perception, and practices of natural farmers in South Korea. In green are represented the elements of my research questions: developing practices, understanding of self in the world, and perception. In orange are the categories that I developed in my research.

APPENDIX C: The natural farming system

In this section, I aim to illustrate the "natural farming system" by shortly presenting its management characteristics and describe in pictures the two farms of Lee and Nam.

Main characteristics of the system

Natural farming systems are based on the revitalisation of natural ecosystems in the field. the adoption of no-till, growing grasses and accumulating mulch fosters soil building processes. Farmers noticed their soil improving, becoming more porous and darker with the years. The increased water retention capacity associated with a permanent soil cover enables to retain soil moisture. A functional soil ecosystem gradually reappears, the whole process taking a few years and generally leading to poor harvest in the first years of establishment of the system. Organic matter is stored in the soil with the continuous accumulation and incorporation of the grass mulch. As such, grasses are a key element in the fertility of the whole system, leading one farmer to consider them as a "coin bank" for storing solar energy. Through re-establishing a functional ecosystem, the farmers believe that the diversified biodiversity will have a self-regulating effect through the food chain and will eventually not require any intervention by the farmers themselves.

Management

I could observe several management options that were adopted by most of the natural farmers. Here is a non-exhaustive list:

- **Mixed cropping:** Natural farmers usually grow around 70 different crops in a same field, although generally separated in different lines. Some beds are equally planted with two to three different crops (for example broccoli, tomatoes and chili peppers beds on Nam's field, or corn-beans beds on Choi and Cha's fields).
- **Intercropping:** The next crop is often planted within another crop reaching maturity. Young seedlings grow at the feet of the maturing plants which are harvested soon after leaving the space for the seedlings to grow.
- **Fertilizing internal to system:** Many farmers use diverse substances produced within the system to fertilise the plants needing the most nutrition. Lee uses rice bran and chaffs that he spreads in small amount next to each crop plants. He equally makes a compost with vegetable scraps from the kitchen, excrement from the composting toilets, and other plant residues. Nam uses urine collected at home.
- **Watering:** In natural farming, a well-built soil associated to a permanent soil cover should keep the soil moist and thus get rid of the need to water the plants. However, farmers have

reported a trend towards warmer and drier springs in recent years. They have started watering plants (with surface water or underground water depending on availability) during dry periods. Many of them also water young seedlings just transplanted to help with their establishment.

- **Planting perennials:** Farmers are keen to increase the percentage of perennial plants in their fields as they demand less work than annual crops. Farmers are such fostering the growth of wild edible herbaceous plants growing in the fields and planting several bushes and trees, providing fruits, nuts, leaves, or habitat for wildlife.
- **Growing seedlings:** Most of the farmers were growing seedlings for transplanting in the field in greenhouses (or at home for Choi and Cha who did not possess a greenhouse). As the Korean weather is quite cold during the winter and early spring, growing seedlings enabled planting soon enough for the plants to reach maturity before disabling conditions take over (summer heat, end of season).
- **Using microclimates:** Through observation of the fields, farmers get knowledge about the different conditions spread around the field. Many of them use these conditions when planning where to plant their crops.
- **Using natural and degradable materials:** Conscious of the negative impacts of artificial substances and materials on the ecosystems, the farmers try to avoid using plastic and other synthetic materials. All of them are against using *vinyls*, thin black plastic strips that Korean conventional farmers spread on their field to prevent the growth of grasses.
- **Hand work, using hand tools and simple technologies:** For work is mainly used a single tool: the saw-edged sickle or *tobnat*, which is used for cutting the grass, digging the soil. Some other hand tools such as the hoe or *gwaengi* are occasionally used. Natural farmers often prefer to use simple technologies used in the old days for processing the harvest, such as threshing wheat, barley or rice sheaves.

Following, I will present two examples of farms – the farm of Lee and Nam – in pictures, for the reader to be able to create an image of how the natural farming farms and field takes shape in the physical world.

Example 1: Lee and Lim's farm: self-sufficiency natural farming

The system established by Lee and Lim is based on self-sufficiency and close to the system of Kawaguchi. It is composed of two areas of vegetable fields, a rice field, a forest field, an area used to grow grain and "heaven's garden/forest".

