

AGRICULTURAL TRANSITION

a different logic

Angela Hilmi



The More and Better Network

About the cover page

The cover page represents mycorrhizal fungi.

Thousands of mycorrhizal fungi have lived in symbiosis with practically all existing plant species for 450 million years. They are the most important component of soil fertility. The long threads or hyphae of the fungus (the mycelium) build an extended network underground that connects different plants and fungi together within an intricate web of beneficial relationships. The fungus approaches the plant that recognizes it as a “friend” and inhibits its defense mechanisms. It gets inside the root to form arbuscules of highly specialized branches with fine tips to exchange nutrients and signals, and then spreads into the soil over long distances with up to one metre of hyphae per centimetre of root, to absorb nutrients and bring them to the plant. The system is so efficient that the plant will “relax” and no longer absorb the nutrients directly letting the fungus work for it. The fungus has enzymes that allow the release of phosphates from organic sources the plant has no access to, as well as access to other minerals beneficial to its health, and protects the plant against stresses which can be biotic (pathogen attack) or abiotic (salinity, heavy metals) while enhancing soil structure by forming aggregates. The fungus gets the carbon it is unable to photosynthesize by itself from the plant. Plants hosting mycorrhizal fungi show evident signs of well-being, with better foods (minerals) and a better tolerance to stress. In addition, the fungi redistribute energy sources within the community. They transport sugars synthesized by plants to other plants. Thus, mycorrhizae, the roots of well-being, represent the beneficial network of the underground; an extended web of relationships and reciprocity. In the same way, the web of peasants, invisible to many, is enmeshed within living nature and extends far beyond its immediate borders through an intricate web of relationships and reciprocity that participates in regenerating local ecologies and economies.

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Preface

The planet continues drifting on the waves of international meetings while powerful peasant movements are organising. The present levels of human and nature pollution brought about by an agro-industrial model are not sustainable in the long run. A transition is needed that takes into account what farming is and who the farmers are. New tools and mechanisms are to be invented with a shift in focus. This needs a revisiting of preconceived assumptions and rigid approaches. Rather than perpetuating the idea of the poor small farmer, it is time to understand family farmers, also called peasants, for what they are: solid professionals with wide skills, rooted in time and space, with the ability to produce value at local level and wealth at global level. The biggest confusion has been to imagine that peasants function with the same logic as business entrepreneurs. But their degree of autonomy, their contact with nature, the quality of their labour and their relationship to markets are totally different. Rather than blocking the hidden potential for intensive farming on offer in local communities and rather than ignoring the ability to produce with nature in a way that opens up future choices, the proposed transition is one that builds upon these skills. Viable forms of farming exist and are evolving in different parts of the world and many transitions are proving successful. Twelve steps are proposed here, together with their supportive policies, to accompany and trigger transitions towards ways of crafting the living world in the rural and the urban environments that are more adapted to the third millennium.

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Oslo, Norway May 2012

Aksel Naerstad

Editor and coordinator

Introduction

One could think that everything has already been written about agriculture. Agriculture has been described in its different forms and patterns and presented through differing lenses representing differing interests. Agriculture is, after all, an arena of divergence and contrasting views. What is common though is that it concerns each and every one of us; not only does it provide our daily foods, but it is also intimately related to the landscapes in which we are embedded. Somehow we are all nested within agriculture, and like all things too familiar to us, we do not realise it fully.

Over the years, a growing discomfort has developed: the feeling that agriculture is not what it should be; that the state of affairs is not a satisfactory one. On the one hand, concentration and control are exacerbating marginalisation and exclusion. On the other, evidence of thriving communities using agricultural practices in harmony with their environment has been extensively documented but they remain isolated. What is it then that precludes the spreading of these million dots of wealth? This is the question underlining these pages.

While concerning all of us, agriculture is the ground of farmers. Strangely enough, the many other players in this field seem to know better. In the last decades, they have been endlessly dictating best practices with varying degrees of success. In this context, the world's largest farmer movement wrote in 2010:

There is no future for humanity or for the planet in this dominant food system. In fact, there is scarcely a present. (...) If we can agree that small farm agroecological systems are more productive, conserve soils and restore the lost productivity of degraded systems, and are more resilient to climate change, then the key question is not whether we should, but how we can, promote the transition to such systems (La Via Campesina, 2010).

This “how we can” is at the heart of this paper. Is there any way to accompany a transition towards patterns that can be acceptable in the third millennium? Neither those of the past, nor those based on imaginary technical fixes, but simply the realization of “existing utopias”, already proliferating in different forms, and still to be invented and re-invented again and again.

The first part of this paper looks into the ways we perceive the world and how it influences the way we mould it; it also looks into the entangled beliefs we cling to. The second part takes a 360 degree overview of the horizon to scan the drivers of a possible storm. It provides viable examples of transitions in different continents and of unviable practices with high environmental and social costs for humankind. The third part presents what is at the heart of this paper: the different logic that can allow a transition towards value at a local level and wealth at a global level. The fourth part is about the transition itself, the proposed steps, those who can make it happen, the policies that facilitate it, and a mechanism that can accompany this transition.

PART I – PERCEPTION



**The Mindset
Misconceptions**

PART I – PERCEPTION

Summary

This section is about taking a few steps back and getting an overview of the depth of our beliefs. It concerns all of us. If we are farmers, we may know more about our relationship to nature and the living world, and if we are investors, we may know more about the fear of losing. We all know something but how much are we prepared to question what we know? There cannot be a shift, nor a transition, without a prior questioning of beliefs without a moment of doubt; without a reassembling of thoughts; without a different perception of our surroundings; without opening up to the unknown. The world for many and, especially for peasants, is becoming asphyxiating. The control by a few has strangled the space between those who eat and those who produce that food; like a balloon being squeezed in the middle. These pages are about releasing that pressure. For those of us who are family farmers or related to agriculture one way or the other, this is about putting aside the panic of immediate threats, extending the limit of the horizon far beyond our sight, forgetting about forced balances and stocks, opening up to reconsider our immediate surroundings and trying new contours. It is the opportunity for new ingredients and different recipes A way to bring back ecologies and economies into a more promising shape and carefully redrawing the way.

The Mindset

Any athlete knows that before she can be at her best, she (*he* or *she* are used alternatively in this paper) needs to warm up. The first section of this paper is a warm up of the brain for all of us. Before moving on in any step of a transition, a fresh look is needed. But here things get complicated. What is a fresh look at the things around us? As David Linden (Linden, 2007) explains in his book, *The Accidental Mind: How Brain Evolution Has Given Us Love, Memory, Dreams and God*, we go through our everyday lives trusting our senses to provide us with a true view of the external world. In reality, the feeling that our senses are trustworthy and independent reporters, while overwhelming and pervasive, is simply not true. Our senses are not built to give us an “accurate” picture of the external world at all. Rather, through millions of years of evolutionary tinkering, they have been designed to detect and even exaggerate certain features and aspects of the sensory world and to ignore others. Our brain blends this whole sensory stew together with emotion to create a seamless ongoing story of experience that makes sense. Simply put: in the sensory world, our brains are messing up with data.

Basically, the point here is that, contrary to our belief, the human brain is not a beautiful optimum device, but rather a cobbled-together mess which, amazingly in spite of its shortcomings, manages to perform a number of very impressive functions. The particular texture of our feelings, perceptions and actions is derived in large part from the fact that the brain is not an optimized, generic problem-solving machine, but rather a weird agglomeration of *ad hoc* solutions that have accumulated throughout millions of years of evolutionary history.

This is why what we take for granted or accept as solid truth often needs revisiting and so do the tools that we use to measure reality. A good example is the recent redefinition of the for a long time unquestioned Gross Domestic Product (GDP) in the 2009 Report of the Stiglitz Commission on the Measurement of Economic and Social Progress which states that, “what we measure shapes what we collectively strive to pursue, and what we pursue determines what we measure”. It considers that GDP provides misleading indications about how well-off people are and therefore needs adjustments. For example, traffic jams may increase GDP as a result of the increased use of gasoline, but obviously not the quality of life. In a way, when we change the way we measure, we transform the way societies look at themselves and, therefore, the way in which policies are designed, implemented and assessed.

Also important to realize, is the extent to which our perception of the world around us is being narrowed and distanced from the natural world. In *The Spell of the Sensuous*, David Abram (1997) talks about this link to nature and how it impacts our behavior. He says:

Today we participate almost exclusively with other humans and with our own human-made technologies. It is a precarious situation, given our age-old reciprocity with the many-voiced landscape. We still need that which is other than ourselves and our own creations (...). This does not mean that we must renounce our complex technologies. But it does imply that we must renew our acquaintance with the sensuous world (...). Without the oxygenating breath of the forests, without the clutch of gravity and the tumbled magic of river rapids, we have no distance from our technologies, no way of assessing their limitations.

So, if we accept for a moment, while deciding to take a fresh look, that our brain is just a kludge, “an ill-assorted collection of poorly matching parts, forming a distressing whole, (...) a design that is inefficient, inelegant, and unfathomable, but that nevertheless works” and that our perceptions of the world have been narrowed and distanced from nature, we can start to question the tools and methods we use and wonder if they still fit the third millennium. For these tools have over-exaggerated objective forms of knowledge, leaving all too often other more subjective forms of knowledge aside.

For this warm up then, let us pick up some oxygen by:

- leaving threats outside
- extending the limits of time
- dropping the equilibrium ideal
- starting local, and
- opening up spaces

Leaving threats outside

In our present line of action, the trigger of our decisions is based on fear. Fear that there will not be enough food by the year 2050 and that we urgently need to find a way to produce 70 percent more food for the world, fear of the collapse of the ecosystem services and of nature in general, fear of the extinction of species including the possibility of the extinction of the human species itself, fear of the warming of the planet, fear of the cataclysm of sequential crises economic, financial and fuel etc.

John Beddington, the UK Government Chief Scientific Adviser, has used the phrase *perfect storm* to describe the future coincidence of food, water and energy insecurity (Beddington 2009). *Reaping the Benefits*, the UK Royal Society 2009 publication states that:

The food component of this ‘storm’ is unavoidably global. Food markets are highly globalised. Countries are substantially interdependent on each other

for their food supplies and will share the impacts of the global instability generated by food insecurity. Following its own assessment of worrying trends to 2050, the Food and Agricultural Organisation of the United Nations concludes that, 'the result could well be enhanced risk of persistent food insecurity for a long time to come in a number of countries in the midst of a world with adequate food supplies and the potential to produce more' (FAO 2006).

The drivers of chronic food insecurity are described as follows (The Royal Society, 2009):

- Increasing population;
- Changing and converging consumption patterns;
- Increasing per capita incomes, leading to increased resource consumption;
- Growing demand for livestock products (meat and dairy), particularly those fed on grain;
- Growing demand for biofuels;
- Increasing water and land scarcity;
- Adverse impacts of climate change;
- Slowing of increases in agricultural productivity.

The question here for all of us is: is fear really the best trigger for action? Though probably very justified, rational and grounded on verified data, isn't this emphasis on dramatic forthcoming events triggering us to rush planning and isn't it acting as the tree that hides an unknown, invisible or made invisible forest? Is this feeling of urgency forcing us to look at reality with selective narrowed lenses? Forcing us through a technological fast *Emergency Exit* that we may perhaps not have chosen had we looked at it through different lenses? Aren't there other things out there which we do not *see*, but are nonetheless happening, that we do not *hear* about, but are nonetheless being voiced? Can we choose more diversified paths? Frances Moore Lappé asks in her latest book, *Ecomind: Changing the Way We Think, to Create the World We Want*, (2011), how we frame our problems: "Guilt", she writes, "is a pretty lousy motivator".

Extending the limits of time

"Rushing out"; how many times do we hear or see this sentence? If there is a paraphrase of our times it is this one: "rushing out". Out of what? The waltz of endless meetings, conferences and roundtables where many people speak and few listen. The permanent emergency of the state of affairs, the constant precipitation, the overwhelming amount of things to be achieved in a short timespan. The continuous lack of time, acting as a sort of adrenaline to spear short and quick

action that gives the illusion of control over things and people. The Long Now Foundation¹ talks about a “pathologically short attention span”.

In reaction to this constructed emergency, computer scientist Daniel Hillis, and biologist Stewart Brand, built the Clock of the Long Now, a clock that will provide accurate time for the next ten thousand years. It comes as a realization of this short term trend:

The trend might be coming from the acceleration of technology, the short-horizon perspective of market-driven economics, the next-election perspective of democracies, or the distractions of personal multi-tasking. All are on the increase. Some sort of balancing corrective to the short-sightedness is needed—some mechanism or myth which encourages the long view and the taking of long-term responsibility, where ‘long-term’ is measured at least in centuries.

Short term spans result in bad, short-sighted planning. A viable development is, on the contrary, the ability to plan with a very long time projection. It means acting today for future generations to have choices to build upon tomorrow. Though we cannot predict the needs of future generations, we can still decide today on actions that will impact tomorrow. These are political and not scientific choices. They concern societies that are able to push forward the limits of time.

Dropping the equilibrium ideal

One of the most peculiar characteristics of our times is the attachment to the concept of equilibrium, or perhaps not so much the *concept* itself, but rather the implicit reassuring *belief* that things around us need to be in a state of equilibrium, a sort of static illusory ideal of the *perfect* balance. As if fluctuations were too hazardous to deal with.

The principle of equilibrium, also called Chatelier’s principle, has been used to predict the effects of a change in conditions of a chemical equilibrium. In economics, the term equilibrium is used to suggest a state of *balance* between supply forces and demand forces. A state of the world where economic forces are balanced and, *in the absence of external influences*, the values of economic variables will not change.

In reality, works on systems dynamics have demonstrated that the concept of equilibrium (which is the basis of most development approaches in agriculture including the notion of Maximum Sustainable Yields) is a fallacy. Equilibrium *per se* is a concept that does not exist in nature nor does it exist in economics (Weber, et al. 1990; Aubin, 1992; Cury and Roy, 1991). The intrusion of variability, uncertainties, irreversibility in the systems dynamics poses the question of

1. <http://longnow.org/about/>

development, not as an effort to reach a hypothetical *best equilibrium* level, but as a constant management of interactions between economical, social and natural variabilities both in space and time. To think in terms of long term development implies the best possible management of interactions between different sources of natural and social variability, on the basis of very long term objectives.

And here we touch upon the main difference between the notion of *viable* and the notion of *sustainable* development. The fundamental difference between the two is in the dismissal of the equilibrium principle embedded in the concept of sustainable development and the dismissal of an analysis of the resources based on stock management. The concept of sustainable development is based on a vision of nature as a stock to be managed in an optimal way, to the point of equilibrium, with the result of sustainable development being seen in terms of ecosystems conservation, and in terms of “maintenance” or restoration of equilibrium.

Being able to drop the idea of nature only as a stock to be managed brings the possibility of understanding viable development as a management of interactions between economical, social and natural variabilities both in space and time. This allows to embrace uncertainties as an enriching rather than threatening characteristic of living systems.

Starting local

At first sight, it is overwhelming to imagine changing the world, though many would wish to do so. Where do we start? Evidence of more sustainable paths has been proposed but seems to remain difficult to follow. The IAASTD (International Assessment of Agricultural Knowledge, Science and Technology for Development), the largest review ever of agriculture at a world scale, proposed new directions but these were not taken at the scale that could have been expected. The 2010 UNEP Green Economy also highlights a shift in other directions and so will the forthcoming Rio+ 20 conference.

But shifts and transitions towards viable models do not hit scale. It seems that change cannot come from global plans alone, it needs mobilization on the ground and democratic national governments and policies that embed and accompany these changes.

In their article on *Emergence*, Wheatley and Frieze (2006) apply the lessons of living systems and provide their views on how local innovation can be taken to a world scale. Wheatley (2009) writes:

The world only changes when a few individuals step forward. It doesn't change from leaders or top-level programs. It changes when everyday people, gathering in small groups, notice what they care about and make those first

steps to change the situation. (...) I believe that we can change the world if we start listening to one another again. If we can sit together and talk about what is important to us, we begin to come alive.(...). There is no more powerful way to initiate significant change, there is no more power equal to a community discovering what it cares about. Together we will figure out what our first step is, then the next, then the next. Gradually we become large and powerful. We don't have to start with power. Just with passion.

In *Blessed Unrest: How the Largest Movement in the World Came into Being, and Why No one Saw it Coming* (2007), Paul Hawken compares the social movements dedicated to climate change, poverty, deforestation, peace, water, hunger, conservation, human rights to an immune system for the planet:

No one knows its scope, and how it functions is more mysterious than what meets the eye. What does meet the eye is compelling: coherent, organic, self-organized congregations involving tens of millions of people dedicated to change. (...) I wrote this book primarily to discover what I don't know. Part of what I learned concerns an older quiescent history that is reemerging, what poet Gary Snyder calls the great underground, a current of humanity back to the Paleolithic. Its lineage can be traced back to healers, priestesses, philosophers, monks, rabbis, poets and artists who speak for the planet, for other species, for interdependence, a life that courses under and through and around empires.

Overarching international umbrellas, while needed, cannot alone transform reality, unless they are nested within democratic national governments and unless they become the echo of this great underground, a galaxy of spots connecting across oceans which expands as an immune system of the planet.

Opening up spaces

All too often we function as if we abhorred vacuum, or what we think is vacuum. It is as if empty or unfilled spaces were unnatural as they go against the laws of nature and physics. Our houses are filled up, our brains are filled up, our agendas are filled up. In the development world, action is geared towards content, packages, activities, outputs, inputs, grids, log frames, recommendations, expertise, facts and figures. Always filling up spaces and leaving very little to the unknown. It seems unnatural to leave spaces for creativity and endogenous inventions. It seems unnatural to think more of the frame (involving values, principles, aims) than about content (action, facts, results).

Somehow, in the agricultural arena it works as if the inability to see the rationale of peasant farming had played against it; as if it was felt that this was an empty field

to be filled up. And the pressure, some of which will be described in the following chapter, builds up against it. The inability to recognize peasant farming for what it is has forced it to be pushed to the side. Marginalization, exclusion, concentration, expropriation, domination, and in general what is referred to as the *agriculture squeeze*, has and is endangering the very existence of millions of people who may very well hold the key to many of the challenges ahead. The same is happening with the so-called empty lands which are being grabbed in different parts of the world, as if what seems at first sight *empty* was unbearable.

Opening up spaces for autonomy and self-determination is opening up the possibility to create wealth. Policy makers find it easier to build regulation and control, but all too often, this goes against the local dynamism that by definition needs flexibility, and the space and time to go through the ups and downs of trial and error, through the testing of novelties and the mystery of exploration. Unknown territories can only be discovered if the space is provided for those who inhabit them. Knowing the direction, but not the path, is in itself so much more of a challenge.

So here is where we begin, with no rush, no fear, no grandiose plans, taking the reins with a very long term vision, for a common direction where everyone has a space.

It starts with the correction of some fundamental misconceptions that have been leading for decades the development approaches in agriculture.

Misconceptions:

- peasants are disappearing
- peasants are small and vulnerable
- peasants are business entrepreneurs
- the primary *raison d'être* of peasant farming is food
- yields are about technologies

Misconceptions

A transition takes one step at a time; gradually the overall fabric changes patterns, shades and colors. It is about the *how* (change can happen) rather than *what* (the change in itself). Instead of fixed recipes, what is discussed here are some conditions that allow change to happen. Here we can forget about the idea of a neat top-down transition that is pre-planned, pre-programmed and pre-defined, with new technical messages that farmers *should* and *could* and *would*...Here it is proposed to go for a transition for which individual transformations are not known or pre-programmed at the start of the process, but for which a common direction is taken by a confluence of different actors.

It is not that transitions towards more viable agricultural systems are not happening. In fact, agriculture transitions are unfolding in front of our very eyes. It is that mechanisms and tools to accompany these transitions are not thought of and developed with the purpose of supporting them specifically. In many regions of the world, at different scales, farmer groups and movements are transforming the way land is being cultivated. The paradox is that people are not aware of it. These profound changes are escaping measuring tools. And the question is how to go with them rather than, as is presently the case, against them. Is it about proposing more of the same, changing the message but keeping the same approach? Or is it possible to understand the different logic that underpins different models and to rewire our brain for repatterning agriculture within a different perspective?

Choosing that latter path will imply revisiting some key misconceptions. This revisiting is listed below and explained in more detail in the following chapter.

Peasants are not disappearing

There is a mistaken perception that peasants are disappearing, amplified by the negative connotation attached to the word *peasant* which holds a backwardness feel about it. As mentioned before, peasants are family farmers, they are professionals with wide skills. There is nothing backward about being a peasant, on the contrary, most peasants of the third millennium are probably more advanced in their practices and in their thinking and hold more diversified knowledge than any other *expert* in the agricultural field. There is also no intrinsic poverty linked to the fact of being a peasant. It is the other way round. The fact that there are many peasants in poor areas stems from the higher flexibility, potential and adaptability of the peasant way of farming that allows them to exist *even* in poor conditions, which does not mean that in good conditions they would not thrive.

Not only are peasants not disappearing, but they are increasing in most places in Asia and Africa. This is explained later in this paper and presented in maps.

Currently 80 percent of European farmers are actively engaged in a peasant way of farming (Ploeg, 2009) through deepening (activities that augment the value added per unit of product such as organic farming, high-quality, regional specificities, on-farm processing, direct marketing etc.), broadening (adding non-agricultural activities to the farm such as management of nature, agro-tourism, provision of other services etc.) and regrounding (finding new ways to obtain and combine resources). This move to the peasant way of farming is neither a return to the past, nor an action of last resort. It is an active adaptation to current external pressures.

Peasants are not small and vulnerable

As in *The Oak and the Reed*, one of Aesop's Fables, the strongest one may not be the one we think of. Peasants by definition increase the intensity of farming for their own crops and livestock, while maintaining a high level of autonomy. The logic of business entrepreneurial or corporate farming is different. The focus is to accelerate growth and increase scale, thus increasing dependency on the newest technologies, external inputs, and credit and thereby increasing the vulnerability to external fluctuations such as commodity prices, markets, energy etc. As will later be explained, the very conditions that govern corporate farming are those that bear the seeds of its potential fall, as this model of agriculture may become increasingly non-viable.

Peasants are not small in numbers. According to different authors (ETC Group, 2009; Pimbert, 2008) there are 1.5 billion peasants on 380 million farms: 800 million more growing urban gardens; 410 million gathering the hidden harvest of our forests and savannas; 190 million pastoralists and well over 100 million peasant fishers. At least 370 million of these are also indigenous peoples. Together these peasants make up forty percent of the world's peoples and they grow at least 70 percent of the world's food (see reference list in www.ag-transition.org). And peasants are organizing thus gaining increased power at all levels, in particular in international negotiations.

Peasants are not business entrepreneurs

Peasants are entrepreneurial, but they are not business entrepreneurs in the sense that their primary aim is not only profit-making. This will be presented in more detail in the next section, where an explanation is provided on what the peasant *is* and not on what he *is not*, which is the way he is usually described in the literature. In a nutshell, if you look at the cattle and fields of peasants, you can see they do not *look* the same as monocultures and CAFOS (Concentrated -or Confined- Animal Feeding Operations). This aesthetic difference stems from different logics, different modes of production, different relations to the living world, and different outputs.

As a result of this fundamentally differing logic, there are acute differences in the value added and its redistribution. Nature, quality and sustainability are worlds apart. One pattern is rooted in space and time, bridging tradition and laying the ground for future generations while rooted in short and decentralized circuits; the other one is disconnecting consumption and production from each other, with a tendency towards highly centralized and an increasingly dominant mode of ordering. Non-places are created as a result of the destruction of connections about how and where food is produced. In the latter, food is no longer produced, it is engineered.

The primary *raison d'être* of peasant farming is livelihoods

There is an exaggerated tendency to parallel farming with food as if it was the sole purpose of a farm. But farms are much more than just producers of food. Above all, farms are places for families, they are embedded in communities, with their culture, history, relationships and social dynamics. A farm is not a factory, and the *fordisation* of agriculture in certain industrialized environments, with its mechanical, boring, pollutive and repetitive tasks has nothing to do with what family farms are about. Farmers, men and women, have stories to tell, they constantly adjust to the changing conditions that surround them, permanently judging and readjusting their strategies to cope with uncertainty and instability, struggling in harsh environments, blooming in others, working intensively, able to observe changes, expanding diversity and experiencing the close relationship with nature hard and tough as it may be.

Peasants express their pride and attachment to the place. The extent and diversity of their knowledge goes beyond their borders as they constantly go through trial and error and depend on extended relationships and interconnections, exchanging with the others around them. The farm is a place of labour, where family and the community as a whole has a role to play. Labour is provided by the family and mobilized within the community through relations of reciprocity. Peasant farming is, by definition, highly labour intensive.

In many countries, farms are the first refuge in times of economic crises. Examples in Tunisia and Morocco in the eighties show that family farms have played crucial roles as buffers in post structural adjustment times, when employment could not be found elsewhere and migration to northern countries was no longer possible. In the Nile Valley in Egypt, highly intensive farming on very small plots of land has also demonstrated that it can absorb a high degree of labour while being amongst the world's most efficient agriculture in terms of total output per ha (Roudart, 2001). The same is currently occurring in Greece, where families affected by the economic crisis return to the countryside².

2. Stavanger Aftenblad, 30 December 2011: Between 2008 and 2010 agriculture was the only sector in the Greek economy with growth. The growth was 6,8%, with 33 000 new jobs in agriculture.

Yields are about social relationships

The focus in agriculture in the last five decades, resulting from the agenda set up by research institutions, expert systems and corporations, has almost exclusively been on yields, detached from time and space. There is an obsessive emphasis on yields which has led research and technical packages worldwide to give priority to increasing yields, with efforts concentrating mainly on technological packages around it. This has led, amongst other things, to a deterioration of the nutritional quality of foods.

While yields are part of the increase of value added and peasants select varieties that produce higher yields, this is not the only criteria they look at; many more criteria are taken into account (resistance to pests, tolerance to drought, length of stalk, taste, etc.) that may hold greater relevance in different environments and that are also closely related to the social context in which farmers live. In this sense, yields depend on the way social and natural resources are moulded and patterned throughout generations in different social contexts. They are strongly influenced by the intricate web of relationships within the community in which peasant farming is embedded with extended links of reciprocity.

In the development arena, it becomes increasingly difficult to justify the myopic yield focus. We know that enough calories are being produced to feed the world's population with 2,796 kcal per person per day available in 2007, which meets the needs of an average adult. In reality the figure is even higher as the figure, calculated on the basis of produced edible crops, is 4,600 kcal per capita per day before post-harvest losses; losses due to the conversion into animal feed and home waste (Lundqvist, 2008). The problem of poverty and access to food is much more than just plant growth, yield increase and increase in the total world production of food commodities. This complex reality requires a more subtle and sophisticated understanding and approach than just focusing on the yield increase.

PART II – COMPASS



The Clouds
Islands of Viable Patterns
The Costs

PART II – COMPASS

Summary

The international community is effervescing about the need to patch up the planet and imagining how it will cope with all sorts of dark clouds piling up for a forthcoming storm. If a storm there is, it will not come exclusively from the South with the increase of population and increased pressure on resources, it will also come from the North with the tightening of concentration, control and regulation that re-pattern reality into models of extraction and exclusion and capture value from where it is created. The switch in the economy, rather than green, needs to be moral. And then, only then, can all the colours of the palette be used. Why stick to green when we can be multicoloured? And talking about meteorology and the onset of a rainbow, no need to fiddle around to cool the planet by sending mirrors or sulphur into the stratosphere which would indeed give us very dark sunsets and a blemished light. Let us rather look under our feet, into the breathing space of agriculture with real-life examples of transitions that succeed and to conservation practices that work. Why spend 2 billion pounds in the UK or 17 billion USD in the US for the external costs of modern agriculture when we know that it can be avoided? The maps that tell us that we could do much better are there. And so are the people.

The Clouds

As mentioned in the first section, a common belief is that a storm is brewing with heavy clouds:

- population is increasing at a fast rate
- consumption patterns are changing and moving into high consumption of meat and dairy products
- increased incomes tend towards increased demand for goods that require more energy
- pressure on land and water is increasing and agricultural productivity stagnating

When we look at these drivers, and at the figures and tools used to measure them, we realize implicitly that the drivers seem to come from countries with high poverty rates in the South.

By adjusting our binoculars towards different horizons and making a 360 degree scan, things take on a different perspective. Clouds now come from different directions:

Concentration

Just three companies control more than half (53 percent) of the global commercial market for seed. The top ten companies accounted for 73 percent of the 2009 global market and five of the top six agrochemical companies are also in the list of the world's biggest seed companies. Consolidation appears in the form of established energy, chemical and pharmaceutical companies, now also into synthetic biology, with 60 percent annual growth expected to reach a 2.4 billion USD market by 2013 and 4.5 billion by 2015. In 2009, the global market share of the top 10 pesticide companies exceeded 90 percent for the first time; the top 6 account for over 72 percent of the agrochemical market. The world's biggest buyers, sellers and processors of bio-based products are the agro-industrial food manufacturers and retailers. Globally the size of the commercial food market topped USD 7 trillion in 2009, overtaking the energy market (ETC, 2011). This is the basis of an agroindustrial model of production that pollutes the soil, the water, the plants and the climate.

Control and regulation

By specifying rules that govern transactions and connections, monopolistic networks control people and resources at a distance They do this by specifying for

example, that asparagus is to be shipped or flown from places of poverty to places of wealth and they generate a large range of detailed requirements concerning quality, quantity, price, time and place of delivery, packing materials, paying time, mode of production, etc. It is control at every interface in the network. Through this seemingly near invisible control, the assembly of social and material resources is governed at a distance. What looks at first sight like neutral technical specifications is in reality a hierarchical mode of governance and a mode of ordering that reshapes the social and natural worlds in a particular way. This re-patterning is strongly associated with increased mobility of enlarged flows of capital. Central to this mode of ordering is control and appropriation. An on-going conquest that takes over once relatively autonomous and self-governed local constellations and reassembles them in a way that ensures controllability and exploitability. In doing so, it eliminates the “local”, which becomes a “non-place”.

Squeeze and dependency

The exceptional growth of the food industry is the outcome of the squeeze upon agriculture and the growing dependency of consumers upon supermarkets. The constant pressure to impose lower costs of production is realized through an impoverishment of nature, people and products. The visible result is the degradation of resources, working conditions and quality of life, and overall an increase in risks and the warming of the atmosphere. What matters is the way in which things are done and not the outcome. This implies an explosion of transaction costs. Instead of the promised “efficient, clean, and safe world” conditions worsen with high risks of pandemic diseases and contaminated foods, inhuman production conditions and unhealthy products.

Re-patterning of connections

By re-linking material and institutional resources differently, connections are modified. Major transnational corporations contribute nothing; they do not create value, they only reassemble things and re-link existing resources in a different way, into a specific pattern through submission and exclusion that allows for control and extraction. Practices of production, processing and consumption are remoulded. It is not just another way of delivering food, it is a transformation of food itself. Having access to banks, the stock exchange and to circuits of political power continuously enlarges control over large commodity flows. Through the global financial markets and the private equity and hedge funds operating in it, enterprises and institutions as a whole are converted into commodities.

The storm in this case, originates in the North and expands worldwide. The drivers of that storm may well be very different to those initially thought of. The key drivers are concentration, control and regulation, squeeze and dependency and the re-patterning of connections. *This* is the perfect storm. When we look at the pressure on agriculture we can see that possibilities of local markets are blocked because they become redundant. Institutions of common management are dismantled, the pressure of regulation and procedures become unbearable and prices to producers continue their downward curve and are no longer related to labour time or production costs. There is no longer creation of value, science goes counter to the farming needs, farmers are tailored into an overly simplification system, interrelations are frozen and the tendency is towards an apartheid of peasants. And *that* can cause a collapse of the ecosystems of this Earth because, paradoxically, those who are being marginalized are those who are still embedded in these ecosystems and know how to co-exist with them and within them.

The international community, rather than focusing on these drivers, is talking of a green economy with very little dedicated to a moral economy, but one does not go without the other. A chilling expression of the system as it functions today, and its global implications, is described by Wallace in his work on *Breeding Influenza: The Political Virology of Offshore Farming* (Wallace, 2009).

The clouds described above are now to be found everywhere on the planet, interestingly the solutions too. When hearing about the science fiction-like experiments being undertaken to cool the planet, it is surprising to realize that the magic bullets do not include any idea related to the 90 percent (IAASTD, 2009) of all the farms of the world, which are small family farms in the majority and which already do cool the climate and could cool it even more.

Building on what exists already, rather than imaginary utopias, and putting in place conditions, facilitating tools and mechanisms that can bring them to fit the current millennium is a question of political decision and not of resources. It is also a question of having the ability to grasp where real wealth lies and to switch to a different logic distanced from established powers, and from the drivers described above. In the next two sections the reality of sustainable agricultural practices is described and the implications for societies and nature of the modern industrial paradigm are evaluated.

Islands of Viable Patterns

Already in 1995, Jules Pretty in his book on *Regenerating Agriculture* states:

There is now strong evidence that regenerative and resource conserving technologies and practices can bring both environmental and economic benefits for farmers, communities and nations. The best evidence comes from the countries of Africa, Asia, and Latin America....

Sustainable development

Before moving on into where and how these “islands” of sustainability have developed, we can say a few words on the term sustainability and the related terminology. Many terms are used to describe the alternative to an industrial agriculture. These include alternative agriculture, sustainable, regenerative, low external input, low input sustainable agriculture, resource-conserving, biological, natural, ecoagriculture, agroecological, organic, biodynamic and permaculture. In general the term “sustainable” is used to reflect resource-conserving low input and regenerative agriculture, with in common the greater use of local resource and knowledge. Agroecology is now increasingly being adopted by peasant movements worldwide. For practitioners, agroecology refers to farming methods that are based on the application of principles which are drawn from biology. These principles are (Altieri, 1995, 2002):

- *Increasing the recycling of biomass and achieving a balance in nutrient flows.*
- *Assuring favourable soil conditions, keeping the soil covered with mulch or cover crops, guaranteeing a high level of soil organic matter and an active soil biology.*
- *Minimizing nutrient losses from the system, through relatively closed rather than open system design. Promoting the functional biodiversity of the system, including within- and between-species diversity, above- and below-ground and landscape level biodiversity.*
- *Promoting increased biological interactions and synergisms among system components that can sponsor system services like regenerating soil fertility and providing pest management without resorting to external inputs.*

Stephen Gliessman in “Agroecology and Agroecosystems” (in *Sustainable Agriculture*, 2009) gives his personal analogy:

In an attempt to clarify my own thinking about agroecosystems I often think of agriculture as a stream, and farms are different points along the stream.

When we think of an individual farm as a pool in a calm eddy of some bend in the stream's flow we can imagine how many things flow into a farm and we also expect the many things to flow out of it as well. As a farmer I work hard to keep my pool in the stream (my farm) clean and productive. I try to be as careful as possible in terms of how I care for the soil, which crops I plant, how I control pests and diseases, and how I market my harvest.

Since the Brundtland commission's definition of sustainable development in 1987, there have been at least 80 more definitions constructed. Precise and absolute definitions of sustainability cannot exist as the concept itself is contested and political (Sunderlin, 1995). For some it relates to the capacity to continue for a long period of time, to others it means not damaging natural resources. In the literature, sustainable agriculture does not prescribe a concretely defined set of technologies, practices or policies, it is not presented as a package but rather as an evolving process. It is interesting to note that the term was already used at the time of the Cocoyoc Declaration on Environment and Development in the early 1970s. It was included in an IIED (International Institute for Environment and Development) publication to suggest that lessons of ecology should be applied to economic processes, and was part of the debates on new paradigms or "perspectives" as Norgaard would call his co-evolutionary approach (1984). Choosing the term "sustainable development" rather than "ecodevelopment" presented in Stockholm by Maurice Strong, former commissioner of the World Commission on Environment and Development, came by accident; it was the result of a confrontation between country delegations. The notion of *sustainable development* was perceived as being closer to the idea of *self-sustained growth* of Walt Rostow, former US adviser on national security affairs, and won over the concept of *ecodevelopment*. Understanding the history of the term allows to better understand that it was never adopted as a paradigm by the peasant movements. Today, four decades later, it is the concept of agroecology, closer to the initial idea of ecodevelopment that is being brought forward by the largest peasant organizations in the world.

Documented evidence of viable transitions

There is a mass of documentation of successful sustainable practices worldwide, and clearly an even more impressive amount of non-documented examples in all continents. Some are endogenous traditional practices that have evolved over millennia. Others are triggered by political changes or by localized projects and the majority is within the wide range of a mix of local and traditional knowledge influenced to various degrees by practices that have been introduced at different points in time. Here we will just choose a few snap-shots that illustrate issues of

particular relevance to the purpose of this paper: how to move into an agricultural transition that works and has the potential to reach scale.

Five situations that have been reality-checked are presented: the first one is a worldwide overview of the applicability or otherwise of conservation technologies and practices, to understand if yes or no, on the ground, in the reality of farming conditions, the deterioration of polluting practices causing damage to the ecosystem services can be reversed and, at the same time yields increased or kept stable and carbon sequestration improved. The second is about a whole country in the American continent moving into agroecological practices and the possibility or otherwise to feed its people. The third is a large region in a country in Asia that moved towards more sustainable practices, the fourth one is about peasant women made visible in Brazil, and the fifth one, in a Northern European country, is the illustration of a transition in a typical modern agricultural environment. A more extensive list of examples worldwide is available in the following website: www.ag-transition.org

1. Overview of resource-conserving practices

Jules Pretty together with various authors have undertaken a review of regenerative resource-conserving practices worldwide. These are analysed and described already in the nineties and early 2000 in various books and articles (Pretty, 1995; Rölling, 1998; Pretty, et al., 2002, 2005, 2006).

In 2006, the studies had demonstrated the extent to which 286 interventions in 57 “poor countries” covering 37 million ha (3 percent of the cultivated area in developing countries) have increased productivity on 12.6 million farms while improving ecosystem services. The average crop yield increase was 79 percent. All crops showed water use efficiency gains, with the highest improvement in rainfed crops. Potential carbon sequestered increased substantially (average of 0.35t C ha⁻¹ y⁻¹) and pesticide use declined by 71 percent.

In previous works there is documented evidence of regenerative resource-conserving practices that bring benefits for farmers, communities and nations with evidence coming from countries in Africa, Asia and Latin America. Where farming has been largely untouched by modern packages of externally supplied technologies, yields have substantially increased often using few or no external inputs (Bunch, 1990, 1993; GTZ, 1992; UNDP, 1992; Krishna, 1994; Shah, 1994; SWCB, 1994; Balbarino and Alcober, 1994; de Freitas, 1994).

The sustainable agriculture programme of IIED examined the impact of sustainable agriculture in a number of countries. Pretty (1996) reports that, from this programme, in the 20 countries examined, some 1.93 million households were farming 4.1 million hectares with sustainable agriculture technologies and

practices. Empirical facts show that the the greatest increases following a transition to sustainable agriculture are in rainfed agriculture in the lowest yield countries, where the average new yields for wheat, maize and sorghum-millet are the order of double the yields of conventional or pre-sustainable agriculture.

These are not the only sites for sustainable agriculture. In high-input and generally irrigated lands, farmers adopting regenerative technologies have maintained yields whilst substantially reducing their use of inputs (Bagadion and Korten, 1991; Kenmore, 1991; vander Werf and de Jager, 1992; UNDP, 1992; Kamp, Gregory and Chowhan, 1993 etc.).

And in industrialized countries, increasing numbers of farmers are demonstrating that it is possible to maintain profitability, even though input use has been cut drastically (Liebhart et al., 1989; NRC, 1989; Hanson et al., 1990; Faeth, 1993; NAF, 1994; Hewitt and Smith, 1995); and in Europe (El Titi and Landes, 1990; Vereijken, 1990; Jordan Hutcheon and Glen, 1993; Pretty and Howes, 1993; Reus, Weckselor and Pak, 1994; Somers, 1993). Recent research studies are also available on the www.ag-transition.org website.

Despite clear evidence that profitability is maintained and even increased with a transition to more sustainable practices and less use of chemical inputs, these practices do not expand to the levels expected. Pretty (1998) suggests four important principles for sustainability as a result of this empirical evidence:

- imposed technologies do not persist
- imposed institutions do not persist
- expensive technologies do not persist
- sustainability does not equal fossilisation or continuation of a thing or practice forever: rather it implies an enhanced capacity to adapt in the face of unexpected changes and emerging uncertainties.

Most successes, though, are still localized. This is partly because favourable policy environments are missing. Most policies still actively encourage farming that is dependent on external inputs and technologies. It is these policy frameworks that are one of the principal barriers to a more sustainable agriculture (...) there remains a huge challenge to find ways to scale up processes which have brought about succesful transitions in different parts of the world (Pretty, 1998).