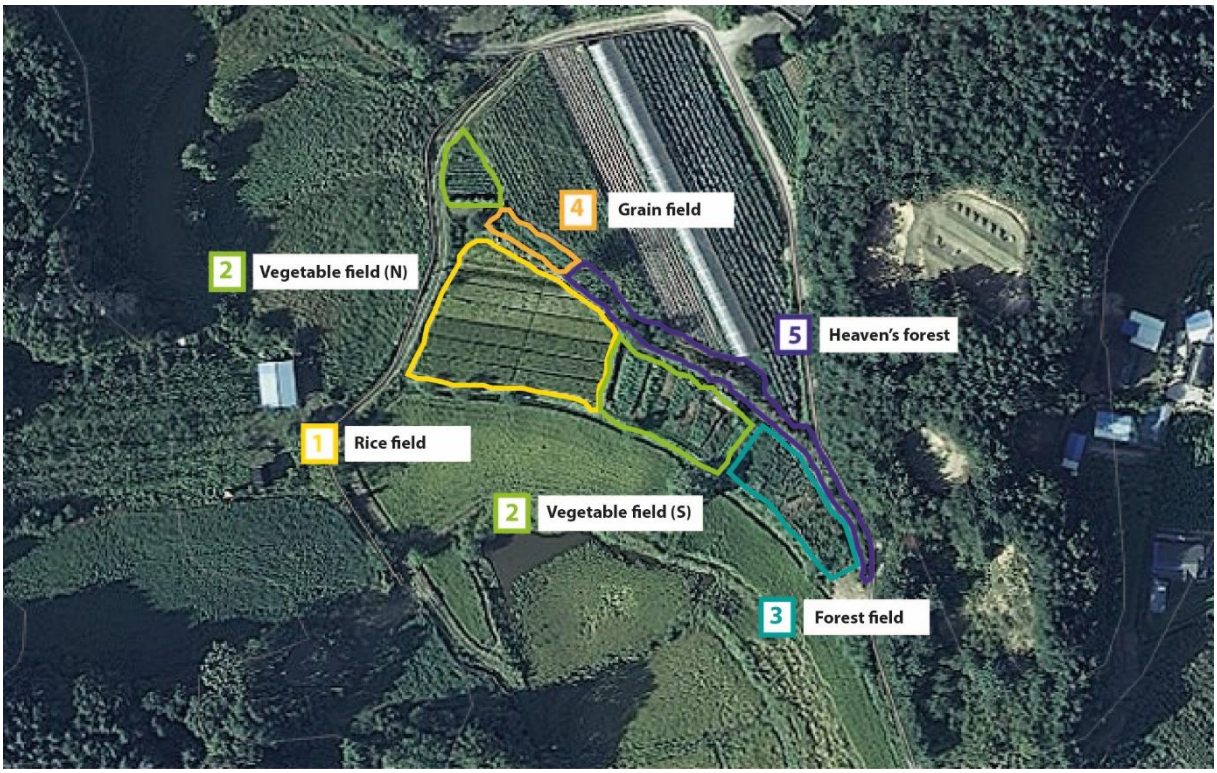


Figure B-1: Map of Lee's farm. Source: map.naver.com, ©Naver/SPOT/Korean National Geographic Information Institute.