More recently, Pretty and other authors have documented evidence of what is considered success for some and controversy for others: sustainable intensification in African agriculture (see Pretty et al, 2011). It is interesting to see that when priorities are reoriented such as for example on orphan crops (crops that had been

ignored by past breeding programmes, such as cassava, plantain, sweet potatoes, tef, pigeon-pea etc.) the success can be spectacular. The authors conclude that the 40 projects benefited more than 10 million farmers and their families across 20 countries.

Beyond the divide in perspectives and approaches it is clear that there is an untapped potential to bring together tradition and science with carefully redrafted priorities in different negotiating platforms that could be acceptable and beneficial to those primarily concerned. Everything depends on the criteria by which the approach is defined, the purpose and how it is led.

2. Agroecology in Cuba

The best illustration of sustainable peasant agriculture on a large scale, having gone through a transition, is the case of Cuba which is based on the farmer-to-farmer (Campesino-a-Campesino) learning process. Peter Rosset and collaborators (2010) present how this transition took place.

Cuba used to be characterized by a high dependency on imported food (57 percent in 1989), agricultural inputs and implements and, late 1980s with 30 percent of agricultural land devoted to a single export crop, sugarcane, which generated 75 percent of export revenues. Cuba was considered an example of the success of modern agriculture with the adoption of the Green Revolution, the highest number of tractors per person and the second highest grain yields of Latin America. Agriculture relied on external chemicals such as fertilizers (48 percent imported), and pesticides (82 percent imported). This model was not based on food sovereignty and was dependent on foreign trade. When external conditions changed (the collapse of the Soviet Union and the “socialist bloc” in Europe in 1989 and the US tightened trade embargo), Cuba lost 85 percent of its trade relations and could no longer import food, machinery, inputs and petroleum.

A Special Period in Peacetime was declared to confront the acute economic and food crises. Smaller, more flexible peasant cooperatives were encouraged and the overall logic of production was overturned. As virtually all peasants belong to ANAP, the National Association of Small Farmers, and to one or two cooperatives, the spread of alternative practices was facilitated. Credit and Service Cooperatives were composed of peasant families who own their individual farms and at the same time share through the cooperatives the machinery, access to markets and access to credit facilities. This participated in the fact that, from a situation of total food collapse in the early 1990s Cuba, by applying a radical shift in its farming approach, was able to reach the highest percentage of annual growth in per capita food production of all Latin America and the Caribbean with a 4.2 percent annual growth from 1996 to 2005. The use of agroecology has played a key role in this successful transition.

As analyzed by Rosset:

While hindsight now shows us that the technological breakthrough that was needed was greater agroecological integration, it was a methodological innovation that in our view has proved key. We believe that in the typical case, in most countries most of the time, there are abundant and productive ecological farming practices 'on offer', but low adoption of them is the norm, because what is lacking is a methodology to create a social dynamic of widespread adoption.

The most successful methodology for promoting farmer innovation and horizontal sharing and learning is the Campesino-a-Campesino (farmer-to-farmer, or peasant-to-peasant) methodology (CAC). While farmers innovating and sharing goes back to time immemorial, the more contemporary and more formalized version was developed locally in Guatemala and spread through Mesoamerica beginning in the 1970s (Holt-Giménez 2006). CAC is a Freirian horizontal communication methodology (sensu Freire 1970), or social process methodology, that is based on farmer-promoters who have innovated new solutions to problems that are common among many farmers or have recovered/rediscovered older traditional solutions, and who use popular education methodology to share them with their peers.

3. Community managed sustainable agriculture in Andhra Pradesh

In Andhra Pradesh, in just four years, over 300 thousand farmers have chosen an alternative to the Green Revolution, now known as the Community Managed Sustainable Agriculture (CMSA) which has been adopted on half a million ha of farmland. What happened? Small farmers found themselves caught in the indebtedness spiral of the Green Revolution (high cost of chemical inputs, lack of credit, poor access to markets etc.) which resulted at national level, as reported by the official Indian statistics (Ministry of Agriculture) in more than 200 thousand suicides and in devastating effects on ecosystems that are still to be fully appraised.

In Andhra Pradesh, farmers opted for a survival transition and launched the CMSA, using an institutional platform of community organizations and their federations to plan, implement, manage and monitor the program (Kumar, 2009, Indira Kranti Patham). CMSA is a combination of scientifically proven methods, indigenous knowledge and traditional wisdom. It is entirely managed by community institutions; federations of self-help groups with services from a non-profit entity, SERP (Society for the Elimination of Rural Poverty) which has developed an institutional model of federations of poor women that includes ten million women. The federation of self-help groups owns a corpus of USD 1.5 billion and provides a bundle of financial and other services to which the poor

normally do not have access. This institutional architecture has given the poor access to USD 4.8 billion.

The initial objectives of the community managed sustainable agriculture were to provide healthy food, healthy crops, healthy soil, and healthy life. The Non-Pesticide management and soil conservation practices were introduced through Farmer Field Schools where farmers themselves could take their own decisions about management approaches. Local institutions were key to the success of the transition. They comprise women Self-Help Groups, Village Level Farmer Federations (bringing together all farmers practicing sustainable agriculture with each household represented by a man and a woman), and the District Level Farmer Federation. The first investment was on institutional building. Then when the platform was ready, financial support was provided for capacity building. There were no input subsidies. In CMSA all of the inputs are internalized so the cost of cultivation is drastically reduced. The bulk of the production is meant first to ensure food security locally. The surplus production is sold to nearby markets and niche markets with a premium price as free pesticide product. All essential elements such as extension and programme management are lead by the communities.

The CMSA approach is based on the premise that ecologically sustainable agriculture makes sound economic sense. In view of the success of the CMSA, the National line agencies are now considering adoption of this approach on a national basis.

4. Visible women peasants in Brazil

Among all the invisible peasants, women are the most invisible. Emma Siliprandi (2011) has studied women and agroecology in Brazil. She has found out that while women used to be invisible as laborers and citizens, they have now gained rights and a political voice. In Brazil, family farmers represent 84 percent of all producers, but until recently women had no voice and no access to land and to basic social security rights. In reaction, women started organizing in the 1980s. Initially they formed small groups, but over the years these groups have grown in size and territorial reach. The main marches which propelled them to the forefront were the *Marcha das Margaridas* in 2000, 2003 and 2007, which brought together up to 50 thousand women. From 2003 onwards, the dialogue between the movements of rural women and the government were considerably strengthened, reinforced by the results of two National Conferences for Women's Policies (2003 and 2007) with the result that a series of public policies focusing on gender and women empowerment were developed. The most famous event in 2006 was the occupation by 2000 women of laboratories that produced eucalyptus at the

Aracruz Cellulose factory in Rio Grande do Sul, organized by women of La Via Campesina. The demonstration sought to highlight the social and environmental consequences of the advance of the “green desert” that had been created by the intensive monoculture of eucalyptus, and the violent expulsion of the indigenous population and peasants in lands claimed by Aracruz. The movements demanded food sovereignty, the safeguarding of biodiversity and the support for a healthy diet, on the basis of peasant farming that recognizes female farmers.

Over the years, the associations of women have been strengthened and formalized, and increasingly their concern for safe and sustainable farming translated into agroecological forms of production. Groups have consolidated and attracted new members, expanding to other municipalities. New networks have emerged with both males and females engaged in agroecological production. Some groups have been officially registered and are now able to sell to institutional markets such as the School Meal Programme. Today some of these women have become respected leaders in their communities and they now participate politically in fora on health, education, the environment and rural development. They are acknowledged by the Brazilian federal government as subjects within their own rights with supportive policies that allow for increased autonomy and self-determination.

This example illustrates the importance of women peasants. In Sub-Saharan Africa, women produce up to 80 percent of the food (UNIFEM) and provide 70 percent of agricultural labour, while less than 2 percent of the land is owned by women. Women hold traditional knowledge often different to that of men. They often tend to be the driving forces behind agricultural transitions at farm and community level. They have different priorities to men. While men usually prioritize the economic aspects, women tend to focus more on the social and often spiritual dimensions and on nutrition and health. But they remain underrepresented and unheard. In the entrepreneurial forms of farming this marginalization is even more acute as farming is usually controlled by men and the local knowledge held by women in particular on food crops such as orphan crops and wild relatives tends to become extinct.

5. Territorial cooperatives in the Netherlands

In the Netherlands, as in most European countries, the interrelations between the state and the farms have suffered from the increase of regulatory schemes. Disarticulation and mistrust between farmers and the state apparatus have triggered the need for new forms of cooperation. A successful way was found with the creation of territorial cooperatives which have introduced new forms of self-regulation and strategies of negotiated development. The case of the North Frisian Woodlands is outlined here (Ploeg 2009).

Territorial cooperatives fit well within the principle of subsidiarity, and reflect a strong democratic tradition. They reduce transaction costs associated with current rural development programmes while augmenting reach, impact and efficiency. They can, therefore, be the perfect complement to agricultural policies. They crystallize the construction of regional cooperation (protecting the environment, nature and landscape), the construction of new forms of rural governance (involving principles of responsibility, accountability, transparency, representation and accessibility) and a move away from expert systems towards the innovative abilities of peasants (territorial cooperatives are field laboratories). In the regional cooperatives these elements are tied together into one new institution which strengthens the social capital available in a territory and the network of interrelations with other regional, national and supranational institutions allowing for expanded access beyond the territory.

The initial trigger of the creation of the territorial cooperatives was the transfer of the responsibility of the protection of the landscapes characterized by hedgerows from acid rain, to farmers. A solid contractual base for reciprocity was created insuring that parties did not feel victims of an opportunistic behavior of the others. These were the first steps for grounding the cooperatives, later strengthened when legal room was obtained to develop and test several novelties³ and the construction of a new peasant trajectory towards sustainability.

Interesting in this example is the beauty of the snowballing effect of novelties, once they were given the space and environment to emerge. They resulted in: a reversal of the interrelations between economy and the environment; the change from mutual distrust to negotiated cooperation between farmers and state organizations; the change from the single farm to the territory as the unit of operation (issues of landscape, biodiversity and environmental quality being thus dealt at the required level); a cultural reversal in the sense that despair and apathy was replaced by hope and contest, and in the overall net improvement of the environmental and social conditions of the region.

In all the stories described above, there is a common underlying current, the fact that a hidden potential that was not used before is always available “in offer” in all territories. Once the conditions and spaces are provided for different forms of social organization to materialize, powerful creative dynamics enter into play.

3. Novelties are defined as: a deviation from the rule, deliberate or unexpected, which is not incremental and thus different from innovation.

The Costs

Having gone through a few examples of the “positive side of the story” with the description of dynamics that create wealth, including the ability to produce high yields, and successful transitions, a few words will be said now about the negative side of the story, namely, what happens to the environment and to us when farming practices are not sustainable, which is the case in the modern industrial agricultural paradigm.

The first question is why do we not learn from the past? For those who have been long in the agricultural arena, demonstrating that industrial agriculture is highly damaging the environment and societies has become a redundant battle (see *Viable Food Future*, Development Fund 2010; *Unwelcome Harvest*, Conway and Pretty, 2009; *Fatal Harvest, the tragedy of industrial agriculture*, Kimbrell, 2002 etc.). And the battle is old. Albert Howard, in *The Post-War Task* (1945) talks about the *new ground* broken by the Local Medical and Panel Committees of Chelshire in 1939, summing up their knowledge since the early years of the twentieth century. They link up their judgment on the unsatisfactory state of health of the human population under their care with the problem of nutrition, tracing the line of fault back to an impoverished soil. That was more than a century ago...

Howard draws on the work of Robert McCarrison who documented the longevity of the people of the Hunza Valley in the western Himalayas, indicating how healthy food comes from healthy agricultural systems with food derived from soils kept in a state of natural fertility. In 1940, considering that sufficient evidence had accumulated he writes *An Agricultural Testament* which advances the following views:

- *The birthright of all living things is health*
- *This is true for soil, plant, animal and man which make a continuous link*
- *Any weakness in the any earlier link in the chain is carried on to the next*
- *The widespread vegetable and animal pests and diseases are an evidence of failure in the second (plant) and third (animal) link*
- *The impaired health of human populations in modern civilized countries is a consequence of the failure in these links*
- *This general failure in the last three links is to be attributed to failure in the first link, the soil. The failure to maintain a healthy agriculture has largely cancelled out all the advantages we have gained from our improvements in hygiene, in housing and in medical discoveries*
- *To retrace our steps is not difficult once we set our minds to the problem. We have to bear in mind Nature's dictates: a) for the return of all wastes to the land; b) for the mixture of the animal and vegetable existence; c) for the maintaining of an adequate reserve system of feeding the plant, that is we must not interrupt the mycorrhizal association.*

This was written in 1940 and is today more true than ever, as is the following:

No one generation has the right to exhaust the soil from which humanity must draw its sustenance ... A healthy population will be no mean achievement, for our greatest possession is ourselves.

The social and environmental costs of unsustainable practices

We like it when our food is cheap. Food is getting cheaper and we think it is good for all. This is a myth. Food is not cheap. We forget the cost to the environment and to our health. We actually pay many times for our food; the first one in the shop, the second one when we, in many countries, pay taxes that subsidize farmers, the third time when we pay for cleaning up the environment and the fourth time when we treat our diseases.

Modern agriculture begins in research stations with inputs, fertilizers, pesticides and mechanization. Where these modern technologies have been used the result is contamination of water by pesticides, nitrates, soil and livestock wastes; contamination of food and fodder by residues of pesticides, nitrates and antibiotics; damage to farm and natural resources by pesticides causing harm to farm workers and to the consumer; disruption of ecosystems including soils, and harm to wildlife; contamination of the atmosphere by ammonia, nitrous oxide, methane and the products of burning; overuse of natural resources causing a depletion of groundwater and loss of wild foods and habitats; the tendency to specialize and standardize, the displacement and extinction of traditional varieties and breeds; new health hazards and deteriorating conditions for farmers and for workers in agrochemical and food-processing industries as well as inhumane conditions for animals.

In addition agricultural modernization has transformed many rural communities into non-places, with no community life, often also called food deserts. People have lost their jobs, livelihoods have become specialized and a growing gap has developed between the well off and the poor, with also the cooption of village institutions by the state and migration to urban surroundings.

At the University of Essex a framework was developed to study the negative externalities of the UK agriculture (Pretty, 2005):

We conservatively estimated that the external costs of UK agriculture, to be at least 1.5 to 2 billion pounds each year. The annual cost arise from damage to the atmosphere, to water, to biodiversity and landscapes, to soils and to human health. Using a similar framework of analysis the external costs in the US amount to nearly 13 billion pounds per year.

These external costs of UK agriculture are alarming. They should call into

question what we mean by efficiency. Farming receives 3 billion pounds of public subsidies each year, yet causes another 1.5 billion pounds of costs elsewhere in the economy. If we had no alternative then we would have to accept these costs. But in every case there are choices. Pesticides do not have to get into water, indeed they do not need to be used at all in many farm systems. The pesticide market in the US is 500 million pounds, yet we pay 120 million pounds just to clean them out of drinking water. We do not need farming that damages biodiversity and landscapes, we do not need intensive livestock production that encourages infections and overuse of antibiotics. ...

In the US in the *International Journal of Agricultural Sustainability*, Erin Tegtmeier and Michael Duffy talk of USD 5.6 to 16.9 billion per year (in 2002 USD) arising from damage to water resources, soils, air, wildlife and biodiversity, and harm to human health. Additional annual costs of USD 3.7 billion arise from agency costs associated with programmes to address these problems or encourage a transition towards more sustainable systems. As the authors indicate, “many in the US pride themselves on our cheap food. But this study demonstrates that consumers pay for food well beyond the grocery store.”

Agriculture and pollution

For most of its history agriculture has been environmentally benign. Crops residues were incorporated into the soil or fed to livestock, and the manure returned to the land. The traditional mixed farm generated few external impacts. This has changed since the Second World War in many parts of the world where farms have become highly mechanized and reliant on synthetic fertilizers and pesticides. These agrochemicals are the primary environmental contaminants produced by agriculture. Contamination is also caused by the wastes such as silage effluent and livestock slurry, and wastes from on-farm processing of products such as oil palm and sugar. Contamination spreads to food, drinking water, to the soil, to surface and ground waters, to the atmosphere, in some instances reaching as high as the stratosphere.

Unwelcome Harvest (Conway and Pretty, 2009) reviews the characteristics of agricultural pollution. Obviously, neither toxicology nor epidemiology can provide unequivocal measurements of risks from pollutants and there are widely diverging perceptions of risk, but in early 1980s there were already some 1000 new chemical substances marketed every year.

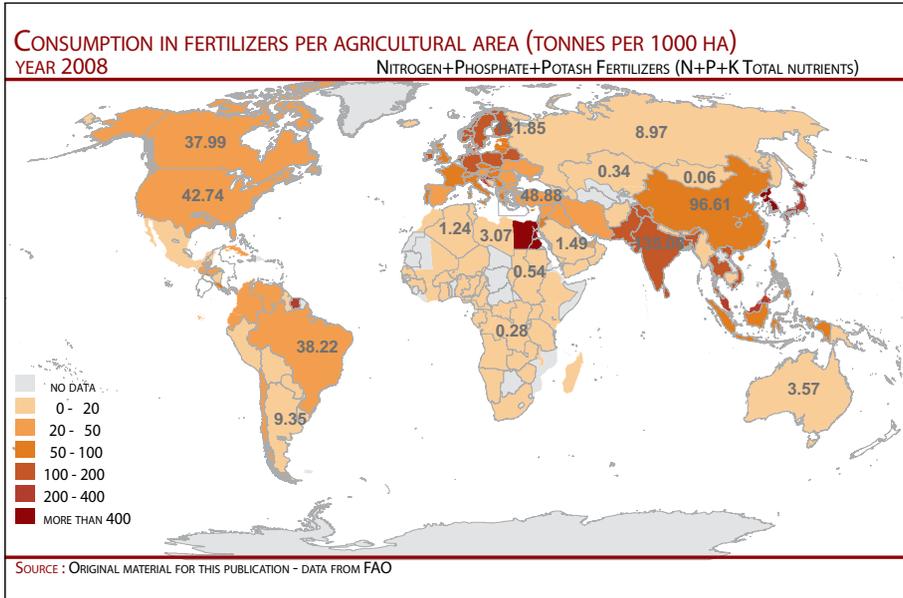
In the case of fertilizers, contamination of the environment arises because not all the fertilizer applied is taken up by crops. Fertilizer use has grown dramatically with a world average of 162 kg of synthetic fertilizers/ha of agricultural area (FAOSTAT 2008) and rates in some countries exceeding 550 kg /ha. Excessive use has been

encouraged by high subsidies and there is widespread evidence of rapidly rising nitrate concentrations, over the past decades in both surface and groundwater. While fertilizers cause less harm to wildlife as compared to the damage caused by pesticides, they are hazardous to human health. They result in our ingesting nitrate which, while not itself directly toxic, can be converted to nitrite that is implicated in a number of serious diseases, four of these being methaemoglobinaemia, and gastric, bladder and oesophageal cancer. The first one, methaemoglobinaemia, is often referred to as the “blue-baby syndrome”. In this condition, the capacity of the blood to carry oxygen is lessened, and affected people, normally infants, exhibit a slate-blue discolouration (cyanosis) of the skin, beginning around the lips and spreading to the body leading to coma and death.

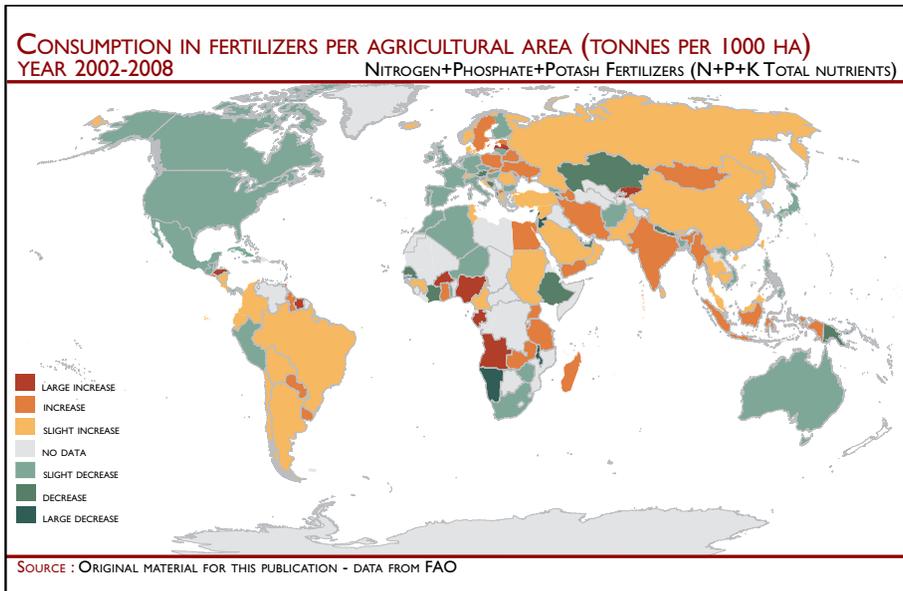
The fertilizer pollution is a growing concern in China with skyrocketing increases of fertilizer consumption in recent years (96 kg per ha of agricultural area in the mainland and 533 kg/ha in the Province of Taiwan) bringing the country to being the absolute number one consumer of nitrogen in the world with a consumption of close to 37 million tonnes in 2009 (FAOSTAT), higher than the second India (15.6 million tonnes), third United States (11 million tonnes), fourth Pakistan (3.5 million tons) fifth Indonesia (3 million tonnes) sixth Brazil (2.4 million tonnes), and seventh France (2 million tonnes) taken together or, in other words, representing 35 percent of the world’s consumption of nitrogen fertilizer.

Today we witness countries taking different directions; some, like China, still encouraging an increased use of synthetic inputs by heavily subsidizing them, and others, which have experienced the negative consequences of excessive use are reducing consumption, while trying to remedy to the consequences. In this respect the OECD has developed an approach to measure national soil surface nitrogen balances (2001) to avoid overuse. Examples of these opposed tendencies are Thailand with a 68 percent increase from 2002 to 2009 and Germany with a 14 percent decrease during the same period.

The actual consumption of synthetic fertilizers in different countries of the world and the trend of this consumption in the last decade, are analyzed for this paper based on the latest FAOSTAT data.



Clearly, the highest consumption of synthetic nutrients per agricultural area appears in the Asian countries (China, Korea, Japan, Malaysia, Viet Nam, India etc.), in the northern European countries (Norway, Finland, Netherlands, Denmark etc.) in the Middle East with Israel, in Africa with Egypt, and in America with Suriname.



The general tendency in the last decade has been a decrease of the consumption of fertilizers in most industrialized countries: North America (United States and Canada), Europe (Spain, France, Italy, United Kingdom, Finland etc.), Australia, and a general increase in some countries of Asia, Africa and Eastern Europe.

When looking at individual countries, the map shows a sharp decrease in Kazakhstan, Papua New Guinea, Angola, Malawi, Ethiopia, Ivory Coast, Senegal etc., and a sharp increase in India, Mongolia, Indonesia, Myanmar, Iran, Azerbaijan, Sweden, Poland, Belorussia, Ukraine, Ghana, Burkina Faso, Nigeria, Gabon, Egypt, Angola, Yemen, Suriname, Guyana, Paraguay, Uruguay, etc.

A possible interpretation about the general trend observed is that the countries that have experienced for a long period of time excessive synthetic fertilizer use, are now reorienting their strategies towards reduced consumption and less energy dependency, while emerging countries and those not yet faced with the effects of environmental and health degradation are still in the growing consumption curve usually through high subsidies and authoritarian policies.

Having looked at the importance of external synthetic input use in different countries and the present trend, the question now is what do we know about the effects of decades of input use and mechanization on soils? This is the subject of this next section.

Land degradation

Talking about a shift towards more viable forms of farming means a better understanding of natural and human-made impact on land. Interactive maps are a powerful tool to understand reality and trend. In this respect FAO has done a commendable work in the last five years to bring forward the most sophisticated and latest available world data related to land degradation. Some results were brought forward by SOLAW (the State of the World's Land and Water Resources for Food and Agriculture) in 2011, and others have been developed through LADA (LAnd Degradation Assessment in drylands) and GLADIS (Global Land Degradation Information System) still to be published. The information provided here is chosen just to provide a general idea of tendencies as this is still work in progress and data is still under review: *"Data from GLADIS - FAO 2011. Provisional data under revision. Not to be used for operational purpose www.fao.org/nr/lada"*

Over the years the degradation of soils has become a growing concern. A recent European Commission work (European Commission DG ENV, 2010) estimates that the improper management of soil biodiversity worldwide causes a loss of one trillion dollars per year, and that the use of pesticides causes a loss of more than eight billion dollars per year.

Global land assessments started 35 years ago but until now they were not able to show where degradation takes place, the impact on people and the cost to governments and to land users and they could not tell what would happen if the decline in soil, water and vegetation continues. The GLASOD (Global Assessment of the status of human induced soil degradation) was produced in 1991 by ISRIC (International Soil Reference and Information Centre), the World Data Center for Soils, with more than 250 scientists, but results were not updated and even the Millennium Ecosystem Assessment (2005) had to use 1991 GLASOD results.

It is only in 2006, with the launch of LADA, that work on quantifying and analyzing land degradation could be continued. LADA defines land degradations as:

The reduction in the capacity of the land to provide ecosystem goods and services and assure its functions over a period of time for its beneficiaries. Ecosystem goods refer to absolute quantities of land produce having an economic or social value for human beings. They include animal and vegetal production, land availability and water quality and quantity. Ecosystem services concern more qualitative characteristics and their impact on the beneficiaries and the environment. None of these can be defined in a simple way.

GLADIS, introduced additional layers that provide more complex characterization of land degradation and describes the status and process of both degraded and degrading land. Results are visualized using radar graphs with six axes for six comprehensive aspects of land degradation: biomass, soil health, water resources, biodiversity, economic production, and social and cultural wealth.

In GLADIS, ecosystem *processes* include: maintenance of energy flux, dissipation, climate modulation; maintenance of hydrologic flux, hydrologic cycle, water quality; biological productivity, plant pollination; maintenance of bio-geochemical cycling, storage, mineral-gaseous cycles, water-air quality; decomposition, weathering, soil development-stability, soil quality; maintenance of biological diversity; and, absorbing, buffering, diluting, detoxifying pollutants-xenobiotics.

Ecosystem *goods* include: Food; construction materials; medicinal plants; wild genes for domestic plants and animals; and water.

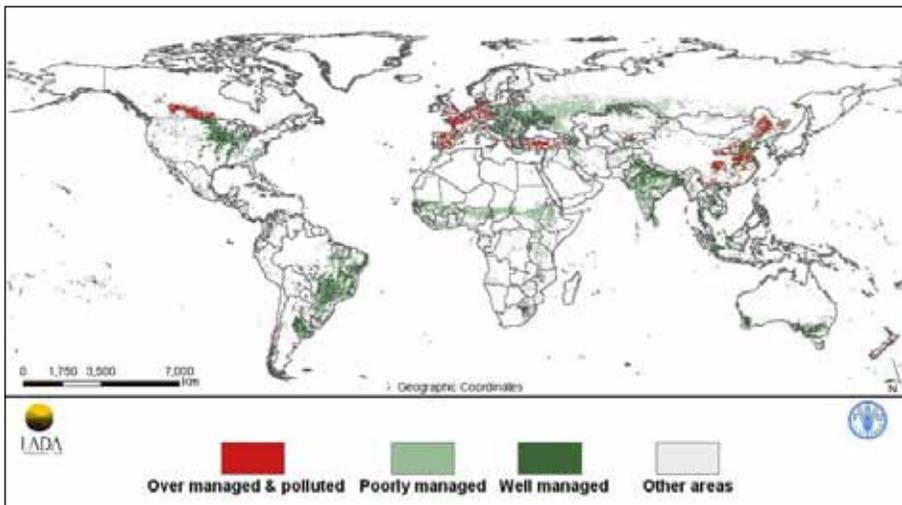
Ecosystem *services* include: Maintaining hydrological cycles; regulating climate; cleansing water and air; maintaining the gaseous composition of the atmosphere; pollinating crops and other important plants; generating and maintaining soils; storing and cycling essential nutrients; absorbing and detoxifying pollutants; and providing beauty, inspiration, and recreation.

The interactive maps of GLADIS have not yet been released to the public as a reality check on the field is still required and work is still in progress. Still, taken

with caution as they are not finalized, the maps provide a very good idea of status and trends, and taken only at this point in time as general indications, they can provide a good picture of the situation. GLADIS, if brought forward, would represent a unique opportunity for a quantum leap in the knowledge of land degradation worldwide.

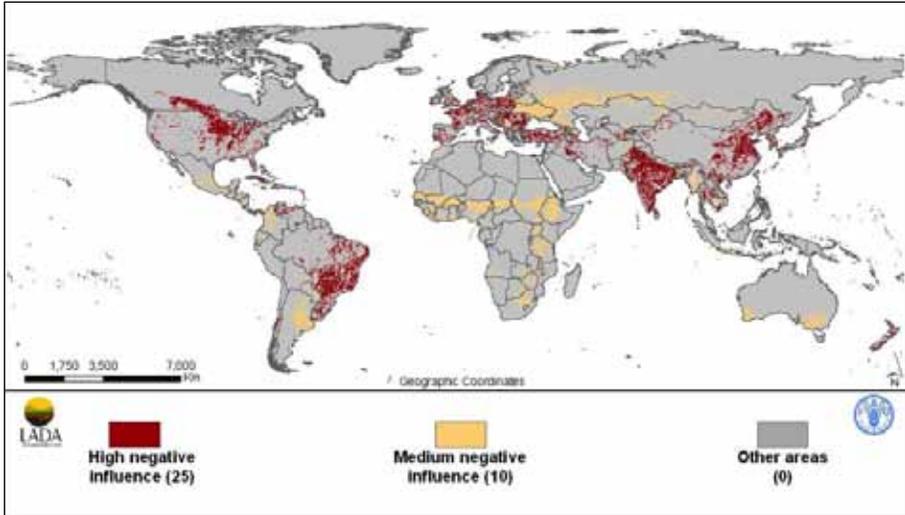
A few selected maps are brought here though they have to be taken as “work in progress”.

Soil pollution due to agriculture

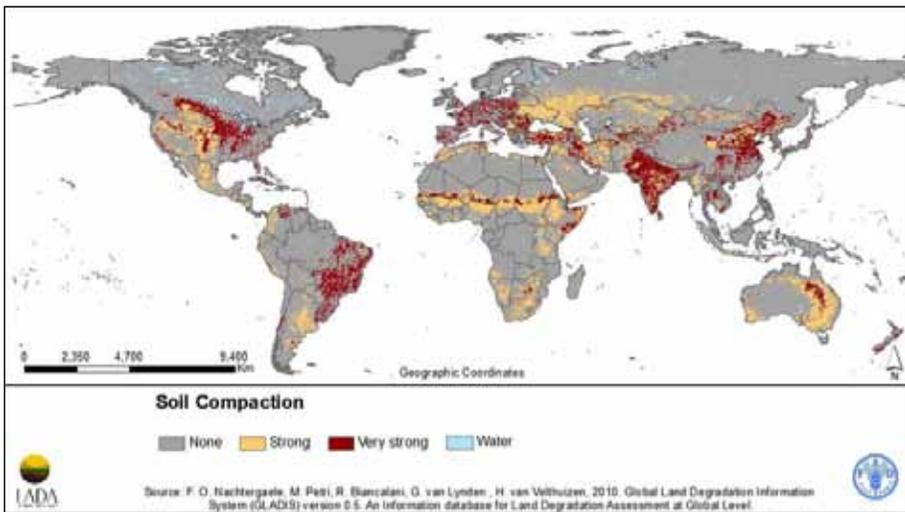


The *status* of soil health depends on soil properties matched with actual use. The *trend* in soil health depends on two major pressures: the physical loss of soil mass and structure, and the chemical well-being (nutrients, toxicities). Toxic substances in the soil come from high input and management levels, e.g. cadmium toxicity related to high phosphorus applications, use of excessive N-fertilizer that leads to pollution of the groundwater.

Mechanization pressure in agriculture

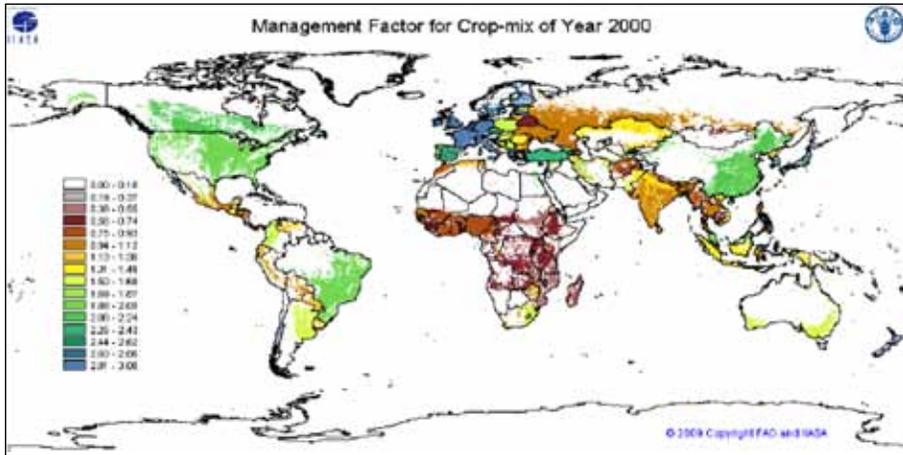


Overall soil compaction



Compaction of the subsoil occurs under external pressure and can create impermeable layers. Most common causes are a strong concentration of livestock (dry climates, around water points), and the use of heavy machinery mostly in industrialized agriculture.

Management levels

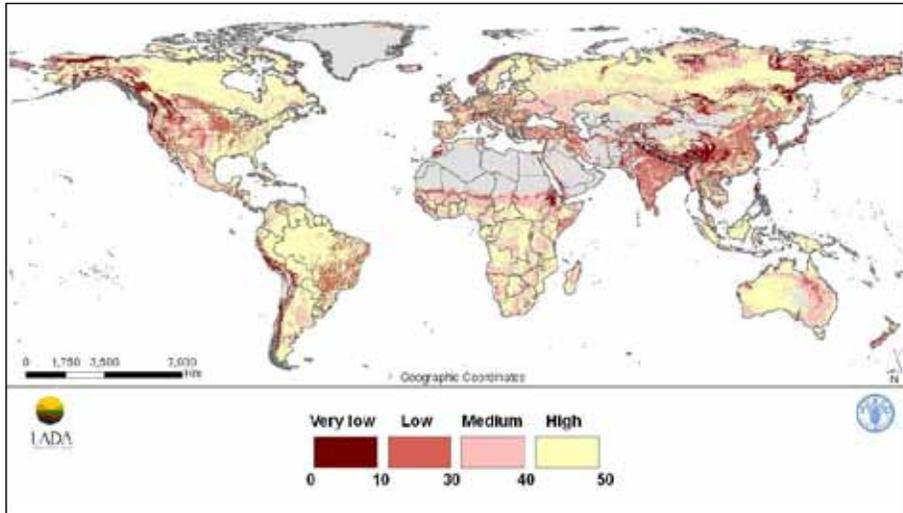


Management levels as defined by FAO in collaboration with IIASA: In SOLAW, FAO defines land suitability for agriculture in terms of capacity to reach potentially attainable yields for a basket of crops. According to the approach and modelling developed by IIASA, the management ratio is 1 when yields correspond to the potential at low input level. It is less than 1 where current yield levels are below the potential. It is more than 1 and is a high ratio when it represents high intensity of agricultural activities and therefore it is considered as a pollution risk.

The illustration of poor management is based on nutrient availability in soils (soil nutrient availability is an indicator taking into consideration soil texture, soil organic carbon, soil pH, total exchangeable bases) compared with overall management and input levels. Nutrient depletion is due to soil erosion and poor management practices. The global management picture highlights low management indexes in Africa (except Egypt and South Africa), values of about 1.0 for Russia and Ukraine, around 1.5 for extensive producers like Australia and Argentina, near 2.0 for Canada and the United States, and between 3-4 for intensive West European production systems⁴.

4. The management index is estimated by comparison of downscaled year 2000 yields (international price weights of 2000/2001) with potential low input yields. Ratios of less than 1.0 represent areas where current yield levels are below its potential at low level input and management circumstances. High management factor ratios represent high intensity of agricultural activities, and therefore are considered a pollution risk.

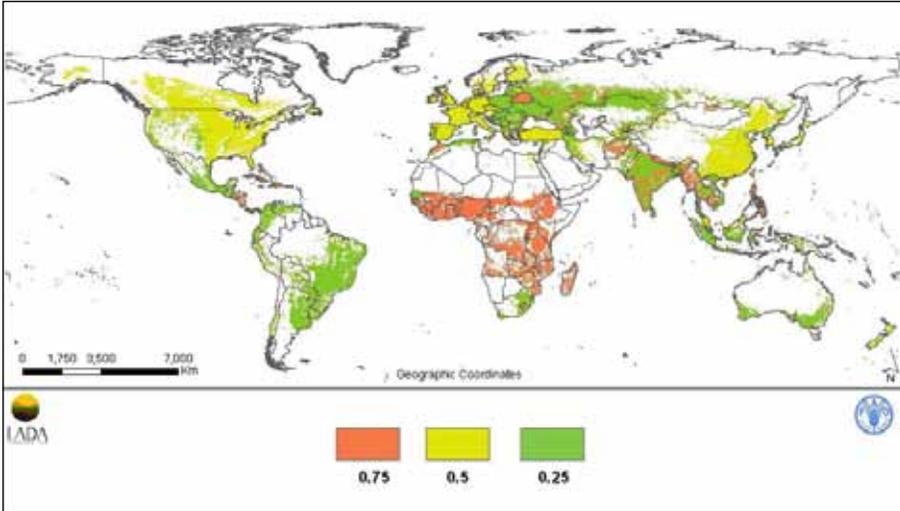
Soil resilience



Soil degradation process rating (0=worst degrading or very low resilience / 50=unchanging or high resilience)

The soil degradation process is derived from the soil chemical *and* physical degradation and gives an idea of the resilience of soils. In summary, in GLADIS, soil health *status*, assessed against prevailing land cover/use, shows that countries in the Sahel and Savanna belt in Africa, central USA and some countries in NW Europe are rated more severely. Also the eastern part of Brazil and India are affected. With respect to soil health *trends* the worst situation occurs in mountain ranges (Himalaya, Andes, Rockies, Alps) and associated with agricultural areas that are either under-managed (most of Africa with the exception of South Africa) or over-managed (most of Western Europe).

Soil protection



Soil cover - P factor: The P factor, or protection, shows how well the management of land protects the land.

On the map, the green part represents the areas where the land is better protected. When the soil is unprotected (bare soil) the P factor is 1, when the soil is wellcovered (meadow, grass cover) therefore almost totally protected, the P factor is close to 0.

Looking at all these maps illustrates the fact that there is a high potential to manage agricultural lands better. The way it looks is that land degradation is a reality both in terms of status and trend directly related to anthropic activity and that much can be improved in this respect.

The following section looks at a different logic applied to the relationship with nature which is the peasant way of farming. This different way of co-evolving with nature has the potential, on a large scale, to significantly transform the way land is being degraded today.



PART III – DIFFERENT LOGIC



**The Differences
Unfolding
Repeasantisation**

Part III – DIFFERENT LOGIC

Summary

We are now at the heart of the paper, at the Gordian Knot. Here is where strings and links get tied and untied. Here is the possibility to relink and reshape differently, using another logic. To uplift peasants to the driving seat, to the leading position. To reconnect our brain neurons another way, and understand that there is more to life than just business, though there is *also* business. Everything depends on the order of things. So, this is the time to let our curiosity return to the openness of our childhood and take a fresh look. What is it to be a peasant? As tough, difficult and hard as it may be, as human and humane as it is and in this respect Steven Pinker in *The Better Angels of Our Nature: Why Violence Has Declined* (2011) gives us some hope for the future. What is at the heart of the differences between peasants and business entrepreneurs? What is it that the peasants have that entrepreneurs do not have and do not know about? How does the peasant way of farming unfold? How is value created? And are peasants disappearing or increasing, both in numbers and in the way they run their farms, in the way they deal with the fruit of their labour? Where are they? This is what is explored in this section.

The differences

The previous part was a journey into the intricacies of a dense forest. Different tendencies have shown different paths often opposed and contradictory. Some have allowed the development of viable forms of farming, with a few examples given of those having gone through a successful transition (knowing that there are many more that we do not even know of), and others entail heavy costs to the environment and societies and will become increasingly unbearable with the increase of fossil energy costs.

What is clear though is that the packages and ready-made recipes should be a thing of the past. They do not belong to this millennium anymore, neither does the world vision that has created them in the first place. Every time we witness a transition that works, it is because endogenous forms of development (defined as a self-generated development which is essentially based on local resources) have found a way to express themselves and local communities have taken the reins.

The journey was also about looking at the horizon to see, if storm there is, where it comes from, finding that clouds may well come from concentration, exclusion and control, more than from a Malthusian fear of the population increase and related pressure on resources though these also need to be taken into account. This leads back to the beginning of the paper, to the fundamental misconceptions and to the lenses used to perceive the world.