1) Rice field

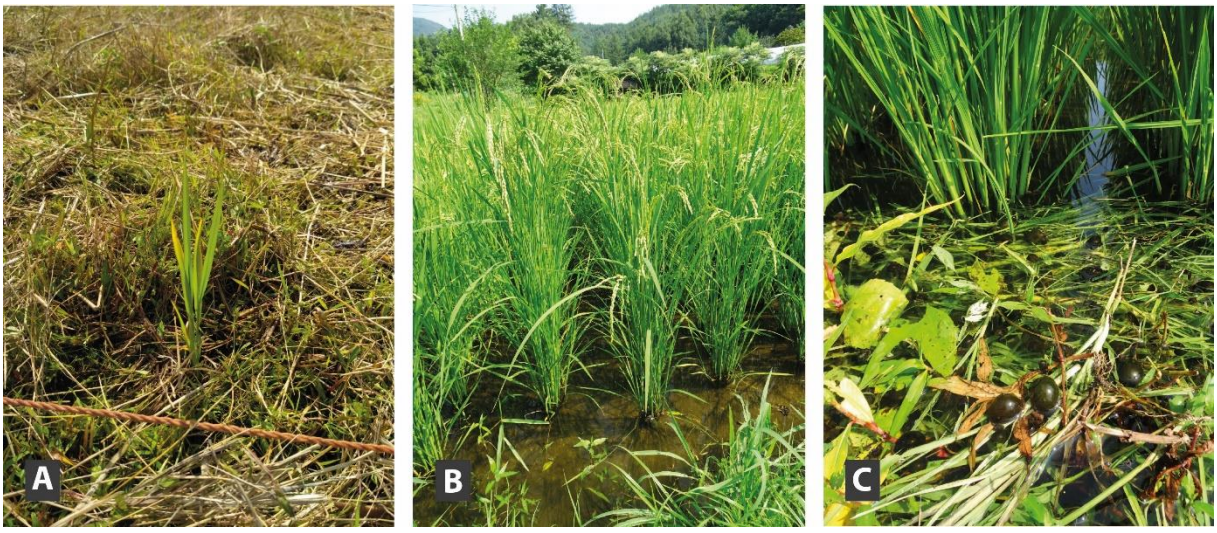


Figure B-2: A) Seedling just transplanted in the field. B) Rice growing in August. C) Freshwater snails feasting on grasses, that were used by Lee and Lim to hold back grasses this year as they were busy building their new house throughout the summer.

Rice is seeded in nursery area within the field, and the seedlings are transplanted in early June by hand within the grasses, cut beforehand. The field is then flooded, and grasses are once again cut between the growing plants later in the season.

2) Vegetable fields

The vegetable fields are divided in several rectangular spaces planted with over sixty different crops, usually on lines in the width of the fields.

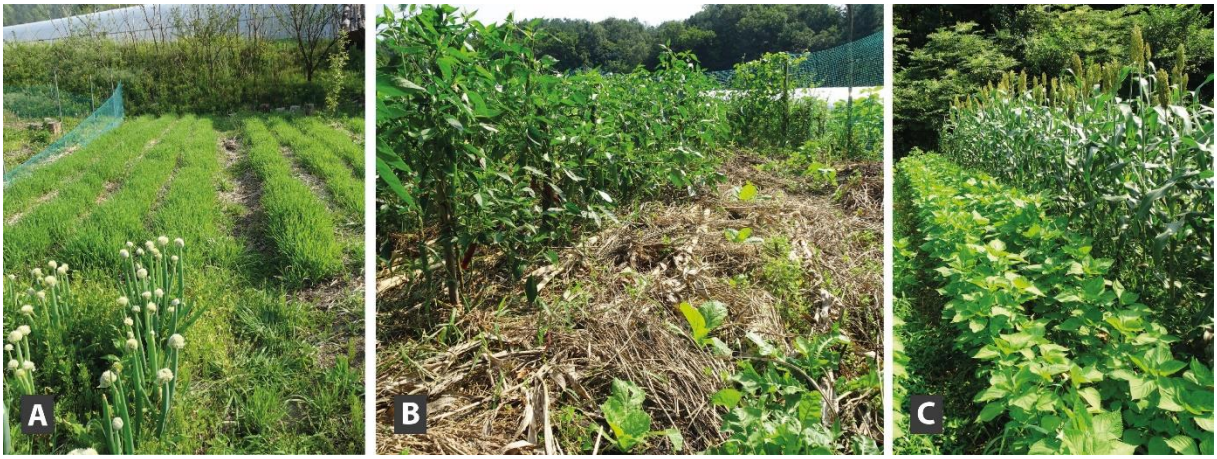


Figure B-3: Vegetables fields. A) Flowering leek in the forefront with young barley behind. B) Chinese cabbage seedlings just transplanted below mature chili plants. C) Perilla on the left, much loved by the whole family, which is grown for its delicious leaves and seeds used to make oil. Sorghum growing on the right.