This part begins with a semi-tautology:

- there is no agriculture without farming;
- there is no farming without farmers.

The biggest flaw of agricultural development, as astonishing as it may seem, has been the misunderstanding of what a farmer is. Understanding farmers means understanding those who have farmed lands for millennia, it means understanding family farmers or peasants in the true sense. That means having the ability to understand a different logic than the pure business logic; peasants do business, but they do much more than that, and reducing farming to simple business is a reductionist approach that hides the forest behind the tree.

The etymology of the word “peasant” used since the fifteenth century, comes from *paisant/pais/pays* meaning that he or she belongs to the country. Peasant is thus related to being rooted in a place and in the history of that place; it is a beautiful word that gives a space and time dimension to the act of farming. In French peasant translates into “paysan”, and in Spanish it is “campesino”, from the “campo” or countryside, and in these other languages it does not have the negative connotation that it has in English, on the contrary there is an attachment to it, people who are not farmers themselves, relate to it through their ancestors, families or friends. Peasant

farmers are family farmers; which means that the main source of labour comes from the family and the surrounding community usually through relations of reciprocity.

Karen Pedersen, past president of the National Farmers Union in Canada says the following (in Pimbert, 2009):

Peasants? The language around us is changing all the time. Historically, we were peasants. Then when that term came to mean “backwards” we became “farmers”. In these days “farmers” has the connotation of inefficiency and we are strongly encouraged to be more modern, to see ourselves as managers, business people or entrepreneurs capable of handling increasingly larger pieces of territory. Well, I am a farmer, and I am a peasant. I learned that I had much more in common with peasants than I did with some of my agribusiness neighbours. I am reclaiming the term peasant because I believe that small is more efficient, it is socially intelligent, it is community oriented. Being a peasant stands for the kind of agriculture and rural communities we are striving to build.

And Emiliano Ceros Nava, from UNORCA (Union Nacional de Organizaciones Regionales Campesinas Autonomas) in Mexico adds:

This debate is in the literature, it is a fabrication at a higher level by those who know more. In the countryside there is no such debate. We continue being peasants, that is the way it is.

Peasants and, more importantly, the peasant way of farming and how it is re-emerging as the post-modern paradigm, is described in the book of Jan Douwe van der Ploeg, *The New Peasantries –Struggles for Autonomy and Sustainability in an Era of Empire and Globalization* (2009). The theoretical discussion that follows is taken from his book.

Many theories are centred on the peasant as an obstacle to change, as a social figure that should disappear or be actively removed. Theoretically, peasants (or family farmers) have been cut off the land, their place taken by “agricultural entrepreneurs” (or business farmers) well equipped to listen to the logic of the market. Behind this manufactured invisibility, there is an empirical reality in which there are far more peasants than ever before. There is an uneasy combination of invisibility and omnipresence. The contradictory nature of the peasant condition is an ongoing struggle for autonomy and progress in a context characterised by multiple patterns of dependency and associated processes of exploitation and marginalisation. What is clear though, when digging into the reality of peasant farming is that there is a critical role for peasants in modern societies, and that a world with peasants is a better world than a world without them.

First of all, there is a need to understand that peasants are different from business entrepreneurs. The primary *raison d'être* of peasant farming is livelihood and

labour, not only food, and yields are closely dependent on social relationships. Peasants are not disappearing, on the contrary, they are increasing; and they are not small and vulnerable.

To explain what a peasant or family farmer is (and not what *he or she is not*) we take the distinction made by Van der Ploeg between three modes of production: peasant, business entrepreneurial and corporate. Obviously the distinction is not always clear cut and there is a vast range in between with a tendency towards being more peasant oriented or more business oriented but the distinction allows us to understand the different logic behind one or the other mode of farming. People picture peasant farms as vulnerable small entities. They think that corporate farms are large and solid and that somehow in the middle lie the business entrepreneurs who aim at becoming bigger and larger.

These views have no foundation. Corporate and business farming can be as or even more vulnerable than peasant farming and the difference does not lie in the size. The essence of the difference is in the way in which the “social and material are patterned”, in other words, in a different set of priorities and a different outlook to life. As mentioned earlier, if you look at the peasant fields, you can see that they do not *look* the same as those of industrial agriculture.

A common belief is that most of the food is produced industrially. The reality is the opposite. Most of the food produced is produced by peasants and consumed locally, within the 100 mile limit or within national borders. Conservative figures (ETC Group, 2009; IAASTD, 2009; IFAD, 2009; UNEP, 2011; FAO, 2011, Altieri, 2008, World Watch Institute, 2005; Science 2020; etc.) are that peasants produce 70 percent of the world’s foods, and 80 percent is consumed locally (see references in www.ag-transition.org).

The idea that there is no other choice than to further industrialise production to reach the volumes that can feed an increasing human population is simply misinformed. The reality is that volumes are in the hands of peasants and realising it can facilitate a shift towards the creation of more enabling environments. This is not easy as science itself has made peasant farming invisible. It has created an ideal model of what the agricultural entrepreneur *should be* and obscured the way in which peasants *do operate* today in the countryside.

The intrinsic differences between peasants and business entrepreneurs are as follows:

- peasant agriculture is built upon the sustainable use of ecological capital. Its primary aim is livelihoods. It embeds many functions beyond food. Whenever possible, it is the family that owns, or has user rights on the land and other means of production, and the family members who work on the farm. What is produced returns to the farm and is sold in the market.

- business entrepreneurial agriculture is built upon financial and industrial capital (credit, industrial inputs and technologies). The principal aim is profit; the production which tends towards simplification and specialisation is oriented towards the markets. It fits within the state-driven programmes of modernisation of agriculture.
- corporate and capitalist farming follows an agro-export model. It is based on scale and monocultures. Labour force is salaried workers. Production is geared towards profit maximisation.

Fundamental differences between peasant and business entrepreneurial farming is the *degree of autonomy* and the *relationship to nature*. Peasants co-evolve with nature. For business entrepreneurs, while nature remains an unavoidable raw material, the focus is on reducing its presence; nature being capricious, it is a hindrance to scale increase. Processes of production are progressively disconnected from ecosystems. This translates into growing counter productivity (since the fifties efficiency of nitrogen declined, the longevity of cattle fell, energy use is multiplied and its efficiency declined and agriculture became an activity that produces large flows of waste).

Another difference is the *quality of labour*. Quality entails craftsmanship, local knowledge and relationships. This represents human capital in the sense that it reflects the ability to produce in an endogenous way. Peasants have the skills to transform nature in the sense that they have the capacity to realise high and rising productive results per object of labour (land, animal); the so-called *savoir-faire paysan* (peasant know-how). They use internal indicators (best ration per cow depending of the history of the cow). In contrast, the business entrepreneurial farming patterns labour and productive processes according to market relations use external indicators (best ration depending on price of milk and cost of feed).

In the peasant mode, the *market* is an outlet, in the business entrepreneurial mode the market is an ordering principle. The focus on managing nature with great skills is not an expression of non-economic behavior nor of peasants being un-enterprising; on the contrary peasants are keen to grasp new opportunities. They are enterprising, inventive and keen. But they do not operate in a business entrepreneurial way. The underlying logic is different:

- the peasant logic is: production per labour object, care, dedication, self-sufficiency, aesthetic of the farm.
- business entrepreneur logic: price-cost ratio, margin, technology, scale, income.

The peasant follows a step by step process of growth. She aims at improvement in yields and at the value added per object of labour; she finances any increase as much as possible with her own available means.

For the business entrepreneur, the scale is the main lever. The increase in scale results in decrease in the margin per object of labour which induces a need to further accelerate the growth at farm level, a typical *fuite en avant* (running forward). She will require the newest technologies and will restructure the farm so as to fit the new technologies. In this model, taking credit becomes strategic.

The peasant mode of farming centres essentially on the creation and growth of value added, which at the higher level of aggregation translates into the creation and growth of social wealth; thus, in comparison, peasant farming contributes more to the generation of social wealth than entrepreneurial and corporate farming. This is the case in both Europe and in developing countries. Field studies running through four decades show that the difference of value added between peasant approaches and business entrepreneurial approaches increase as time goes by.⁵

In addition, peasant farming produces the highest total amount of gross value added (GVA). This is not only due to the fact that total production per unit of area is higher, but also because within the peasant mode of farming Gross Value Added represents a larger part of Gross Value Produced. If farming is structured according to peasant mode, not only more production and employment are generated, but the peasant mode *generates more income* (demonstrated in *The New Peasantries*). This applies to the agricultural sector as a whole. It equally applies to per capita income levels.

Hence, peasant farming (based on labour-driven intensification) is not identical to the often assumed distribution of poverty. There are many places where ongoing intensification is blocked and where diminishing returns emerge. Such phenomena are not *intrinsic* to peasant farming.

Unfolding

Here is a description of how peasant farming unfolds:

All around the world peasants work with nature in a very different way than entrepreneurs or capitalist farmers do. They mould and remould resources in a way that allows continuity. In a context of dependency relations, marginalisation

5. Van der Ploeg studied the differentiated growth patterns of production and value added in Parma (Italy) provinces in 1971, 1979 and 1999. He demonstrates that in 1971, the gross value of production (GVP) realised through the peasant approach constituted 15 percent more than realized through the entrepreneurial mode. In 1979, the difference was 36 percent and in 1999 it amounted to 56 percent. This clearly demonstrates that there is no "intrinsic backwardness" to peasant farming. It also stresses that the frequently articulated view that the peasants are unable to feed the world is unsound since it depends upon the "space" they dispose of.

and deprivation, they struggle for autonomy; resources are, as much as possible, self-controlled and self-managed. The co-production (or mutual transformation) human-living nature and the interaction with the market allows for survival and for strengthening the resource back. In addition, peasants usually engage in other non-farm activities and their activities are embedded in patterns of cooperation and interrelations.

Co-production brings progress and new forms of local development. A meticulous fine-tuning, slowly improving the quality and productivity of key resources together with continuous re-patterning of the relations with the outside world allow for two interwoven processes: *production* of goods and services and *reproduction*. Production at the farm is not, as often assumed, related to family consumption; it is related to the operation of the farm as a whole.

The peasant condition and the peasant mode of farming represent a flow through time, a dynamic process that may unfold, depending upon the social formation in which it is embedded, in different directions, with different rhythms and through distinct mechanisms. It entails co-production, patterns of relation to markets that allow autonomy (flexibility, fluidity), pluriactivity, reciprocity and cooperation.

Characteristics of peasant farming

- peasant farming tends to the production and growth of as much value added as possible; the focus of the business entrepreneurial mode of farming is geared towards as much takeover of resources as it is of value added, and the capitalist mode centres on profits (surplus value), even when it implies a total reduction of value added. When the main conditions are equal, the peasant mode of farming results in yields that are higher;
- a resource base nearly always limited;
- intensity of production; an abundant labour and scarce labour objects (land, animals etc);
- an organic unity; the resource base is not separated into opposed and contradictory elements (such as labour and capital, or manual and mental labour). Available social and material resources are possessed and controlled by those directly involved in the labour process;
- centrality of labour and innovativeness; levels of intensity depend on quantity and quality of labour, importance of labour investments (terraces, irrigation systems, buildings, improved crops and carefully selected cattle, etc.) the nature of applied technologies (skill oriented rather than mechanical) and novelty production;
- distancing from markets on the input side, differentiation on the output side.

Differing values of peasant farming

The farm resources normally referred to as capital (land, animals, buildings, machines etc) do not reflect capital *per se* as they are not mobilised on the capital market. Which means that they do not work as outside investment that need to realise profit. Resources allow to generate income and to improve the farm, making it a better and more beautiful place to live. The available resources and especially the land do not function necessarily as capital in the classical sense. If they were to do so they would flow outside agriculture. Their value is that they allow for farming and that they might be converted in the longer run into a pension for the senior generation and a comfortable starting position for the younger generation that takes over. This represents a socially regulated and institutionally grounded process of conversion; a conversion very different from the conversion of capital into profits subsequently reinvested as capital in order to realise more profits. In the peasant mode of farming, civil and labour rights are as, if not more important than property rights.

A compelling example of repeasantisation is illustrated by one of the largest peasant communities in Peru, the community of Catacaos⁶. In Catacaos repeasantisation emerged out of the change of former *haciendas* into cooperatives, appropriation of land and water, a rise in the number of individual plot holders and a move away from the high degree of market integration. The shared values of the peasant community are stated as follows:

- *united, indestructible and autonomous community*
- *governed through the democratic intervention of all members*
- *all members are equal in rights and duties*
- *a community that recognises labour as the only source of wealth*
- *no exploitation of resources by foreign elements*
- *secure for members satisfaction of basic needs- housing, health, food, education and employment*
- *works for immediate and future needs of youth*
- *engages in solidarity with labour class of country*

Comparing farms

Research on farming styles has shown that there is no single way (let alone superior way) to produce a reasonable income and promising prospects. There are many ways, each entailing their own specific coherence that can bear good results.

A comparison was made between a peasant and an entrepreneurial approach in Dutch dairy farming⁷.

6. *The New Peasantries*, p.53

7. *The New Peasantries*, p.137

Two farms were compared: a low-cost farm and a high-tech one. Both designed in a way for one person to accomplish all the work, and both able to achieve a comparable income. To meet these criteria, the low-cost farm had to produce a quota of 400,000kg of milk, while the high-tech farm needed a quota of nearly 800,000kg. Income per working hour was 19.20 euros for the low cost, and 16.36 euros for the high tech. With the available Dutch dairy quota there would be space for nearly 13,900 dairy farms of the relatively large-scale entrepreneurial farm and if the peasant style was to dominate, the total number of farms would be twice as high. More importantly, creative employment and the created added value would also be twice as high.

	Low cost farm	High tech farm
Units of labour force	1	1
Working hours/yr	2500	2490
Hectares of land	32	35
Milking cows	53	81
Milk yield per cow	7547	9673
Total milk production (kg)	400.000	783.515
Concentrates per 100 kg (€)	3.8	7.5
Labour cost/100kg of milk (€)	13	6.7
Costs linked to technology use/100 kg	5.4	7.1
Production costs per 100kg (€)	34.5	34.7
Realized income/hour (€)	19.2	16.36

Source: Data provided by Lelystad Centre for Applied Research, Netherlands, 2000

Two questions arise from the study: the first is why farmers aim for high volumes of production if they can earn the same from only 50 percent of such a volume? The second question concerns the future: knowing that the gross margin in the entrepreneurial type of high-tech farm is only 50 percent of the gross margin realized in the peasant low-cost farm, what would happen if, due to globalisation and liberalisation, off-farm prices dropped significantly?

Repeasantisation

Ironically, the logic of industrialisation is pushing towards a reemerging of peasants (a repeasantisation). Off farm prices are pushed down to the extent that marginalisation and new dependency patterns are introduced which triggers the

need for survival in a context of deprivation and dependency. This repeasantisation trend is now observed both in the South and in the North.⁸ It has been the case in Europe over the last decade. It involved the search for more autonomy and a widening of the resource base. The response to the squeeze imposed on farming in South-East Asia is extremely low levels of remuneration. In parts of the United States, Brazil, Australia and New Zealand it is increasing the scale of farming (thus contributing to deepening of the squeeze).

What can be observed is that Europe is moving towards greater multifunctionality. European farmers are making their farms more pleasant and reconstituting themselves as *new* peasants, not as yesterday's peasants, but as peasants located at the beginning of the third millennium. What remains the same, however, is that current forms of repeasantisation are barely understood by most scientists and politicians, which has been the case throughout the ages. At the same time, a parallel process unfolds with, in a number of countries, small farms being eliminated.

What is happening is that in reaction to large commodity markets controlled by powerful food empires, many farmers are starting to diversify their output by selling products in the form of real foods with indications of origin and quality. New products and services are produced and new market circuits are created. The *regrounding* of agriculture upon nature plays a central role; new forms of local cooperation are rediscovered and further developed. Farmers are taking their distances with agro-industry, banks and the expert system. It is a radical change to the idea that improving the efficiency of farming was the exclusive role of science and associated expert systems with little or no role for the farmers.

A paradigm shift starts to unfold that has never been clearly articulated at institutional levels. This is because it runs counter to too many institutional interests associated with previous modernisation processes. Admitting that such a far-reaching shift is occurring would imply that vested positions, scripts and routines need reconsidering. It might also damage the aura of "always being on the right track" (indispensable for expert systems and agrarian policy). European farming is experiencing a far-reaching, complex and as yet unfinished process of transition that is unfolding along several different dimensions.

Increased autonomy materialises in a recreation of the resource base of the farm: it is broadened and diversified. It also means that more or less forgotten resources are rediscovered. Good examples are manure and soil life. Labour again becomes a

8. For example see for Europe, tras-os-Montes (Dries 2002), Spain (Guzamn and Martinez Alier (2006), Scotland Scottish Office (1998), Eastern Europe (Hann 2003) and Burawoy (2007), elsewhere in Europe (Ploeg et al 2000 and Ploeg 2002c), Coldiretti (1990) and Scettri (2001). For the US Joannides et al (2001). For Latin America Brazil (MST, Hammond 1990, Branford and Rocha (2002), Souza Martins (2003) and Cabello Norder (2004), Schüren (2003), overview Feder (1977, 1978), Mozambique Hanlon (2004).

central resource both quantitative and qualitative. Tailored labour (the fordisation of agriculture) that emerged during the epoch of modernisation is replaced by other forms of labour that allow for more overview, flexibility and quality, and greatly reduced stress. The shifts tend to enlarge the value added. The same shifts are reconnecting farming again to society and nature. While the model of business entrepreneurial farming only contributes to further deepening the current agrarian crisis, repeasantisation may potentially bridge the many chasms that have, in the meantime, been created.

The transition occurring has some specificities that point to its peasant-like nature. It is not governed from any central locus of control; instead it is endogenous and somewhat anarchic. It does not offer a global solution for a range of different local problems and situations, but is evolving as a growing range of diversified local solutions for a general problem (i.e. the squeeze on agriculture). And finally, it does not proceed as a mega-project; but as a wide range of interconnected steps (that increasingly extend through time and space), which together compose, in a way that is constantly fluctuating, the overall and, indeed, massive change that is transforming agriculture and the countryside.

This type of repeasantisation is not a return to the past, it is the construction of the peasants of the third millennium. Its importance goes much further than simply changing the landscape. But it is difficult to understand a reality increasingly re-patterned in a peasant-like way with tools and concepts that belong to a business entrepreneurial mode, nor will agrarian and rural policies function if they are based on the fundamental misunderstanding cited earlier in this paper.

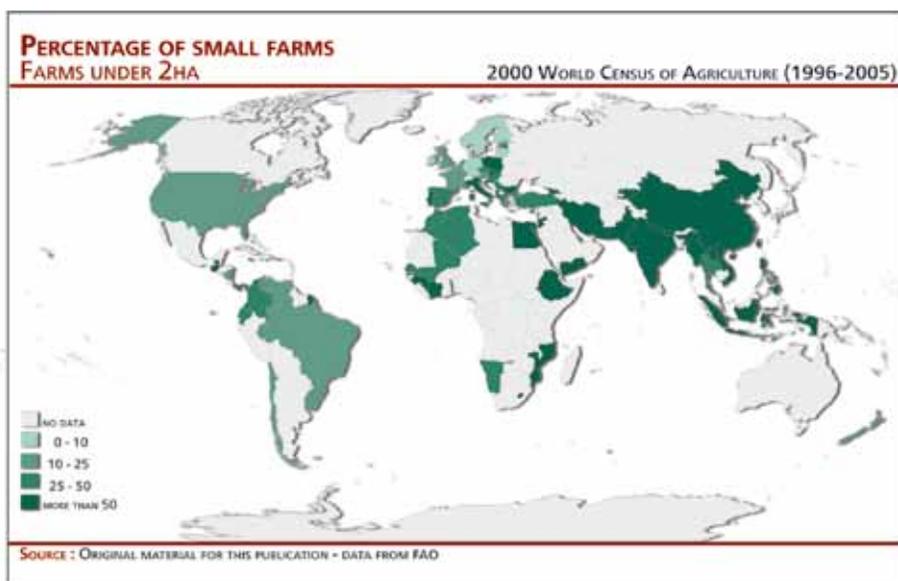
Peasants in numbers

Paradoxically, the importance of family farmers and the wave of repeasantisation at global level, despite their fundamental importance, are not well known. The small-scale farms usually remain outside the purview of the agricultural census. The fact that very small holdings are excluded from the statistics does not reflect their importance, which in turn does not allow policies to be developed that can support them.

An important characteristic of peasant farming is family labor. The latest FAO census reveals that globally 250 million holdings in 57 countries (half of the total holdings reported in the census) employed 22 million workers which is less than 1 worker per 10 holdings. Hiring workers, except in industrial crop production, is the exception. On the other hand, the census reports that farms remain a huge source of employment in agriculture for household members with 228 million holdings employing 588 million members of households, with an average of 2.58 household members working on the agricultural holding. China reported

519 million household members engaged in agriculture on 193 million holdings with 800 million persons, an average of 2.7 household members per farm (each household of 4 persons).

In view of the absence of statistics that specifically record the importance of peasants with internationally agreed criteria, a review was made for the purpose of this paper based on the farm size using the latest data available from the FAO 2000 World Census on Agriculture (1995-2005). This is with a view to firstly assessing the percentage of small farms under 2 ha existing worldwide, compared to the total number of farms, and secondly also to assess the trend of the increase or reduction of the number of these small farms, taking the data from the last three world censuses of agriculture (since 1970), to analyse if peasants are disappearing or, on the contrary, increasing and where. The results on percentage and trends, for the countries for which data is available, are shown in the following two maps (see Tables in Annex).



In total, in the 84 countries concerned, the total number of farms amounts to 436 million which represents 83 percent of all the farms of the world⁹. 85 percent of these are small farms. This is an extremely high number which clearly reflects the importance of the number of small farms worldwide.

Not surprisingly the map shows the highest percentages in Asia with China (98 percent), Vietnam (95 percent), Nepal (92 percent), Indonesia (89 percent), India (82 percent), Laos (73 percent) and Philippines (68 percent).

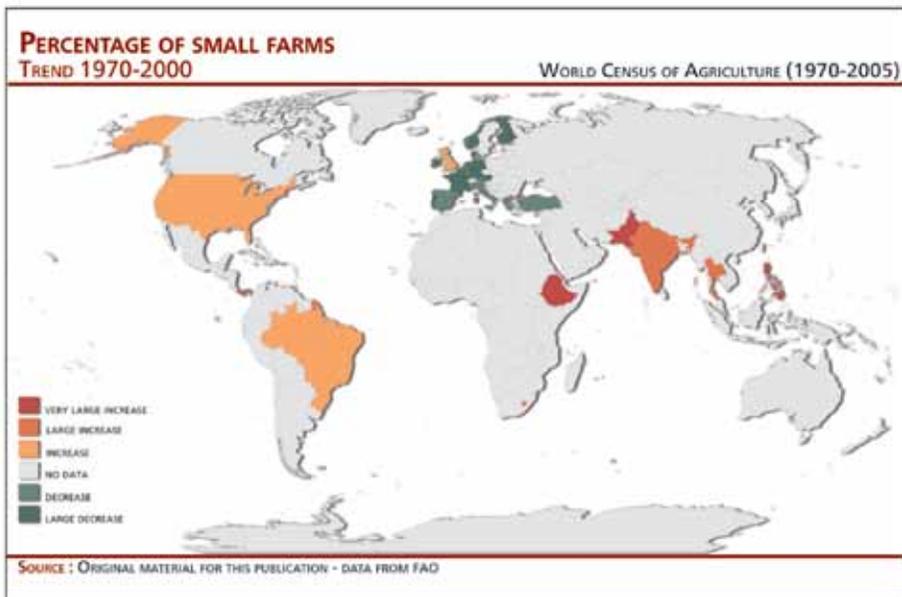
⁹ Based on IAASTD figure of 525 million farms

High percentages are also found in Africa with Lesotho (98 percent), followed by Egypt (95 percent), Cape Verde (89 percent), Ethiopia (87 percent), Mozambique (84 percent) and Yemen (84 percent).

In Latin America and the Caribbean the highest percentages appear in Panama (90 percent) followed by Guatemala (89 percent) and French Guiana (56 percent).

In Europe, Italy shows a percentage of 57 percent, Portugal 55 percent and Poland 51 percent, while at the other extreme of the spectrum with very low percentages we find Denmark (1.7 percent), Ireland, Finland, Sweden, Latvia, Norway, Lithuania and Germany (8 percent).

Interestingly, the United States, United Kingdom, France, the Netherlands, Chile, Venezuela, Nicaragua, Brazil, Belgium, New Zealand, Austria, Luxembourg and Uruguay are within the same range 10 to 25 percent. In the case of the United States, New Zealand and Uruguay, the data was taken for farms under 5 ha as data was not available for those under 2 ha.



To make this map on the trends of small farms, the data was taken from the world agricultural census between 1968 and 2005 with available data for that period found in 36 countries (25 percent of the world's farms), which are those colored on the map.

In the 36 countries, what we observe is that in half of them there has been a growing trend of the number of small farms while in the other half these numbers have

decreased. The increase in the countries concerned is higher than expected and in some countries the increase of small farms comes as a surprise. In the countries where the number of small farms decreases, the percentages are often lower than expected. In reality, the number of small farms worldwide is not decreasing in the trend often described and not decreasing at all but on the contrary, increasing in large parts of the world.

Overall, during the three decades from 1970 to 2000, the number of small farms went from 66 million to 126 million, an increase of 91 percent. This increase reflects the importance of small farms and their role in providing a livelihood for hundreds of millions of people though in many cases the small size of farms has become a limitation to produce sufficiently for the family.

The largest increase in the number of small farms can be observed in American Samoa, Panama, Pakistan, Philippines and Ethiopia where increases in the number of small farms exceed 150 percent. In Lesotho, Nepal, India, Thailand, and French Guiana the range of increase is between 70 and 150 percent.

The surprise is to observe an increase of up to 25 percent of the number of small farms since 1970 in countries such as the United States, United Kingdom, and to observe the same increase in Brazil, Virgin Islands, Saint Lucia and Cyprus.

On the other hand, decreases up to 31 percent appear in Turkey, Puerto Rico, Italy, Greece and Spain; and larger decreases of up to 50 percent in Portugal, the Netherlands, France, Austria, Luxembourg, Germany, Norway, Belgium, Denmark, Ireland, La Reunion, Guam and Finland.

Movements and organisations

Who speaks of peasants? Peasants. The last decade has witnessed the growing and strengthening of the largest peasant movements in the world (La Via Campesina, ROPPA¹⁰, PROPAC¹¹ etc.). Increasingly the word peasant is being rehabilitated by peasants themselves. The birth of peasant movements and the concept of food sovereignty are well described in the literature (Rosset, 2010; Silliprandi, 2011, Desmarais, 2007; Holt-Giménez, 2012; Nyéléni, 2007; IPC Food Sovereignty, Windfuhr and Jansen, 2005; etc.). They are now deeply transforming the agricultural landscape and overturning the power script including the awakening of a *female peasant* identity that is politicised. A number of authors have also written about the importance of local organisations (Pimbert, 2009; Gunderson, et al., 1995; Borrini-Feyerabend, et al., 2007) and of platforms that bring relevant actors together (cooperatives, farmer field schools, pastoral associations, farmer groups and user groups etc.).

10. Network of peasant organizations and producers in West Africa (Réseau des Organisations Paysannes et de Production de l'Afrique de l'Ouest)

11. Regional platform of peasant organisations of Central Africa (Plateforme Régionale des Organisations Paysannes d'Afrique Centrale)

In their paper on the birth and evolution of La Via Campesina (which in English means “the peasant way”), Rosset and Martinez highlight:

Analysts have long predicted the demise and disappearance of the peasantry as an inevitable result of the penetration of agriculture by capitalism ... Nevertheless, peasant communities have not only refused to disappear (...), but in recent years peasants have organised in a sophisticated, transnational way to respond to the neoliberal phase of late capitalism (...). Over the past 20 to 30 years in rural areas of the world, as neoliberal economic policies began cutting back, and in many cases eliminating, the institutions that supported peasant and family agriculture, the legitimacy of national government policies, political parties, and international financial institutions was eroded in the eyes of peasants and family farmers. The assertion of rights and other demands for change by rural peoples – such as the assertion of the right to land, the right of rural peoples to produce, and the right to continue to exist as such – have been the points of unity of peasants in the world (...) peasants and family farmers have been able to build a structured, representative, and legitimate movement, with a common identity, that links social struggles on five continents.



PART IV - TRANSITION



Conceptual Framework
The Policies
Alliances

PART IV - TRANSITION

Summary

Transitions are capricious and difficult to tame. They contain elements of surprise and force people to deal with the unexpected; hence the need for active involvement and for a diversity of ingredients, to make sure that they can follow their own specific trajectories. Peasants often would like to do more and differently, but they are constrained; how to unleash that locked potential, the unlimited abilities *on offer* that lay idle? Twelve steps are proposed. They are not incremental nor are they in order but they follow a reiterative process. The framework that is presented can be visualised as a painting for which only the frame is being built and for which the painting in itself is left blank for local communities to do the painting and mix the colors as they wish. The surrounding framework, instead, is carefully designed with clear roles and responsibilities for the different players involved. In other words, the framing that surrounds this center of open possibilities will contain the values, the principles and the conditions that can allow the emergence of endogenous development until it becomes self-propelling. A transition platform is suggested with the tools and mechanisms that can make it attractive for younger generations to engage in the crafting of foods and services that are related to nature. Those who can make the transition hit scale are mentioned within the chessboard of the agricultural development players, and so are the enabling policies that can allow the existence of the peasants of the third millennium, in other words, the existence of landscapes, foods and well-being for human societies.

Conceptual framework

A transition is a process or a period of changing from one state or condition to another. The word comes from *transire*, “go across”. The purpose here is to present the possibility of a path to go across the bridge of unsustainable current practices in agriculture, towards more viable lands and to stimulate further discussion. This section goes into twelve proposed steps for a transition process. The steps do not necessarily follow each other as there is no pre-established sequence, but there is continuous reiteration amongst the various steps.

Transitions are multilayered, multilevel, multi-actor, multidimensional and multistage.

Central in transitional processes is the creation of new connections and patterns that connect people, institutions and resources that were, until then, isolated. This is why local conversation and democratic consultation are important. Transitions are very much about the exploration and creation of these new connections.

To follow these steps some conditions need to be met: for a transition to materialise, basic rights need to be recognised, access to an outlet such as a market needs to be made possible, and farmers need to have the basic means to produce. Then, a transition can take place, and when it becomes successful it starts to be self-propelling and to go through complex progressive stages.

It is also important to know that in transitions there are periods of confusion and the construction of temporary technologies which may appear at first sight irrational (“monstrosities”), but they are the ones that allow a smooth passage from one stage to another until a more adapted form emerges. Another characteristic of transitions is that they often need people who facilitate interface and help make things happen as they feel committed and align with the common goal.

The twelve steps that are presented here constitute the framework for this transition to materialise. Usually, the common approach, when building a framework, is to fill up boxes. In this case the approach will be different. The idea is to leave the boxes purposely empty. To keep them blank so as to leave an open space where all futures are possible. Symbolically, the framework can be visualised as a painting for which only the frame is being built and for which the painting in itself is left blank, for local communities to do the painting and mix the colors as they wish. The surrounding framework, instead, is carefully designed with clear roles and responsibilities for the different players involved: farmer organisations, regional cooperatives, policy makers, political leaders, investors, corporations, scientists, citizen groups, businesses and many more. In other words, the framing that surrounds this center of open possibilities will contain the values, the principles and the conditions that can allow the emergence

of endogenous development (defined as a self-generated development which is essentially based on local resources).

Open spaces for autonomy are voluntarily opened and left to the ingenuity of those who decide to repattern their resources with the aim of transforming a grim reality into flourishing dynamics. Obviously this is not an easy path to take, and it does not go without struggles and battles, but it is alive; it brings back life. Resignation and misery can give way to questioning, revisiting, trial and error and creativity. Probably chaotic, and intermittent at the start, it can find its own rhythm if it is guided by confluent very long term visions defined for and by the community. When relationships are being rebuilt, when links are reconstructed, when resources are re-evaluated through different lenses, when outreach beyond borders allow innovation to flow and novelties to emerge, then the space for thinking, expanding and thriving is brought back into existence.

The saddest process to witness is the slow and seemingly irreversible decay of whole territories and regions previously endowed with landscapes of aesthetic beauty, falling into the hands of outside powers of control that dictate form, size, quality, delivery, price of monotonous large quantities of low quality commodities imprisoned in strictly regulated processes, being delivered far away to impersonal plastified outlets. It is difficult in this context to imagine the encounter by an anonymous consumer with the pleasures and delights of foods. When human relationships are absent and the consumer loses knowledge about what she is eating and where her food comes from, pleasure fades away. Whole territories lose their identity in this way and this is the tragedy of our times. Assets are not used, people are unemployed and while we know that this is not a fatality, it should not be the case and a lot could be produced in a different way. The question is how to release these forces and potential.

We have learned from the development interventions of the last decade that one master plan fits-all does not work, nor does a solution imposed from the top. What needs to be done is to set free the productive capacities, imaginations and willingness to progress of those who are in the countryside. This means that we neither have to start from scratch, nor do we have to start everywhere at the same time. Due to a variety of reasons (different ecosystems, different social organisations etc.) some places start transitions earlier than others. These are the places that can be converted into true learning laboratories for progress, especially when outside means are made available. Once these promising places turn out to be successful, then attention shifts to how this can be facilitated and extended to wider areas. Facilitation will mean that instead of blocking these unlimited ingrained potentials, the purpose will be to provide the means and tools that are needed to accompany these various transitions at various stages.

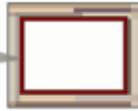
A pro-peasant mechanism that can positively accompany transitions could be thought of but has not been invented yet, though we know that this is where value and a vast potential of dynamic creation of wealth exists. Nowhere yet has there been a transition platform created specifically to imagine, invent, build and give access to tools and mechanisms of the third millennium specifically aimed at peasants. Legal knowledge and financial tools, and many more, are still to be invented to fulfill the unlimited potential of peasant communities not only in rural areas, but in urban surroundings too. Tools and mechanisms that can make it attractive for younger generations to engage in the crafting of foods and services that are related to nature.



The steps

These steps are taken from real life processes of change that are already occurring in many parts of the world. To facilitate their understanding, one concrete example is chosen here (presented in italics), the North Frisian Woodlands¹² (NFW) in the Netherlands (presented earlier under *Islands of viable patterns*, as an example of transition), to illustrate each step, with the understanding that the proposed principles can be applied worldwide.

1. LOCAL CONVERSATION

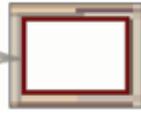


The process starts on the ground, at the level of the communities. It corresponds to the need felt for change, either because of a situation that has become unbearable, usually due to pressures from the outside, either due to an increased degradation of resources and quality of life within, or sometime due to the an emerging strong belief that things could be done far better. The characteristics in regions and countries widely differ, but the mechanics and dynamics are alike. Mobilisation starts on the ground, triggered by diverse purposes, when some individuals, women and men, coalesce around the opening up of new opportunities; they all encompass the search for a better quality of life be it in rural or urban surroundings. In the farming context the purpose is to bring back acceptable conditions of production linked to basic social and labour rights, together with access rights. Along the process access to specific tools can be facilitated by an open platform to support the premises of change towards diversified forms of existence. This is especially true when people feel themselves that they could do better and translate this into proposals that are encouraged by those who align with their purpose.

In the NFW, during the early 1990s a national law (on ammonia and animal production) was implemented to protect nature from acid rain. The new regulations implied that in the hedgerow landscape agricultural activity would have to be frozen. The proposition provoked considerable anger in the area. The argument was that farmers had created that landscape and had always taken care of it. Mobilization began and farmers started to develop a proposal for an alternative solution.

12. Ploeg 2009. p 185

2. MAPPING OF RESOURCES



Looking around with a fresh look will allow the mapping of opportunities and constraints in a different way. The reframing of existing resources can transform sources of pollution and nuisance into assets that can feed back into the production loop. In addition to mapping resources, mapping the territory is a tool widely used that provides a powerful projection to the future, presenting visually what could be, and a bonding exercise towards a common vision. Comparative approaches that explore heterogeneity and compare in quantitative and qualitative terms the way resources are being used in different ways of farming (e.g. industrial versus agroecological) is often an eye opener for those taking a fresh look.

The municipality promised not to declare the hedges acid-sensitive elements in exchange of the promise from farmers to maintain and protect the hedges, ponds, alder rows and sandy roads of the area. Thus, farmers' willingness to maintain and further develop natural elements emerged as an important resource. Consequently, six associations were created with this purpose, and they took responsibility for caring landscape, nature and biodiversity. Thus state objectives were secured but through other more appropriate means.

3. EXPLORATION OF NEW PRACTICES



Post-modern tools for peasants, different from those developed in the modernisation paradigm, are still to be invented. Many viable practices exist in different parts of the world, but new tools need to be invented to bridge them and take them forward (e.g. sophisticated patterns of intercropping and mixed cropping exist in many parts of the world, experiments are now brought forward in some areas such as cereal and even vegetables in pastures in permaculture but these are not widely shared). Here there is a whole new field to be explored. Having access and sharing knowledge and services could be facilitated by virtual platforms able to merge different forms of connectivities involving a skypepeasant with wikipeasant and google-for-peasants and many more still to be imagined, that could be interwoven into the fabric of local and experiential knowledge, mixing subjective and objective knowledge towards novel forms of applied knowledge. The purpose being to open up the possibilities of technologies at the service of communities and not otherwise, thus facilitating independence, autonomy and

self-determination. Open source access to the depth and breath of millennia of accumulated knowledge related to agriculture, with due protection against knowledge appropriation, can be a way to put accumulated wisdom at the service of peasants for trial and adaptation in different environments, a response to the vagaries of the weather and the climate.

Knowledge tools

The idea is the construction of diverse pools of easily accessible knowledge in different forms that can allow the opening up and expansion of possibilities at a local level, benefiting from the successes and failures in other places.

This would:

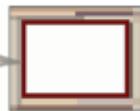
- reduce the isolation of farmers and their marginalization at the edge of progress and dissolve the backward perception
- bring forward the pride and recognition of the main artisans of our foods
- open up the range of possibilities
- increase the ability to better cope with changes

This can lead to all sorts of applications such as, exchange and distribution of different seeds by peasants to be tried in their own fields etc. New ideas could be tested in transitional spaces, strategic niches which would constitute the physical areas for experimentation.

Several novelties were developed and tested for the maintenance of alder rows, which later became the ingredients of the national programme for nature management by farmers. The associations designed an environmentally friendly machine for manure distribution (a machine appropriate for small fields surrounded by hedges and alder rows) and succeeded in engaging nearly all farmers in the management of nutrient accountancy systems.

1. The alder trees are characteristic for this area. Alder rows are important carriers of biodiversity. They have been planted by farmers, from ancient times until today, in order to create boundaries between different plots needed to prevent the escape of animals.

4. DEMOCRATIC CONSULTATION

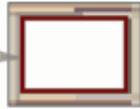


The initial conversation, the mapping of resources and the exploration of internal and external knowledge (both subjective and objective) by a small group of motivated individuals within the community, will then transform as the momentum

grows into a more structured consultation process involving additional local and external players. A democratic consultation can take place with the possibility of making a coalition that is inclusive and representative and that is interesting for all parties involved which will then attract external players who might support it.

Farmers formed the first association to maintain hedges etc. in the spring of 1992. Then a second one in autumn of the same year and another four were created in the surrounding municipalities, and together, during the course of 2002 these six associations and cooperatives created the overarching NFW cooperative. This cooperative is now actively engaged in regional and sometimes also in national debates about the future of farming. Simultaneously, it democratically organizes many activities in its own area.

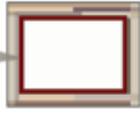
5. REPATTERNING



This is the time to engage in redefining long term objectives, to re-organise or repattern resources in a different way to build a new series of links that facilitate the converting of local dynamics into newly formulated logic. This is a reiterative process that goes back and forth at the same time as the landscape and relationships are being transformed.

Two important modifications for participating dairy farms were strategic for producing effective environmental progress: the use of chemical fertilizer was strongly reduced and slurry was rebuilt into good manure. Within a few years the curves representing nitrogen losses per hectare changed completely. The average loss per ha decreased from 346kg per ha in 1996 to 150kg per ha in 2002. NFW also became involved in a wide range of activities for maintaining and improving nature, and as a result it was possible to achieve qualitative improvements of landscape and biodiversity far beyond those to be gained from single units of production. Gathering, analyzing and understanding data about nature, landscape and the environment became a large research programme carried out by scientists and farmers together. This programme shifted several boundaries between science and practice and transformed several boundaries within science itself while creating new levers for local self-regulation.