3) Forest field

The forest field is composed of naturally occurring trees, as chestnut trees, mulberry and willow, and trees intentionally planted by Lee and Lim. Diverse fruit and nut trees can be found in the fields: plum tree, apple tree, pear tree, cherry tree, walnut tree, sumac, Japanese angelica tree, Japanese apricot tree, jujube tree, locust tree, oak. Edible wild grasses grow under the trees, naturally occurring or intentionally planted.

Figure B-4: Forest field in May (A) and August (B and C). Edible grasses are mainly harvested in spring and early summer, the wild plants later left to flower and complete their reproductive cycle.

4) Growing grains

Grains are planted in the field as vegetables on parallel lines. Barley, rye, sorghum are cultivated in the fields as complementary to rice.

Figure B-5: A) Young barley growing in the fields. B) Harvesting wheat. C) Harvested wheat drying on a rack.

5) Heaven's garden

The last part of Lee and Lim's farm is "heaven's garden", a green belt surrounding the field. naturally occurring trees and grasses are left to grow there as they please. Lee have transplanted in some parts Japanese angelica tree, producing tasty shouts in spring time. Heaven's garden exhibits a rich vegetal diversity and offers an undisturbed habitat for biodiversity.

Figure B-6: A) Vegetal belt surrounding the vegetable field. B) Trees and herbaceous plants bordering the rice field. C) The diverse flowers and plants in heaven's garden attract the surrounding fauna.

Example 2: Nam's farm: professional farmer's natural farm

Nam's farm extends over an area of 3 hectares and is composed of two rice fields, two vegetable fields, an orchard, a pond and some unused areas for future use. As Nam is a professional farmer, his natural farming system could be described as more structured than self-sufficiency-based systems. Efficiency was an important factor to take into consideration for production exceeding his own needs.

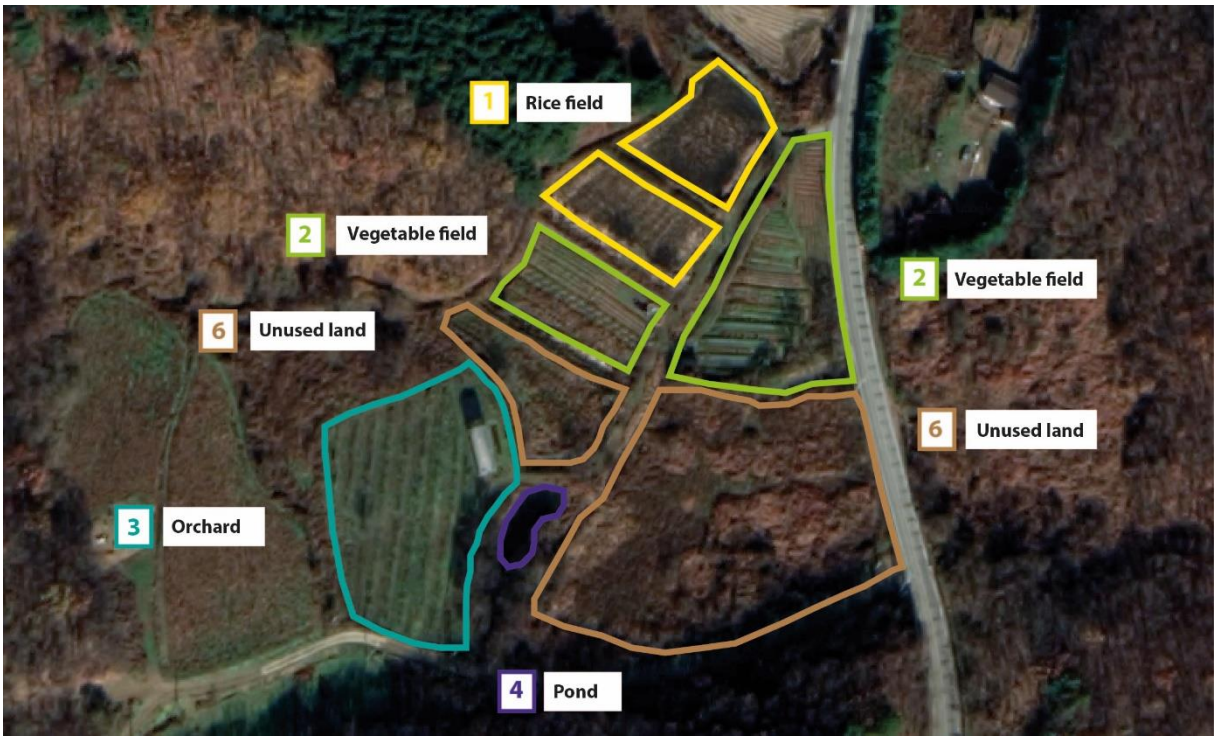


Figure B-7: Map of Nam's field. Source: www.google.com/maps, ©2019 SK Telecom

1) Rice fields

Nam borrows four rice paddies from a neighbour. Of them, only the two lower ones are used to grow rice, the upper one being vacant and the upper middle one being currently used as a vegetable field. The rice paddies are covered by a layer of water during the whole year, as Nam believes that withdrawing water and putting it back in the paddy is each time destroying the ecosystem and killing all the water organisms living there. He found that in the old time some rice paddies were covered in water all the time and decided to use this method in his two paddies. The water is filled naturally as the paddies were established on the waterways from the surrounding mountains. The bottom of the paddies is not completely sealed and water flows from one paddy to the next one, making it not possible to use machines for rice cultivation. One month of work during the season is needed for the two paddies (five days each for planting, five days each for maintenance after two weeks, five days each for harvest). When planting, the water is lowered to around 5cm and two species of herbaceous plants are removed. The other grasses deemed unproblematic are left in the paddies. The seedlings are planted in the middle of the remnants from last year's harvest. These and the returned rice straws take

two years to fully decompose and return nutrients to the paddy system. After planting, the water is raised to 8-10cm. After two weeks, he removes the same two problematic grasses and make sure that each young rice plant is correctly planted in the soil.

Figure B-8: A) Upper rice field, with young rice plants growing within the remains of last year's harvest. B) A young plant of rice surrounded with an aquatic plant, that Nam leaves in the rice field as it does not grow tall and covers effectively the water surface.

2) Vegetable fields

The southern field next to the road side (right on the map) is mainly used for vegetable production on east-west aligned beds. There is from one to six crops per bed. On the southern side, diverse type of grains (barley, millet, sorghum) are grown on beds as well. An area on the north west is left wild as trees were originally growing there. Under them are low bushes and perennial grasses. Next to the wild area, eight little beds perpendicular to the main beds are used for growing herbs, strawberries, ginger and leafy vegetables.