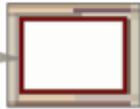
6. SHARED VALUES



As numbers of committed individuals increase, the time comes to consolidate the bonds of the coalition with the crafting of the shared values (the commonly agreed ethics to be respected by all) and common principles (reflecting the main beliefs and the new philosophy of the group). These shared values or common principles help to link people and to strengthen the building of a promising future and the construction of new alternatives that will tie people together. Different forms of cooperation will be created with varying degrees of engagement that can form higher degrees of aggregations (social organisation).

After several rounds of consultation, the NFW cooperative formulated a mission statement. This lists ten commonly shared values that reflect the history of both the area and the cooperative. They also reflect the interests, prospects and the emancipatory ambitions of its people. They involve community, the unity of human and land, farming gently, own rights and entitlements, performing better, reliability, progressing slowly but steadily, not being alone and caring for the future, with satisfaction and joy.

7. NEGOTIATION



In the process, those leading change are confronted with unequal power relations. One of them is the access to resources. The key is the strengthening of farmer organizations and social movements. In addition, new tools to support peasant communities would be welcome. Tools or mechanisms that can support the negotiation process. Thus, the second fundamental tool here is the legal support to communities which are not in a position to reclaim autonomy and rights. One possibility for a tool still to be invented is one that can facilitate access to a bundle of services, in particular legal services. An approach similar to the group of Elders (convened by Nelson Mandela in 2007, including Desmond Tutu, Mary Robinson etc.) could be sought. Instead of former presidents and political leaders, there could be a group of renowned lawyers at the service of the peasant communities that could intervene in specific litigation cases.

Legal tools

Creation of a group of lawyers able to structure an entity that can provide open and free advice and support to communities struggling for their rights. This can be done in close collaboration with the UN bodies and entities that have knowledge and access to information on specific laws and various legal instruments worldwide.

The first two nuclei involved difficult bargaining: the expectations of participating farmers and the surrounding institutions had to be brought in line. A solid contractual base for reciprocity had to be constructed without one of the parties concerned feeling the victim of any opportunistic behavior by the other. The effective grounding of the cooperatives took further shape when a contract was signed by the then minister of agriculture. The cooperatives obtained exemptions from legal obligations (such as injection of slurry into the subsoil) and room for large programmes and a new peasant trajectory towards sustainability.

8. CREATION OF NEW LINKS



Opening up new opportunities will result in the creation of new links. Novel arrangements can then be tried and be amplified. Once the new links are made, they will in turn, open up new opportunities and challenges, bringing forward different ways of using and sharing resources that need to be discussed. Platforms of discussion will be created and evolve which will allow confrontation, alliances, argumentation, choice and mutual interaction and exchange.

As emerging ideas become more convincing, for example, energy saving devices or the use of renewable energies, or the search for less dependency on external inputs or the use of non-synthetic products, or even activities which may or may not be directly related to farming, like small-scale processing, local industries, service provision, local markets, artisanal products, leisure activities such as agro and ecotourism, roof cultivation in cities, new quality products, new fresh products etc., the need for investment may arise.

This will in no way resemble standardised projects, condescending aid, paternalistic approaches of development agencies, silver bullet packages designed by traditional expert systems in controlled environments. Within this framework, investments will go beyond traditional forms of aid that create dependency. It will be investments that result in the creation of new wealth and to which many rural

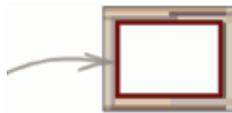
people will commit to. In short, real world investments with real life accountability leading to transparency and regulations.

Financial tools

This is where the need for new tools arise: the need for financial tools. Financial tools are still to be invented as currently occurring in other sectors, (e.g. the UK social bond, using investor capital to reduce a social cost) that would be specifically designed for peasants, while being full financial instruments designed to fulfill a gap, catalyse a possibility and grounded in the reality and scale that can make them useful. In addition, thinking can be pursued on the possibility of creating a world fund that belongs to peasants and serves the creation of wealth within peasant communities.

Good manure became translated into a major correction of the Manure Law that allows for local exceptions to a global set of rules imposed on farming. In the practice of farming this helped considerably to avoid huge cost increases. The web of novelties extends beyond the NFW area , into agrarian policy-making, into science and into changed soil biology beneath the area thus modifying value flows and investments in the regional economy and creating an enlarged goodwill for farming. The wood harvested from the alders and hedgerows is increasingly used for energy production. Thus the cooperative is constructing financial tools that might increase its dynamics, scope and effectiveness.

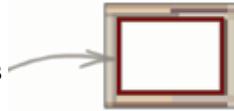
9. AGRICULTURAL TRANSITION PLATFORM



While the complexity of interaction, creativity and responsibility increases at local level, it is possible to imagine formalising the creation of a more global forward looking platform which brings together representatives of peasants, investors, policy makers, corporations, scientists, Civil Society and other relevant players to provide a space where the chiasm of confluent views and interests can find an amplifying beat. The success of the local regeneration of communities could be supported by a reiterative back and forth between local and global dynamics supported by such a platform that would provide open-access tools as and when required in a decentralised fashion.

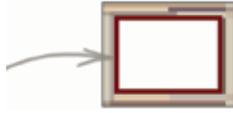
From 2003 onwards the NFW greatly enlarged the field in which it operated (green energy, improving the quality of soil, air, water; strengthen recreation and tourism; cost reduction; animal welfare and health; improving quality of products; management of landscape and nature; and land bank). The working plan contained 30 specific projects, which covered many aspects of the regional economy. Among those who signed the contract were the provincial government, the ministries of agriculture and spatial planning, the district water board, the five municipalities, the environmental federation, nature organisations, and Wageningen University. This agreement has resulted in the creation of a new territorial board in which the NFW and other partners meet at least twice a year.

10. PERMEABILITY AND SYNERGIES



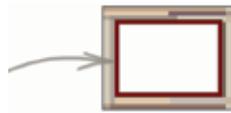
During the transformation process, it is important to insure that, while internal dynamics are being strengthened, the community is not isolated from the outside, and that connections and constructive links in the new fields are reinforced with exchanges with the outside. It can be the moment of confronting the ideas with the outside and of strengthened exchanges and learning. This would imply travel and visits to and from other areas and countries to share information and experiences in different fields such as agroecology, permaculture, regenerative agriculture, farmer-to-farmer, IPM (Integrated Pest Management), learning and testing different practices, techniques and technologies that can be adapted to specific scales and characteristics of production. It also includes learning about other forms of communal functioning, institutions and forms of access. This phase could be thought of as the synergetic plant-fungus relationship where both plant and fungi benefit, with expanded hyphae going further in different directions to explore and bring new resources.

In the initial exploration of relevant heterogeneity people in the NFW, were convinced that many improvements are already available, albeit hidden, hence there is no need to reinvent them. What matters is to find, unwrap, test and combine them. This principle was very important in the case of good manure, and with the construction of area-friendly machinery for slurry application with a specially engineered pump obtained from Germany.

11. EMERGENCE

With expanded networks inside and outside the communities, and the exploring of different channels of production and the selling of quality products (local markets, nested markets etc.) and the fact that similar mechanisms occur widely, a qualitative shift occurs, the possibility of emergence or coalescence becomes real, with powerful ways of producing food and dynamic communities that become the norm rather than the exception. Instead of speaking of the industrial system of food production as the “conventional” system, it is the highly diversified, nutritious and dynamic multifaceted local family production that becomes dominant and the norm.

The construction of this now widely accepted and scientifically supported re-patterning of the social and natural world, contained in the micro-cosmos of the dairy farm, took many years to develop. The approach has spread, like ink dots, all over the country, especially since it impacts positively upon the economy of the farm unit.

12. DISTRIBUTION OF WEALTH

In this context, additional value is created at local level resulting in global wealth, which is not captured by higher levels of aggregation. It is then possible to reinvest within the communities that produce that wealth.

With a cooperative approach, the management of landscape and biodiversity could be lifted to the level of the territory as a whole. The cooperative management of nature and landscape creates an additional flow of income into the regional economy of four million Euros per year for the maintenance of landscape and biodiversity alone. During 2004, the average farm participating in the programmes for nature and landscape management gained an extra value added of some ten thousand Euros. Beyond this are considerable gains due to the novel practices that have been developed. For the participating farms this may render another ten thousand Euros.

To conclude, these are twelve crucial ingredients of transitional processes. In elaborating them we have strongly drawn on real life processes of change that are already occurring in many places of the world, especially in rural areas. Of course this list is not meant as a blue print; transitions are always capricious, they contain elements of surprise, and during the transition people have to deal with the unexpected, hence the need for active involvement and different ingredients, and in every situation the transition follows its own specific trajectory.

As pointed out earlier, processes of transition have starting points which are those places where people decide to explore different possibilities that are laboratories for governments as well. These places are interesting because they show to what degree these new developments are solid. Transitions start in these promising points. We should not pretend to start with comprehensive plans as progress is to be made along the road. In a transition process there cannot be mainstreaming. It is only when starting points become convincing that they can be extended. In many places farmers feel that they could contribute far more but the possibilities are blocked. This is what this transition is about: taking these hindrances away. More wealth can then be unleashed than is presently the case.

The time has come for different players to sit together and plan what is needed to bring the transition forward as a qualitative jump towards new opportunities, in which the different parties work together to outline a more promising future. This implies common ground and permeability amongst different complementary sectors. A firm ground exists already. It needs to be further refined.

Transition Platform

In step 9 above, the place where these different players can intersect, both at global and at local level has been briefly presented. Here, an additional contour is provided. It presents three graphs that reflect the importance of putting peasants at the center:

- peasants as food producers, natural resource managers and guardians of social cohesion
- peasants crafters of wealth
- peasants bringing real foods to markets

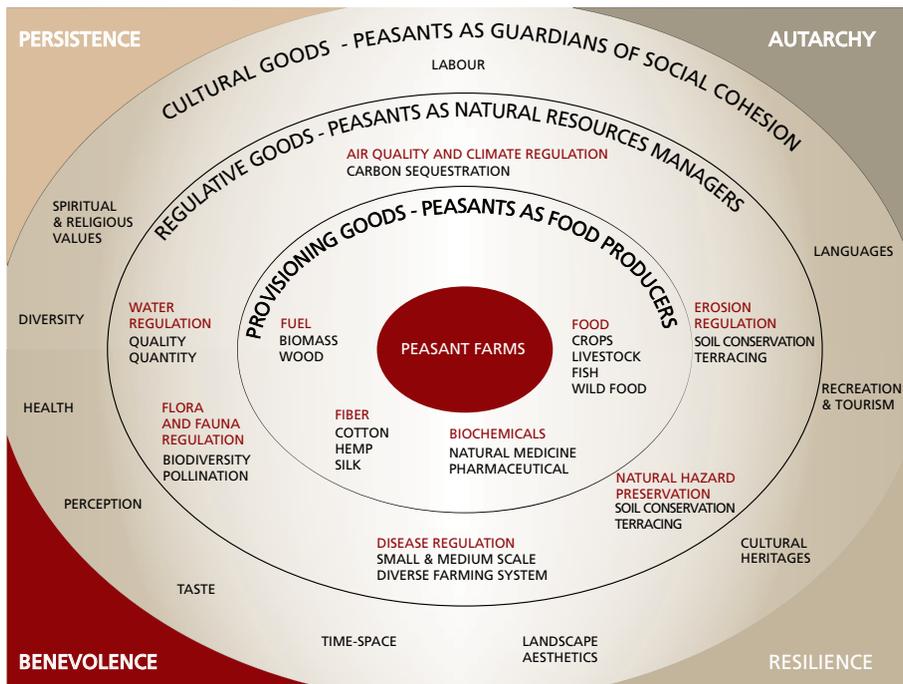
The idea of an agricultural transition platform is to invent a space where tools and mechanisms entirely developed by and for peasants can be imagined, created and tested at all levels. There can be as many agricultural transition platforms as there are transitions, available in a decentralised fashion which could resemble the way the peasant movements themselves are constructed. The point of bringing the latest thinking around a pro-peasant pool is to take it beyond the perpetual

fact that agriculture is often the last wheel of the cart, when it should instead take the lead and be the engine of the wealth of local communities, and create interest, willingness and space for the latest innovation in different fields (technology, information, services etc.). Rather than having piecemeal interventions in the so-called development projects, the invention of peasant- specific tools could be motivated and facilitated in many layers and specialties.

The platform aims at bringing peasants at the center, demonstrating their contribution to society and to the environment as a whole. It would promote investments that can be beneficial to all parties concerned. It would re-install peasants in the driving seat of meaningful markets.

Here is a short description of the three graphs which provide a snap-shot. Proposals of the actual functioning of the platform are beyond the scope of this paper and could be considered as a next stage.

Peasants as food producers, as natural resource managers, and as guardians of social cohesion



Peasants do not only produce food (crops, livestock and derived products, fish and wild food), they also produce fuel (such as biomass and wood), fibre (through

the production of cotton, hemp and silk) and biochemicals (natural medicine and pharmaceuticals).

As natural resource managers, peasants contribute to water regulation both in quality and quantity, in the regulation of the local flora and fauna (increasing and maintaining biodiversity and allowing pollination), in regulating diseases by maintaining a high diversity in their farms (contrary to industrial farming that creates the ideal conditions to breed pandemics), in natural hazard preservation such as hurricanes etc. by building terraces and applying soil conservation practices, in regulating erosion through conservation practices and in air quality and climate regulation, cooling the planet by sequestering carbon in the soil and in plants. Peasants both mitigate and adapt to climate change.

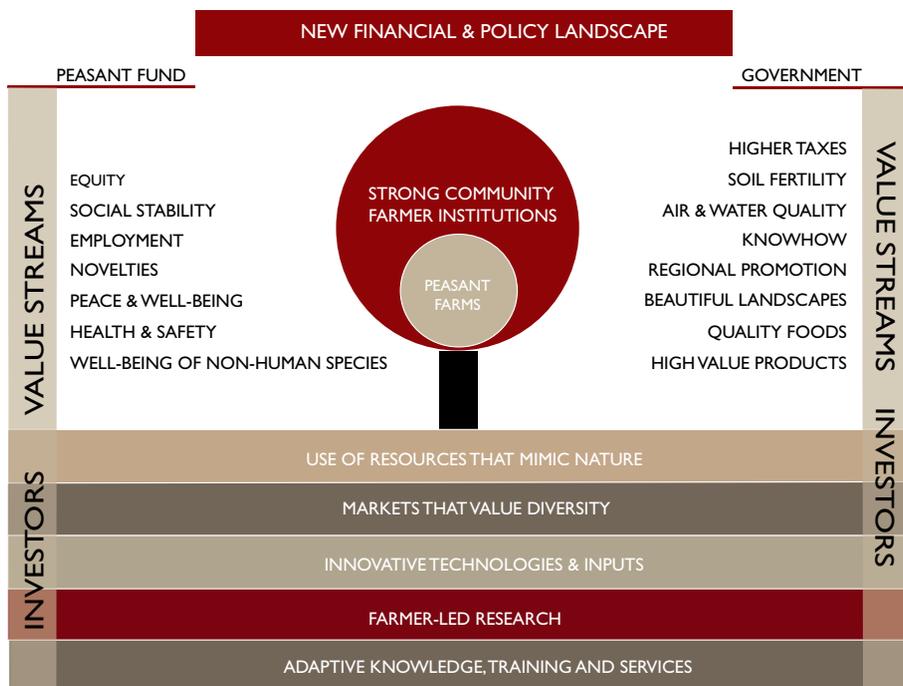
As guardians of social cohesion, more than anything, peasants provide labour, they are also the guardians of thousands of languages, and maintain cultural heritages, spiritual and religious values, landscape esthetics, places for recreation and tourism, and another dimension of time ; a different perception of the surroundings and bring diversified and quality tastes to foods.

Sustainable farming embodies fundamental principles (outlined in *Reaping the Benefits*, 2009) as follows:

- persistence (the capacity to continue to deliver desired outputs over long periods of time -human generations, thus conferring predictability),
- autarchy (the capacity to deliver desired outputs from inputs and resources -factors of production- acquired from within key system boundaries),
- resilience (the capacity to absorb, utilise or even benefit from perturbations -shocks and stresses, and so persist without qualitative changes in structure) and
- benevolence (the capacity to produce desired outputs - food, fibre, fuel, oil- while sustaining the functioning of ecosystem services and not causing depletion of natural capital - e.g. minerals, biodiversity, soil, clean water).

Peasants crafters of wealth

Peasants can create value which at higher levels of aggregation will produce wealth. Within an enabling environment (rights, policies, governance, investments), peasant farming becomes the most productive form of farming.



In the graph, the various layers that can potentially benefit from investment to feed the process and catalyse the creation of wealth are the following:

The use of resources that mimic nature

land and land-related institutions; water, access and irrigations systems; inputs and implements adapted to the local needs, dimension and social organisation

Markets that value diversity

market infrastructure, processing facilities, storage, packaging, branding, certification (quality, origin..), distribution, marketing (local markets, retail, wholesale..), consumption (real foods, fresh, regionality..)

Innovative technologies and inputs

inputs locally specific, family farm specific - biochemicals (biopesticide, biofertilizers, vermicompost..), - small-medium machinery and tools

Farmer-led research

co-evolution in local conditions, adaptation to climate change, related to crops, livestock, wildlife, agroecosystems

Adaptive knowledge, training and services

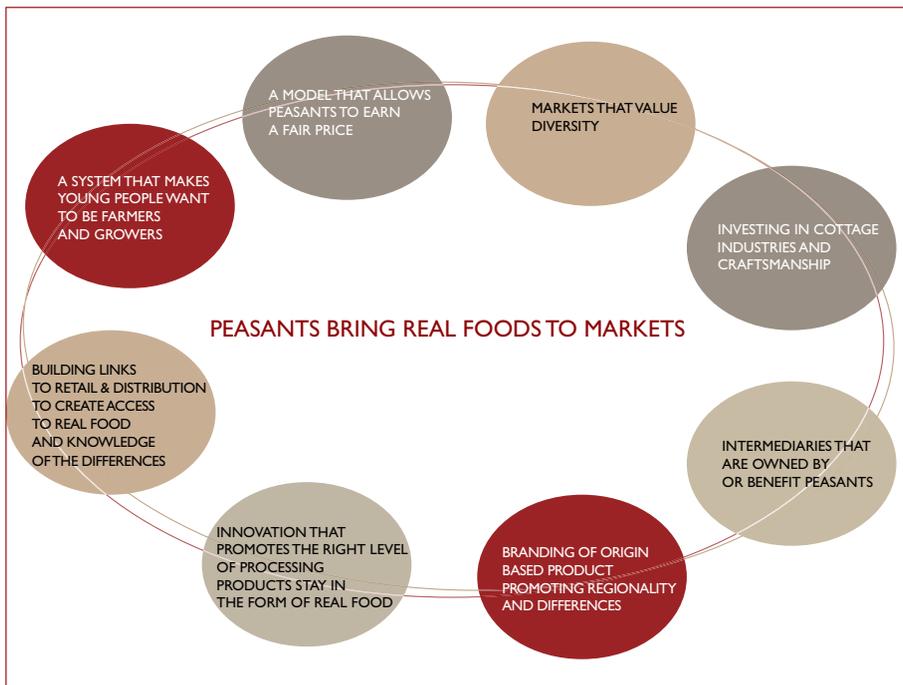
open knowledge pool - technology options - scientific knowledge, - traditional knowledge, - training (endogenous and exogenous), - Farmer Field Schools, services.

These investments to be channelled through peasant institutions can facilitate the creation of value streams such as quality foods, high value products, beautiful landscapes, the recognition and promotion of a region, knowhow, air and water quality, soil fertility, which all contribute to higher wealth and higher taxes perceived by the local authorities which can be reinvested within the community. It would also contribute to social stability, equity and employment, to novelties being created, to health and safety and to the generation of peace and well-being for humans and non-human species.

The public policies on one side and the creation of a peasant fund that belongs to peasants would be the enabling mechanisms that render the system viable in the long term.

Peasants bring real foods to the markets

In turn, peasants become the drivers of the marketing and processing of foods within the local economies and are able to reinvest locally within the communities. In this model, peasants earn a fair price, market value diversity, investment favours cottage industries and craftsmanship, intermediaries are owned by or benefit farmers. The branding is made for products of origin which promotes regionality and differences, processing allows the product to stay in the form of real food. Links to retail and distribution create access to a market that recognises quality and differences and overall the system makes young people want to be farmers and growers.



The Policies

This paper is about a transition towards more viable patterns. Proposals for policies presented here are only those related to the transition process. They concern firstly the importance of understanding peasants for what they are and their potential to create wealth, and secondly the transformations on the ground that can enable endogenous forms of development to thrive. Some other more general policies are briefly touched upon under the section global policies.