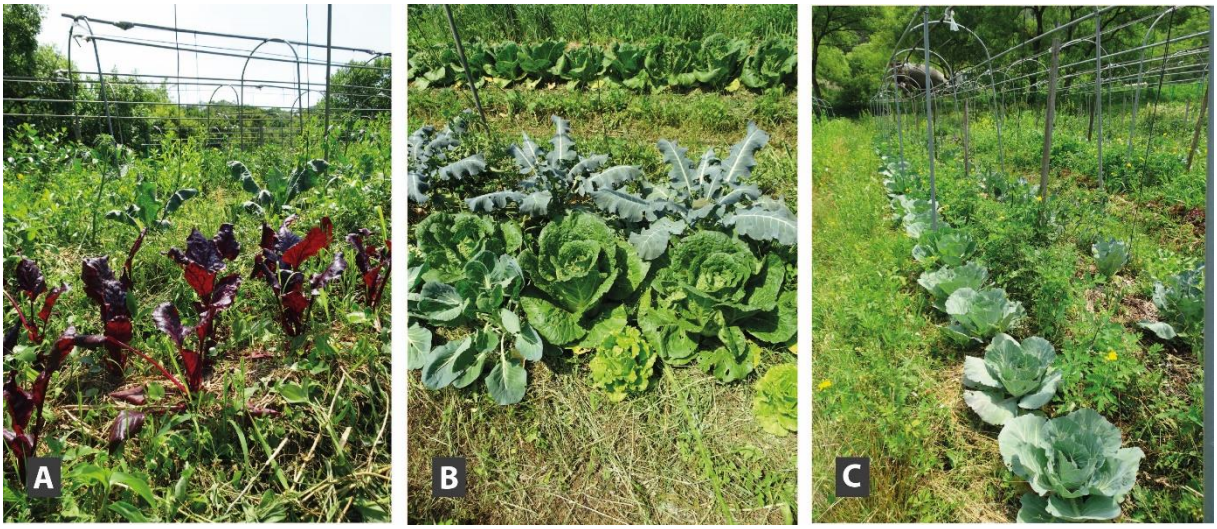


Figure B-9: Vegetables growing in Nam's field. A) Red beets growing within the grass, with tomato and broccolis in the back. B) Multiple cropping on one bed, with Chinese cabbage, broccolis, salads and cabbages. C) Structure of the vegetable fields, arranged as aligned beds separated by strips of grass.

The north-eastern field (left on the map) was formerly a rice paddy but has been transformed into a vegetable field. After experimenting with the rice-growing method of KY in that area he finally decided to convert the already built 4 meters wide beds into vegetable beds. As this whole area is quite humid, he plants there vegetables which like humid conditions (onions, garlic, carrots, broccoli, etc.). Much of the space is not cultivated yet.

3) Orchard

Nam planted several apple trees several years ago. He recently planted several other fruit trees to diversify fruit production. Nam leaves grasses growing below the trees, thinking that they are part of the 'network' of this tree. A greenhouse is located in the orchard, used for growing the seedlings to be planted in the vegetable fields.

Figure B-10: Apple trees growing in the orchard (A) and newly planted fruit trees (B).

4) Pond

The pond in the middle of the farm was built for fish raising. Built with a depth of two meters, the pond is a useful reserve of water in case of drought (the level never dropped more than 10 cm following use of the water). The pond is alimented by a natural spring. Nam told me that the way it was conceived did not create much value from an ecological perspective. Mushrooms are cultivated on a border of the pond, shadowed by the surrounding trees.

Figure B-11: A) Pond with surrounding vegetation. B) Mushrooms growing on the border of the pond.

5) Wild areas

Many areas of Nam's farm are left in a 'wild' state, leaving grasses and trees to grow in them naturally. Such areas can be found inside the vegetable field, with patch of untended grasses, on the borders of the fields with middle-sized trees, along the paths between the different units.

Figure B-12: A) Grasses growing along the path going from the rice and vegetable fields to the orchard. B) Trees, shrubs and herbaceous plants growing in a corner of the vegetable field. C) Patch of grasses growing within the vegetable field.

APPENDIX D: Elementary practices of natural farming

Humans interventions in the field are mainly centred around planting seeds and seedlings, taking care of the growing plants through managing the surrounding grasses, harvesting. I will present here concisely the essential practices of natural farming as they were carried out by most of the farmers.

Natural farming tools

Before describing practices, it is essential to mention the main tools used in natural farming. The *tobnat*, a saw-edged sickle of Japanese origin, is a must-have for natural farmers. It is principally used to cut grasses, which is in quantity of work the most important activity of natural farming. On farm 2, Lee and Lim used a *gwaengi* (hoe) to complement the *tobnat* for grass-cutting. Farmers also usually use grass-trimmers when the growth of the grass passes their capacity to work manually.

Figure C-1: Teobnat ready to be used.

Planting

Seeds or seedlings are planted within the grass in different ways. As crops are planted manually, they easily can be interplanted for better use of the growing space and time. First, the grass located on the direct area that will be planted are cut down at soil level with the *tobnat* (saw-edged sickle) and put aside. Coarse roots are removed, the others left in the soil as food for soil life. Farmers try to disturb the soil as little as possible by only digging holes fitted to the size of the seeds or seedlings to plant. According to the characteristics of the crop plants, the season, state of the grass, farmer chose between planting them in round, in a continuous line, total area.

In small rounds

Adapted for: 1) vegetables growing widely like Chinese cabbage, broccoli, 2) vegetables growing tall like tomatoes, eggplants, corn, 3) vegetables climbing up, like beans, 4) potatoes and sweet potato, as all these types of crops can compete with grasses and coexist with them. Most used planting method.

Figure C-2: Planting Korean melon in early June. A) Grasses are cut at the 'life's point' on a one palm-wide circular area. B) The seedling is plated in the centre of it. C) The cut grasses are put s mulch around the transplanted seedling.

On lines

For leaf vegetables, spinach, carrots, radish.

Figure C-3: Planting carrots in late April. A) The mulch is opened in a continuous line in the length of the bed after the grasses on top of the beds have been cut. B) Seeds are placed in the middle of it and covered with a thin layer of soil. C) The grasses previously cut and set aside are used as a mulch to cover the seeds.

On a whole square area

On some occasions, whole squares of soil are uncovered generally for planting leaf vegetables or establish a seedling nursery. When grasses have grown tall, grasses are sometimes cut on the whole beds.

Figure C-4: Preparation of a bed for planting seedlings. A) Grasses are cut at the life point and put aside. B) The grasses set aside are cut in shorter segments and spread on the bed as mulch.

Managing grass

The ways of managing the grasses are different according to the season, the crops, the grasses species, and the specific practices of each farmer.

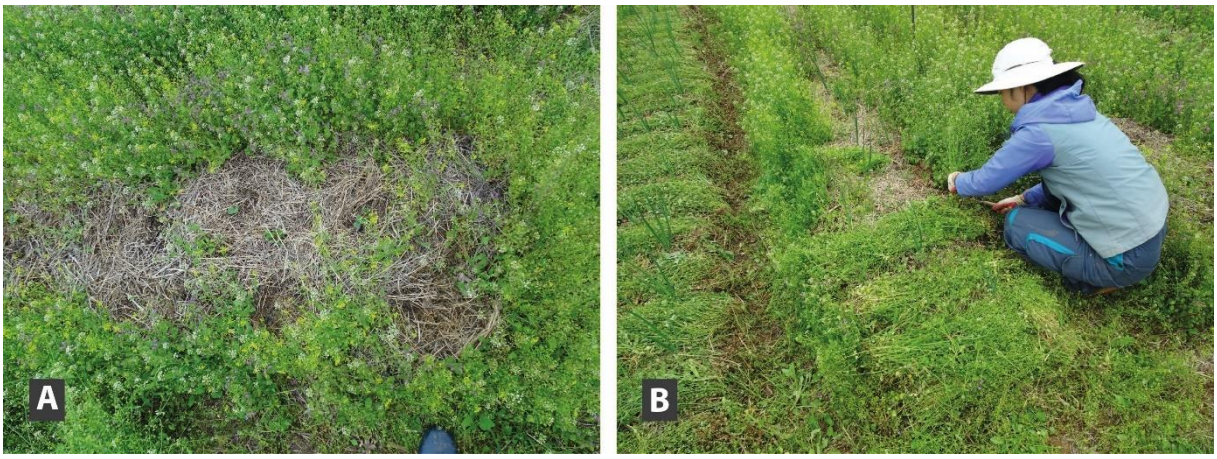
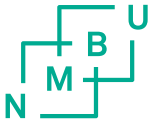


Figure C-5: A) Potato bed before grass cutting in April. The grasses on top of the bed are fewer as the mulch hindered their growth. The grasses on both sides of the beds are growing tall. B) Grass cutting on an onion bed in April. Grasses on the beds and on one side of it are cut and laid between the rows of onions.

Figure C-6: C) Grasses have been cut on the onions and potato beds in April. One side of the bed still has grass to provide habitat for the fauna. The freshly cut grasses spread as mulch dry within a few days. D) Ginger plants growing in one bed. Surrounding grasses have been cut and spread as mulch around them.

Figure C-7: E) Cutting grasses in the sweet potato beds in August. The grass has been growing tall and covering the sweet potato, as the farmers missed the right timing for grass cutting. Missing the timing can significantly affect further growth of the crops. F) Cutting grasses in the corn and beans field in August. The grasses growing almost as tall than the crop plants, they are cut and spread as mulch in between the crop plants.



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