One of the important outcomes of this paper is that it is a mistake to put apples and pears together in the same basket. Peasant farming and corporate farming are worlds apart and obey a completely different logic of production. Designing the same policies for these two systems as one entity is a mistake which automatically prejudices one or the other.

The difference lies in three key dimensions:

- **value**
Field studies have demonstrated that peasant farming produces more value than any other mode of farming, even in those places and at that time when others are incapable of doing so. Without peasant farming many places would be unused. When prices are low peasants continue to produce whilst corporations stop.
- **nature**
Peasant farming builds on living nature, by constantly exploring its potential and amplifying it. Instead of destroying nature, peasants co-evolve with it. They protect biodiversity, ecosystems, waters, soils and other strategic resources.
- **relationships**
The peasant mode of farming is part of an intricate web of relationships, connections and extended networks which stimulate local economies, hence, the development of peasant farming translates into substantial increases in the quality of life in rural areas as well as in the neighboring cities.

Different policies can be thought of to support a transition towards a more viable, peasant way of farming; proposals are presented here grouped under three sets. In every situation the right mix would need to be defined. Within a range of different possibilities, choices can be made. In addition, these would be in line with the UN recognition of the rights of peasants.

First set of proposed policies

Shift priorities towards the peasant way of farming

This implies to recognize the economical and social value of peasant farming and reconsider the present support to industrial agriculture and agribusiness (subsidised synthetic inputs and fossil fuel, agricultural subsidies, non-payment of social and environmental externalities etc.). It implies a shift towards agroecology and food sovereignty. It also implies strengthening local organisations, as the locus for peasant-based innovation and the management of resources, with the ability to adapt to changing conditions.

Second set of proposed policies

Recognise the need for basic rights, autonomy and self-determination

As stated earlier, a transition cannot take place without the respect of minimum rights and the protection of these rights. Access rights as well as social and labour rights are the necessary and unavoidable baselines for the potential *on offer* within communities to find a space to flourish. This means stopping land grabs and reviewing the conditions for access to land, water, credit and markets for women and men. It means the negotiation at local level of protected open spaces, for innovation and the recrafting of the landscapes. Regarding markets, it has been recognised that markets can be effective mechanism to link the production and consumption of foods, but we also know that vast distortions can occur so it is crucial that markets are embedded in well defined institutional contexts which is in itself, an open ground for policy. A high degree of monopolisation and speculation that destroys much of the social fabric and ruins ecologies, is to be avoided. The balance has to be reestablished by allowing for small and medium enterprise to prosper.

Third set of proposed policies

Remunerate peasants decently; an insurance for today and tomorrow

To live with dignity, peasants need stability and higher prices for their produce. One example of possible policy change in this direction, is the creation of new markets that support locally produced foods (programmes that establish that a minimum percentage, usually 30 percent, of foods served in public institutions such as schools and hospitals, must be procured locally). A decent price that can cover the cost of production implies also, that governments do not allow the dumping of highly subsidised cheap foods from abroad, that a minimum price is set, that food speculation is forbidden and, that public stocks are built.

Peasants need to be paid for the services they render to human societies such as: gardening the countryside, creating beautiful and changing landscapes, bringing an esthetic and artistic dimensions to our surroundings; breeding new crops which end up on our plates in a diversity of shapes, colors and tastes and new animal breeds; improving our health by bringing diverse tasty foods; reducing pain, suffering and violence by raising animals in more humane conditions; creating living places for wildlife (birds, insects) and families; storing carbon in soils and crops and keeping soils alive and water clean. Remuneration can be sought for peasants for their positive contributions to maintaining the beauty of landscapes, keeping and increasing biodiversity, mitigating climate change etc. In this set of policies it is important to avoid heavy bureaucracy and overregulation. Here legally conditioned self-regulation is the key.

Giving insurance to societies that those who produce foods will still exist tomorrow. In order to make sure that in the near future we will still have the human capacities and knowledge to produce, and produce well, there is a need to introduce a flat rate that helps family farmers survive instabilities and fluctuations. Possible ways would be the payment of a flat rate to peasants which would be a kind of insurance that society would pay to make sure that in the long term human societies will still have the production of foods, the gardening of landscapes and the availability of fresh water and living soil. An example, to be adjusted to local circumstances, is that being planned now for the European Union for 2014 onwards. The *tier system* which is based on three levels of payments: a flat rate per ha with a ceiling, an additional payment for those bringing additional benefits to the environment, in which case this can also be done by the community as a whole which gets a lump sum, and thirdly an additional payment that rewards the creation of innovative markets.

Global policies

New international trade rules are needed. International trade rules, in the WTO (World Trade Organisation) and under bilateral and regional trade agreements, would benefit human societies by being changed to support rather than undermine local ecologies and economies. International trade rules for food, should therefore, only concern the produce that crosses borders, which is only about 10 per cent of the total food produced worldwide. Each country should have the right to decide its own levels of self-sufficiency, and its own ways of protecting and supporting sustainable local and national food production and consumption. All direct and indirect subsidies on export production in the industrial countries should be brought to an end.

Other global policy proposals have been developed elsewhere. *A Viable Food Future; Policies and actions to eradicate hunger and malnutrition* and other policy documents are available at www.ag-transition.org

Alliances

Who can make the agricultural transition happen?

The agriculture arena has been filled in the last decade by an infinite variety of those who want to “help the poor”, foundations, corporations, public and private governmental and non-governmental institutions, organisations, religious groups etc. often well intended, who have realised that most of “the poor” are in rural and marginalised areas and that if you want to work on numbers, this is where highest numbers are found: malnutrition, diseases, death rates, stunted children, undernourishment, hunger, millions of lives destroyed by death, disability, deprivation, child mortality, inequalities, hunger hot spots, chronic food emergency and many more... Words borrowed from the military jargon are used such as: doing this or that to *target* more effective action. All these *poor*, become *target* groups. Targets of sometimes the most inappropriate and *wacky* approaches in the name of doing *good*.

The progressive overlapping of mandates of different public and private institutions and the exponential growth of a myriad of agencies is well described in the 2007 Independent External Evaluation of FAO, the UN’s largest technical body, dealing with food and agriculture. In the early years of the agency, 1945, the idea was that FAO would be *the* world organisation dedicated to food and agriculture with a mandate to promote the common welfare by raising levels of nutrition and standards of living, bettering the conditions of rural populations. Universities and research organisations were also providing pools of expertise to agricultural development. Since then, FAO has had, and continues to have, pools of highly dedicated experts in all disciplines related to agriculture.

Over the years FAO gave birth to other institutions such as World Food Programme (dealing with food aid) and Bioversity (dealing with genetic resources). Others from the UN family such as United Nations Development Programme switched and expanded their initial *raison d’être* which was to finance the UN’s specialised agencies by building their own competing technical branches, and drastically reducing the financing of the specialised agencies. IFIs, the International Financial Institutions such as the World Bank and the IMF that provide loans to countries have actively pursued their own agendas of social and economical restructuring. In addition, thousands of NGOs and civil society organisations have multiplied their actions in the field. In the countries, the need to create special units and train personnel to be able to deal and cope with the massive volume and increasingly overlapping amount of contradictory messages from this myriad of agencies and organisations, became a real struggle with an increasingly bureaucratic process to absorb projects and repay loans. The UN did try to mitigate this overdose of development by harmonising messages on the ground, but even this, became, in itself, quite a cumbersome process.

When you talk about agriculture you talk about volumes, you talk big, and you talk about the primary creators of value, the crafters of foods and originators of wealth. This creates an irresistible attraction to those who want to capture value and take it to higher levels of aggregation, by those who look for *virgin lands* for quick and vast profit-making and for those who feel a moral responsibility to share their own wealth with the poor or who consider it immoral to live in a world with such deepening disparities; the unbearable lightness of being rich in a world of poverty.

The last decade has seen the quick spread of philanthropy with new foundations occupying a field previously the ground of the more formal developed organisations. This new wave comes with the mentality of the Silicon Valley, grounded in the venture capital high-tech industry, obsessed by success, grounded in a culture of efficiency, innovation, fast tracks and visible results. The world of Hollywood stars with dreams to be made true.

Foundations like the Gates did not start with agriculture; they came to this land at a later stage, after working in the education field, donating computers to libraries and public and institutions, and in the health sector, mainly tackling local poverty in the US. The initial team that realised that agriculture was the inescapable next move if the foundation was to reach scale, had absolutely no background in agriculture. It was the mix of a medical physician, an IT specialist and a McKinsey indoctrinated. It was not so much the backgrounds of the initial individuals that gave it the direction it took, but a shared world view, a shared logic, the belief that technology has the power to resolve all problems and create the ideal material world for all of us. Little in the hands of people, societies and rights, lots in the pushing for simple solutions, technical packages and ready-made recipes, all this adorned with the right vocabulary of participation, women and sustainability. In this worldview, life is binary: on one side there are *problems* and on the other side *solutions*. The wide range of subtle shades in-between is totally obliterated along with the intricate web of relationships and connections. Co-evolution and the grounding in time and history is ignored. Projects are detached from time, they are timeless, *atemporal*. And as people are cumbersome and difficult to apprehend they are dealt with as necessary but not primary objects of progress. The humane dimension is a result rather than an engine for change.

Some other foundations have been in the scene for longer and pursue their regular partnering with communities and their questioning of on-going approaches. Others joined recently, such as Google and Skoll (from the inventor of eBay) and come through on different entry points, some of which questioning the rigid and static approaches that have been applied during the last six decades, with very little renewal, very little innovation and limited creativity, giving the impression that the dinosaurs of development are going round in circles. The danger is in the appropriation of concepts that can be wrongly understood and become misleading,

as they use the same approaches and world vision that brought the problems of the farming sector in the first place.

And finally, there is a recent interest from the financial world for the agriculture arena. Besides massive investments in land, known as *land grabs*, and in corporate farming, still very little is known, and no positive outcome can be presented yet, despite fast moves in the last years to develop the impact investment industry, supposedly to bring social and environmental good. This is still in its infancy for the moment and in the hands of some who still maintain a Mickey Mouse logic, but could be the source of major shifts in the close future into more viable models of farming, if the arrogance of the sector could be left aside and if the financial players would have the ability to grasp the intricacies of a widely complex reality, worlds apart from their own.

With regards to development by NGOs, civil society organisations and the myriad of small organisations worldwide, their number is so high, and their diversity so big that their role is not described here, as they are felt to be part of this constellation of an immune system of the planet touched upon in the first section.

At the end of the day, it is not the international mastodons of development entangled in the intricacies of bureaucracy, too large to be efficient, too structured to be flexible, with their hands tied by governments representing different interests, flirting dangerously with private interests, too often tending to grasp nirvana concepts that snowball and end up within the same frame of mind than approaches that are now half a century old, that will bring major change alone. Nor will it be the new philanthropic agencies, which sometimes appear to be the juggernaut of history, despite their massive injection of liquidities into the system, nor will it be, the expert systems alone, that have proven their capacity to create ignorance as much as they create knowledge, nor will it be of course, the financial system, at least in the way it is presently structured and focused; at the end of the day, it will be the peasant movements themselves that will have the power to make change happen, the peasant movements together with the partners that are prepared to embrace a different logic. The agricultural transition is in the hands of these new alliances. And then, the other many different players can come to participate to the transition towards not only more viable forms of food production, but also more viable forms of existence, as there is much to learn about our relationship to time, to uncertainty, to aesthetics, to pleasure and delight of discovering what the mystery of farming is, accepting to turn towards a nature we rarely apprehend, let alone work with, let alone live with, in permanent co-evolution and complementarity.

Partnerships and Alliances

Much has been written and done about partnerships and alliances. Some of them work, some don't. Massive amounts of money have been injected in this exercise. It was the term *a la mode* in mid 2000, a way to start the century with a repainted fresh façade. But the key is in a different logic. If partnerships are just there to spread vested interests, and this is what happened often with this new Trojan horse, it just expands business as usual and reinforces established powers. When, on the contrary, it is based on a genuine desire for constructive change with complementary interests and with partners on equal footing, then it has the power to transform reality into newly regenerated patterns. A transition is by essence a transformation of power relationships. It is not the purpose of this paper to go in-depth into the types of coalitions and the types of agreements that can support and trigger a successful transition. But this would be the necessary next move, and a fundamental part of the proposed platform in step 9.

In the example of a successful transition presented in Part IV, a key to the success, and the resulting wealth that was created, came from the coalescence of alliances with different partners at different times, each one bringing its own brick to the constructive process. The farmer organisations progressively gained strength and negotiated power, there was first one, then two then six associations until the regional cooperative was formed; and alliances and contractual agreements were made at different stages, first with the line agencies, both local and national, then with a multidisciplinary group of scientists who could operate outside the vested routines, and then with a range of institutional partners (listed under step 9) who actively engaged in bringing about the goals of the working plan or "territorial contract" prepared by the North Frisian Woodlands. Bringing about a successful transition relies on the possibility to operate on a policy environment that enables rather than blocks the transformation process, and that entails a learning process on both sides of the equation.

Conclusion

It is refreshing to realise that we can keep science fiction for family movies on a Sunday afternoon, and be more serious about what can cool the planet and cool us down. It need not be large scale geo-engineering intervening in our oceans, soils and atmospheres. The solutions are so close that we become cross-eyed. Farming is a profession, like any other, but it needs to be understood for what it is. In the same way that a primary teacher does not have the same priorities and the same way of functioning than a trader, a family farmer or peasant does not function as a Wall Street speculator. Being a farmer is tough, no need to idealise, it needs knowledge, strength and adaptability, at the same time it is rewarding; you get the result of your efforts in your hands, you can even taste it, you can be proud of it, and create a surrounding within nature where, if you make it, your family can live. The pride, doubt and innovation are constantly with you. And no day is like yesterday. This is perhaps the main difference with the life of a bureaucrat. It is easier to be a farmer when you benefit from the accumulated knowledge of your parents and ancestors. This knowledge is the most valuable heritage, but you can also become a peasant of your own choice, when you have the courage to leave high heels and the air conditioning behind. The problem is that farmers have been put in two separate boxes: those who can fit in the industrial boom and adopt all the great technologies that make oil companies rich, and those who are poor and miserable and need to be helped and told what to do. Not being understood for what they are and forced into counterproductive systems, peasants have, in effect, been marginalised and exploited. At the end of the day, hearing so much about the poor small farmer, one wonders if this constructed extraterrestrial being is shorter in size.

Fortunately for human societies, there are many of these beings around, actually they are everywhere, whatever the climate, whatever the soil, as tough as the conditions can be, still, you find peasants. Millions of them, and the good news is that they, we, are organizing. This is the only insurance to have something to eat in the future, and also livable places to be, and still exist. So, instead of going permanently against them, it would be a good idea for all to hold on for a second, change glasses, and observe reality from a different angle. And see in which way to accompany a transition that can be beneficial to *the 99 percent*, because after all, who doesn't like to sit at a table or on a carpet and share the delights of fresh foods. And then yes, let the different players join, let's let our imaginations open up and get all the ideas and high tech and IT and let many others provide the means and invent the still unknown tools, policies and mechanisms of the peasants of the third millennium.



ANNEXES

BIBLIOGRAPHY



**TABLE ON SMALL FARMS
(under 2 ha)**

COUNTRIES	Farms under 2 ha as percentage of total number of farms		
Lesotho	97.99	> 50%	
China	97.91		
Cook Islands	95.24		
Egypt	95.14		
Vietnam	94.81		
Georgia	93.22		
Nepal	92.44		
Kyrgyz Rep.	92.18		
Malta	90.63		
Albania	90.01		
Panama *	89.59		
Cape Verde *	88.96		
Guatemala	88.92		
Indonesia	88.73		
Saint Vincent	87.76		
Ethiopia	87.13		
Lebanon	86.76		
Jordan	86.19		
Jamaica	84.56		
Mozambique	84.16		
Yemen	83.87		
American Samoa (USA)	83.61		
India	81.8		
Slovak Republic	81.64		> 50%
Saint Lucia	80.77		
Guinea	78.29		
Bulgaria *	77.01		
Qatar	74.11		
Laos Peoples Dem.Rep.	73.5		
Cyprus	71.52		
Philippines	68.13		
Croatia	66.74		
Iran, Islamic Rep.	59.54		
Pakistan	57.62		
Italy	57.22		
Myanmar	56.92		
Côte d'Ivoire	56.31		
French Guiana (Fr)	56.3		
Portugal	54.59		
North. Mariana Isl. (USA)	53.74		
Trinidad and Tobago	53.52		
Puerto Rico (USA)**	52.72		
Poland	50.94		
Samoa	50.83		

Virgin Islands (US)	49,74	25-50%
Greece	49,04	
Serbia	46,26	
Guam (USA)	45,75	
Thailand	45,5	
Mali	45,28	
Czech Republic	44,37	
Morocco	43,6	
Ecuador	43,43	
Réunion (Fr)	41,81	
Spain	40,71	
Hungary	40,27	
Estonia	39,95	
Namibia	38,94	
Senegal	37,47	
Turkey	34,54	
Algeria	34,38	
Colombia	31,63	
Togo	29,33	

Chile	24,79	10-25%
Venezuela	22,64	
Nicaragua	21,64	
Brazil	20,32	
Belgium	17,19	
France	16,83	
New Zealand**	16,79	
Netherlands	15,87	
Austria	14,59	
United States **	14,41	
United Kingdom	13,88	
Luxembourg	12,46	
Uruguay**	10,96	1-10%
Germany	8,02	
Lithuania	7,91	
Norway	7,83	
Latvia	6,17	
Sweden	3,41	
Finland	3,39	
Ireland	2,19	
Denmark	1,69	

* < 1 ha as % of total numbers of farms

** < 5 ha as % of total numbers of farms

*** Excluding 170 Government Holdings with 30772 ha, not classified by size of holding

The total number of farms in the countries above was 435 918 525 which is about 83 % of all farms in the world.

< 2 Ha as % of total numbers of farms: 85 %

Source: FAO (2010). 2000 World Census of Agriculture

**TABLE ON TREND OF SMALL FARMS
INCREASE OR DECREASE OF THE NUMBER OF FARMS UNDER 2 HA**

COUNTRIES	Increase or decrease of the number of farms under 2 ha in 2000*** compared with the number of farms under 2 Ha in 1970***	
American Samoa (USA)	329.47	Very large increase, >150%
Panama *	314.62	
Pakistan	260.21	
Philippines	240.94	
Ethiopia	155.05	
Lesotho	139.7	Large increase, 70- 150 %
Nepal	103.83	
India	99.69	
Thailand	79.03	
French Guiana (Fr)	73.57	
Cyprus	24.78	Increase, 1 - 25 %
Saint Lucia	19.16	
North. Mariana Isl. (USA)	17.35	
United States **	14.41	
Brazil	11.06	
Virgin Islands (US)	6.74	
United Kingdom	1.88	

Turkey	-3.59	Decrease, 1-31 %
Italy	-19.76	
Greece**	-24.47	
Spain	-30.03	
Puerto Rico (USA) **	-52.7	Large decrease, > 50%
Portugal	-53.07	
Netherlands	-53.91	
France	-60.46	
Austria	-61.62	
Luxembourg	-70.21	
Germany	-80.62	
Norway	-83.38	
Belgium	-84.62	
Denmark**	-86.23	
Ireland	-86.58	
Réunion (Fr)	-88.36	
Guam (USA)	-91.37	
Finland	-91.81	

* The figures are for farms < 1 Ha (No figures available for < 2 Ha or < 5 Ha)

** The figures are for farms < 5 Ha (No figures available for < 1 Ha or < 2 Ha)

*** The years are within two periods; 1969-1985 and 1996-2005

**** Excluding 170 Government Holdings with 30772 ha, not classified by size of holding

The number of farms in the countries above is about 25 % of the total number of farms in the world (IAASTD figures, and 30% of the total number of farms in the 2000 census (438 million farms).

Source: FAO World Census of Agriculture

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We seem to be part of a mystery that we can barely understand, probably the mystery of being a human, embedded in all forms of living things, near and far, at the same time. Slowly, over the years, we have closed our windows of perception to the outside, to the unstable, unpredictable and ever evolving surroundings. In our great fear of the unknown, the unexpected and uncontrollable, we have crafted a straightjacket which has become increasingly tight. And it is with surprise that we acknowledge the rollercoaster of never ending crises. Perhaps the dreams of harmony and peace, stated in the Universal Declaration of Human Rights can still be realised. There is a mystery within this mystery, which may very well hold the keys of many of these enigmas. It is hidden, invisible and rarely acknowledged. It is the mystery of farming. Peasants embedded within nature, working closely with plants and animals selected over millennia.

AGRICULTURAL TRANSITION

a different logic

The More and Better Network